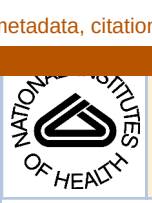

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Judgments about Work and the Features of Young Adults' Jobs *

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Abstract

This study revisits the relationship between adolescent judgments about work and later job characteristics, tackling the twin temporal dimensions of age and history. Drawing on 15 consecutive cohorts of high school seniors, we examine 1) whether adolescents' judgments about work become more strongly predictive of the characteristics of their jobs as they move through their twenties, and 2) whether the relationship between adolescents' judgments about work and their later job characteristics has weakened across cohorts of high school seniors between 1976 and 1990. Findings indicate a limited role of history; the larger life course story of these findings is tied to age. Adolescent judgments about work, measured in the senior year of high school, became more predictive of earnings with age during this period of the life course. They were also most predictive of the level of intrinsic job characteristics at the oldest age we examined, but the pattern was not one of progressive strengthening with age as it was for earnings.

Keywords

work preferences; job values; judgments about work; career; transition to adulthood; occupational attainment

Sociologists have long looked to adolescents' work-related ambitions as important precursors to adult occupational attainment, and for what they say about how adolescents view their opportunities. These ambitions include mobility expectations—reflected in statements about how far one expects to go in school or the status of the occupation one expects to enter—and evaluations of the desirability of different kinds of job attributes. Research on the latter, referred to varyingly as "judgments about work" (Kohn & Schooler, 1969)[1], or job, occupational, or

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[1]The dominant terminology for these evaluations is work values, or a variant thereof. We depart from this practice, adopting Kohn and Schooler's (1969) terminology, because scholars have debated over whether the measures typically used in this area, ours included, truly capture "values." For our purposes in this paper it does not matter whether the orientations we measure are truly values and so we adopt the less controversial terminology.

work "values" (e.g., Davis, 1965; Kalleberg, 1977; Mortimer & Lorence, 1979; Marini et al., 1996; Johnson 2001; Halaby, 2003), has demonstrated their importance as precursors to important attributes of later jobs, including levels of autonomy and pay (e.g., Mortimer & Lorence, 1979; Lindsay & Knox, 1984; Judge & Bretz, 1992). Despite over four decades of research to this effect, prior studies have not examined how closely adolescent judgments about work predict job characteristics at different points during the transition to adulthood. Yet the ability of young people to obtain jobs with the characteristics they find highly desirable is likely to change during this period of the life course. More attention is needed to understand how quickly and how closely young people's jobs reflect their earlier orientations. Moreover, prior studies have focused on the experience of cohorts in a restricted historical period and have not considered how social change may affect this relationship. The social context in which adolescents plan and work toward their occupational goals has changed rapidly over the past several decades. Important changes in the nature of the life course and in the economy suggest we need renewed attention to this fundamental process.

In this paper, we argue that the process linking work orientations and later jobs can be better understood by paying heed to Mills' (1959) call for the study of how history and biography intersect. The life course perspective, with which we approach this study of work lives, takes this call as its central focus (Elder, Johnson & Crosnoe, 2003). Specifically, we build on prior research on judgments about work and their role in occupational outcomes by introducing these two temporal considerations: 1) biographical, or age-related, time, and 2) historical time. We examine the relationship of adolescent judgments about work with later job characteristics across the transition to adulthood, for cohorts of high school seniors from the mid 1970s to 1990. By comparing how adolescents' judgments about work are related to the characteristics of their jobs at four points during their twenties, we are able to examine whether these preferences become more strongly connected to work outcomes as young people move through their early work lives. By examining the same period of the life span for 15 cohorts, we are also able to evaluate the extent of recent historical change in the relationship between adolescents' judgments about work and later job characteristics.

Our study, with its life-course contextual approach, is fairly unique in its extensive analysis of age-related change while simultaneously considering how different cohorts' experiences have varied historically. Several important recent studies have examined how career processes intersect with historical change, including McBrier and Wilson's (2004) study of downward mobility in the 1990s, Hofferth and Curtin's (2006) study of the 1993 passage of the Family Medical Leave Act and its implications for employment continuity, job retention and wages, and Maume's (2004) cohort comparisons of the glass ceiling effect in managerial attainment, but ours is the first to examine age and historical dynamics in how work-related ambitions are related to work outcomes. Doing so tells us about how young people think about their work and how it is related to the career-building that occurs during the transition to adulthood. It also tells us about how young people's work and its relation to work orientations are changing over time. Ultimately, the findings have implications both for our understanding of human agency and career development, and for how well contemporary youth in particular are prepared for their occupational futures in an ever-changing economy.

Judgments about Work

Judgments about work indicate the importance people place on a range of potential work features such as pay, job security, and autonomy, and represent a key component of adolescents' desired occupational futures. Two underlying dimensions—intrinsic and extrinsic—structure individual differences in the importance attached to job rewards (Kohn & Schooler, 1969; Loscocco, 1989; de Vaus & McAllister, 1991; Adler & Brayfield, 1997; Johnson et al., 2007). Intrinsic rewards are those derived from work tasks themselves; extrinsic rewards are

obtained from the job but are external to the experience of working. Over the years, scholars have introduced more nuanced distinctions, dividing both intrinsic and extrinsic categories of work features into narrower subsets of rewards (e.g., Kalleberg, 1977; Mortimer & Lorence, 1979). Previous research utilizing the data used in the current project empirically supports this conceptualization, distinguishing sets of extrinsic and intrinsic reward types (Herzog, 1982; Marini et al., 1996; Johnson, 2002).

Judgments about work are predictive of holding jobs with higher levels of job attributes evaluated earlier as more important. In several key studies, young people's judgments about work, assessed in the 12th grade or as seniors in college, predicted the level of desired rewards in their later jobs (Mortimer & Lorence, 1979; Lindsay & Knox, 1984; Johnson 2001). Mortimer and Lorence (1979), for example, found that the intrinsic and extrinsic orientations of college seniors were associated with greater autonomy and earnings, respectively, in jobs held ten years later (see also Mortimer, Lorence & Kumka, 1986).

Age and the Early Career

Past research on judgments about work has given insufficient attention to the extent to which desired job characteristics are reflective of earlier orientations at different points in the early career. By early career, we are specifically thinking about the twenties and early thirties—a time of settling into longer-term jobs for many. Separate studies have evaluated the connections between judgments about work measured during the 12th grade with jobs held in the mid-twenties (Lindsay & Knox, 1984) and early thirties (Johnson, 2001), and between judgments about work during the senior year of college with jobs held in the early thirties (Mortimer & Lorence, 1979). Because these studies sampled different populations, measured key constructs differently, and evaluated the relationships between judgments about work and job characteristics over different duration intervals, there is no way to determine whether the strength of relationships varied by the age of assessment. Are adolescents' judgments about work most reflected in the jobs they hold right away or do the jobs adolescents hold across the transition to adulthood become increasingly reflective of these orientations?

Two dynamic processes compete to influence how well prior orientations will be reflected in job conditions at different ages during the early career. Both orientations toward work and jobs change during the transition to adulthood. Because judgments about work are at least somewhat dynamic, it is reasonable to expect that they will be more closely connected to the characteristics of workers' jobs the closer in time the two are examined. This pattern is observed for many preference-outcome comparisons, including other work-related ambitions. For example, the match between occupational aspirations and occupation held is stronger the closer in time they are compared (e.g., Rindfuss, Cooksey, & Sutterlin, 1999). Working against this, however, is the likelihood that as young people gain work experience and maturity, they are better able to obtain employment consistent with their preferences. Next we discuss each of these processes in greater detail.

Changes in Judgments about Work

Taking first judgments about work, research shows the average importance attached to a wide range of potential job characteristics declines as young people move through the young adult years and gain work experience (Johnson, 2001). As preferences tend to adapt to opportunities, this pattern likely reflects growing realism in young people's orientations. Judgments about work also demonstrate some amount of normative stability, however, with moderate over-time correlations evident (Mortimer & Lorence, 1979; Lindsay & Knox 1984; Johnson, 2001). This type of stability captures the maintenance of individual differences over time.

Ongoing changes in orientations suggests that all else being equal, orientations should be stronger predictors of job conditions when assessed close in time to one another compared to over longer durations. Although they are not directly comparable, results from two studies of how the characteristics of young adults' job are linked to their judgments about work as high school seniors are suggestive of this pattern. Observed relationships between adolescent judgments about work and later job characteristics were stronger and more consistent when assessed seven years after high school (Lindsay & Knox, 1984) than when assessed 13–14 years after high school (Johnson, 2001). Importantly, however, work orientations not only change, but jobs do too.

Changes in Job Conditions

Changing jobs and moving in and out of the labor force is common among young people (Topel & Ward, 1992; U.S. Dept. of Labor, 2006). Employment is more volatile during the transition to adulthood than at older ages and it may take some time for young people to obtain jobs that meet their preferences to any large degree. There is much trial and error, and "floundering" between unrelated jobs during the early work career. In addition, young people may need to take jobs that do not fulfill their preferences as stepping stones to more desirable jobs or to support themselves while they pursue education and other training to qualify for more desirable jobs.

Job changing patterns by age reflect these processes. Findings from the National Longitudinal Survey of Youth 1979, for example, indicate that persons born 1957–1964 held an average of 10.5 jobs between the ages of 18 and 40 (U.S. Dept. of Labor, 2006). Three-quarters of those jobs were held between the ages of 18 and 25. Consistent with this, early jobs are often of short duration. Nearly three-quarters of jobs held at ages 18–25 ended within one year. This percentage drops with age; 36.4% of jobs held at ages 36–40 ended within one year (U.S. Dept. of Labor, 2006). The temporary nature of some early jobs is reflected in how young people think about their work as well. Mortimer and colleagues (2008) found, for example, that young people do not generally identify their jobs as "career" jobs until at least six or seven years after finishing high school, often longer.

Employment opportunities may be constrained for adolescents and early adults in ways that restrict their ability to find and secure jobs with higher levels of the rewards they evaluate highly. As they get older, young people have more work experience that may enable them to foresee whether particular jobs will offer the rewards they evaluate highly, and also make them more competitive to secure jobs they desire. The education and job training young people invest in after high school should operate in similar ways. So, in the earliest stages of the work career, how well can young people obtain work that reflects their preferences? Examining young people across the *high school* years, one study found that work orientations became predictive of students' jobs only as they got older (Mortimer et al., 1996). In particular, intrinsic orientations predicted job conditions in the 11th and 12th grades. This demonstrates that jobs can reflect orientations as early as high school, though also suggests a strengthening connection with age. That relationship could become increasingly stronger across early adulthood.

While recognizing that judgments about work do change, we expect this latter process to be more influential, and argue that it takes awhile for adolescents' judgments about work to be reflected in job conditions to any great extent. *We hypothesize that adolescents' judgments about work (here measured in the 12th grade) will be increasingly predictive of levels of corresponding job attributes with age during the transition to adulthood (Hypothesis 1)*. In the current study, we overcome a key limitation of the existing body of knowledge by analyzing panel data with identical measures obtained systematically from the same individuals as they make the transition to adulthood.

Historical Change

In addition to much needed consideration of the strength of the relationship between adolescent judgments about work and their jobs held during the transition to adulthood, more attention to how these relationships may be changing over historical time is needed. The primary body of evidence documenting the role of judgments about work in future occupational placement stems from panel analyses of cohorts who attended high school from the early 1960s through the late 1970s. There is some indication that judgments about work are bivariately correlated with very early occupational placement in a more recent cohort (Johnson & Mortimer, 2000). However, no systematic comparison has been made across cohorts to determine whether these links have changed in important ways through historical time and the reasons why. Yet changes in the nature of the life course, particularly in the transition to adulthood, and the shifting institutions of higher education and the economy, offer a strong macrostructural basis for expecting a historically dynamic place of human agency in processes of adult attainment. These changes are reflected in the perceptions and experiences of adolescents as they anticipate their futures.

A Changing Context

Compared to a century ago, becoming an adult today is taking longer and youth are following increasingly diverse and arguably more self-directed paths (Buchmann, 1989; Côté, 2000; Shanahan, 2000). Young people are continuing their educations to older ages, they are living independently from their families of origin prior to marriage, they are delaying the age at which they marry and have children, and there is greater overall heterogeneity in their role configurations (Fussell & Furstenberg, 2005). Many theorists argue that such trends, particularly the growing variability in pathways to adulthood, are part of a larger process of life course “destandardization” and “deinstitutionalization,” in which people have been freed from traditional constraints to construct their own biographies (Giddens, 1991; Shanahan, 2000). Historical change over the past century has given many individuals more control to direct that project. Some argue that since the 1960s, this “individualization” of the life course has accelerated (Kohli, 1986; Buchmann, 1989), as both normative and institutional conditions enable greater variability in the sequence and timing of age-graded roles, and more frequent reversals in trajectories (e.g., returning to school after full-time employment).

Commentators have argued that agentic behavior is increasingly necessary to effectively manage an expanding array of alternatives (e.g., Mortimer & Larson, 2002). Yet for several reasons, adolescents may have become less equipped or prepared to be effective agents--to chart successful educational and early work trajectories. Changes in the occupational structure have limited access to good jobs for those with lower educational qualifications. Moreover, a rapidly changing economy, with increased globalization and frequent shifts in technology and demand, has made the jobs of the future hard to predict, such that even the most well-informed youth may have to adjust to different jobs than anticipated (Csikszentmihalyi & Schneider, 2000; Mortimer & Larson, 2002). Fewer workers now experience systematic mobility through highly structured career tracks. As a result, even though trends toward “individualization” might allow young people more freedom to pursue their preferences, many will not be in a position to do so effectively.

In this economic context, education is thought to facilitate adaptability, and many youth set their sights on higher education (Schneider & Stevenson, 1999). In addition, Rosenbaum (2001) argues that major historical changes in the educational system, including the massive expansion of community colleges with open enrollment policies, contribute to the belief that all adolescents should and can go to college. Yet a singular focus on educational attainment may delay serious vocational thinking and planning, both for those who ultimately complete a bachelor’s degree and those who only aspire to one.

Educational and occupational aspirations have risen dramatically in the last few decades, perhaps unrealistically so, outpacing the availability of professional jobs in the occupational structure, as well as actual college enrollments (Schneider & Stevenson, 1999; Reynolds, Steward, Sischo, & McDonald, 2006). Many youth's educational and occupational aspirations are not connected with knowledge or plans for how to reach their goals (Schneider & Stevenson, 1999). More youth are aspiring to positions without an understanding of how to get to them. Their aspirations are also increasingly detached from past grades, curriculum track, and other institutional markers of educational and occupational promise, and have become less predictive of educational attainment (Reynolds et al., 2006).

These patterns may be due to a relative delay in vocational development compared to earlier cohorts. Such developmental delay may also manifest in adolescents' orientations toward work rewards. Judgments about work may be less thought out, less crystallized, in more recent cohorts. That would make them less predictive of attainments in adulthood.

Taking into consideration these historical changes (both those that make the future harder to predict and those that have delayed or weakened vocational development), we expect the relationship between adolescent judgments about work and later job characteristics to weaken across cohorts. Our analysis focuses on young people who were seniors in high school between 1976 and 1990. *Specifically, we hypothesize that the strength of association between adolescent judgments about work and the levels of desired job attributes during the transition to adulthood will weaken across the high school classes of 1976 to 1990 (Hypothesis 2).* While the "individualization" of the life course argument as a whole pertains to a wider span of history (with possibly more rapid change since the 1960s), our argument about how change in the occupational structure and labor market have affected young people's ability to be effective agents (under individualization) focuses on change in the last several decades of the Twentieth Century. In addition, the delay in vocational thinking and planning we suggest plays a role in weakening the predictive capacity of adolescent judgments about work for later work outcomes also focuses on these latter decades. Thus, while it would be desirable to have at our disposal comparable data going back to young people in the 1950s and 1960s, no such data exists. An examination of cohorts of seniors in high school during the mid 1970s to 1990 (followed up for 11–12 years, up through 2002 for the 1990 cohort) provides an effective test of our ideas. Educational expectations have become less strongly predictive of educational attainment during a similar timeframe, across the classes of 1972 to 1992 (Reynolds et al., 2006).

Taking into Account Economic Downturns and Recoveries

In addition to this more or less linear trend, however, we must also consider the extent to which periods of economic recession and expansion may be related to the realization of preferences. These factors too could be associated with the strength of the judgments about work-level of job attribute relationship. Cohort-specific economic conditions have been shown to predict the timing of leaving school (before finishing a credential) and entering full time work (e.g., Macmillan & Schultz's [2005] analysis of the 1982–83 recession) and the degree to which adolescent planfulness is tied to adult educational and occupational attainment (e.g, Shanahan, Elder, & Meich's [1997] analysis of the Great Depression and post-World War II economy). In periods of more limited employment opportunity, the realization of highly rated job attributes is less likely as many young people are likely to take whatever jobs are available to them. The match between what young people desire and the conditions of their future work will be weaker when job opportunities are more constrained.

Within the historical period we observe, the economic conditions in 1982–1983 were much poorer than at any other time. For example, unemployment among young workers surged during that two year period (Bureau of Labor Statistics, 2008). Although poorer economic conditions were fairly concentrated during these two years, it is difficult to anticipate how

concentrated their impact might be across cohorts. The experience of those who were 12th graders during the recession may differ most as they made their post-high school plans, but it is not hard to imagine that segments of other cohorts experienced similar difficulties in ways that depended on the timing of their job searches (something we do not have information on). As such, we also examine the relationship between adolescent judgments about work and later job characteristics for non-linear cohort patterns, but we take a more exploratory approach to determine which cohorts' experiences differed. Although we expect historical differences concentrated at the earliest ages, recessions may hit all young adults in the same way regardless of year of graduation (i.e. a period effect).

Data and Measures

The data for this research are from the Monitoring the Future (MTF) studies. The base MTF component involves repeated cross-sectional surveys of U.S. high school seniors carried out annually since 1976 (Johnston et al., 2007). The data were collected by the Institute for Social Research at the University of Michigan, using a multistage cluster sampling technique that included 125 to 140 public and private schools each year in order to obtain a nationally representative sample of high school seniors. Multiple questionnaire forms are used to expand the range of topics addressed. Approximately 2,500 to 3,500 seniors responded to the form of the survey containing measures of judgments about work annually. From the original participants in each senior-year survey, a representative subsample of approximately 2,400 was chosen to participate in a panel study, again assigned across multiple questionnaires. Panel participants were followed up biennially. For half of each cohort, the first follow up occurred one year after the base year; it occurred two years after the base year for the other half.

In this study, we use data from the respondents' senior year (Wave 1) and from the 3rd through 6th biennial follow-up surveys after high school (Waves 4 thru 7). [2] Key measures representing the work outcomes were not available for all cohorts in the 1st and 2nd follow up surveys, as they were introduced to all cohorts in 1982. In order to include the full range of senior year cohorts, we examine work outcomes at four waves, beginning with Wave 4 (the earliest follow-up that would include the oldest cohort). Thus, we examine work outcomes at four time points after high school, corresponding roughly to ages 23–24, 25–26, 27–28, and 29–30. Although not by design, these ages are also past the typical ages of full-time schooling for most of the panel. Our analyses include fifteen senior-year cohorts, 1976–1990 (N = 7,098). Later cohorts are still too young to have participated in all six follow-up surveys. The data were weighted to adjust for unequal probabilities of selection resulting from the sampling procedures.

Our measures of work outcomes focus on the intrinsic and extrinsic characteristics of jobs, corresponding to the dimensions of judgments about work described next. We created an *intrinsic work rewards* scale by taking the mean across four subjective evaluations. These include ratings of how interesting their work is as well as their opportunities to learn new skills, use their skills and abilities, and make good use of special skills they had learned (1=not at all, 2=to a little extent, 3=to some extent, 4=to a considerable extent, 5=to a great extent). For the extrinsic dimension, we focus on *hourly earnings*, measured in 17 categories (0=no pay, 1= < $3, 2=$3-$3.49, 3=$3.50–3.99, 4=$4–4.49, 5=$4.50–4.99, 6=$5–5.49, 7=$5.50–5.99, 8=$6–6.49, 9=$6.50–6.99, 10=$7–7.99, 11=$8–8.99, 12=$9–9.99, 13=$10–11.99, 14=$12–14.99, 15=$15–19.99, 16=$20 or more) which we coded to the midpoint dollar amount of each category. For example, someone who reported earning $9–9.99 per hour was coded as earning $9.50 per hour.

[2]Past studies with the MTF panel have sometimes included data from a seventh follow-up, however that follow-up was discontinued after 2001, affecting the 1988–1990 cohorts. Thus our decision also maximizes the cohorts we can include in our assessment of historical change.

Judgments about work were measured in the senior year of high school by the question, “Different people may look for different things in their work. Below is a list of some of these things. Please read each one, then indicate how important this thing is for you (1=not important, 2=a little important, 3=pretty important, 4=very important).” Respondents were asked to rate a series of job features. We focus on two orientation types--intrinsic and extrinsic--because they represent the major dimensions considered in past research and because they map directly onto available measures of job features in MTF panel participants' later work. Mean ratings of six items, "a job which is interesting to do," "a job which uses your skills and abilities--lets you do things you can do best," "a job where you can see the results of what you do," "a job where the skills you learn will not go out of date," "a job where you can learn new things, learn new skills," and "a job where you have the chance to be creative," make up the *intrinsic orientations* scale. Mean ratings of four items, "a job where the chances for advancement and promotion are good," "a job which provides you with a chance to earn a good deal of money," "a job most people look up to and respect," and "a job that has high status and prestige," make up the *extrinsic orientations* scale. These dimensions and their component items were supported by confirmatory factor analyses, which showed no significant variation by cohort, gender, parents' educational attainment, or wave (age) of assessment. Intrinsic and extrinsic orientation scales based on these items were also used by Johnson (2002).

We measured *cohort* continuously and categorically. Categorically we explored a number of groupings that would allow us to trace the effects of the 1982–83 recession.[3] Our final categorization, which best captured historical variation in the relationship between judgments about work and later work outcomes, distinguished those who were in their senior year of high school in 1976–1981 before the recession, those who were in their senior year of high school during the 1982–83 recession (reference category), and those who were in their senior year of high school in 1984–1990.

In addition to cohort, several other demographic characteristics were measured in the senior year of high school, including parents’ educational attainment, educational expectations, high school achievement, high school curriculum track, perceived mental ability, gender, and race. These demographic characteristics are associated with both judgments about work and the job characteristics of interest (Lindsay & Knox 1984; Martin & Tuch 1993; Johnson & Mortimer 2000; Johnson, 2002; Halaby, 2003). *Parents’ educational attainment* refers to the educational attainment of the most educated parent on a six-point scale (1=completed grade school or less, 2=some high school, 3=completed high school, 4=some college, 5=completed college, 6=graduate or professional school after college). Mother’s and father’s income and occupation were not measured in the MTF, though are correlated with educational attainment. *Educational expectations* were indicated by the likelihood with which respondents felt they would graduate from a four-year college (1=definitely won't to 4=definitely will). High school *grades* were measured by grade point average on a nine-point scale from 1=D or below to 9=A. *Curriculum track* distinguished those who self-reported being in a college preparatory curriculum (coded 1) from those in other tracks (coded 0). The MTF surveys did not include test scores or administer an assessment of mental ability. *Self-rated intelligence* was measured by asking respondents to compare their intelligence to others their age on a seven-point scale from 1=far below average to 7=far above average. Sex and race were self-reported. *Female* and *white* were coded 1=yes, 0=no. Limited information on racial identification is available in the data because many of the racial/ethnic categories comprise small percentages of the sample, and the students are clustered in a limited number of schools. Finally, we also control respondents' *educational attainment*, measured in years of education completed at each wave (1=11th grade, 2=12th

[3]Anticipating the cohort variation in the effects of judgments about work may be nonlinear, we tested the quadratic and cubic terms for cohort for interaction effects with judgments about work and found significant differences for intrinsic work rewards. Based on these findings, we moved to categorical representations of cohort to find the specific differences.

grade, 3=one year of college, 4=two years of college, 5=three years of college, 6=four years of college, 7=five or more years of college). Descriptive statistics for all study variables appear in Table 1.[4]

Panel attrition is always of concern in longitudinal studies such as this one. Just over 71% of the panel participated in Wave 4, and this number dropped to 67%, 64%, and 59% for Waves 5, 6, and 7, respectively. The number of respondents this represents, by cohort, is presented in Table 2. As shown in Table 2, panel retention was weaker for later cohorts. Logistic regression models (not shown) also demonstrate that retention was weaker for males and nonwhites, and was stronger for respondents who were in a college preparatory curriculum and had higher grades in high school. These models also indicated that stronger 12th grade extrinsic orientations significantly predicted attrition from the sample. Missing data was overwhelmingly due to this attrition and was therefore concentrated on the dependent variable. Our analysis strategy maximizes the inclusion of respondents in the models by not requiring complete data in all follow-ups; participation in any of waves 4 through 7 enables the inclusion of respondents' data.

To test our hypotheses, we estimate growth curve models separately for intrinsic job rewards and hourly earnings, each across waves 4–7. This involves transforming the data such that occasions become nested within persons and then modeling the effects of judgments about work on work outcomes over time (wave). Because our analysis also examines cohort, we use the term "wave" to represent this time dimension (capturing the panel at different ages) to distinguish it from "cohort." The predominant relationship between judgments about work and later work outcomes is that higher evaluations of extrinsic or intrinsic job attributes are predictive of holding jobs with higher levels of the corresponding attributes (extrinsic or intrinsic, respectively). Because jobs represent packages of various attributes, however, obtaining jobs highly rewarding on one dimension can have implications for the level of rewards along other dimensions as well (Dwyer, 2004; Johnson, 2001; Tolbert & Moen, 1998; Mortimer & Lorence, 1979). And so it has become standard to include both extrinsic and intrinsic orientations as predictors of the level of job characteristics regardless of whether the characteristic in question is extrinsic or intrinsic, and we too follow this practice.

Because our preliminary investigation indicated that the changing relationship between 12th grade judgments about work and later outcomes across the four waves may not be linear, we model wave as a set of dummy variables. Thus, our model estimates include the main effect of judgments about work (and the control variables) on the work outcome as well as the added effect specific to wave 5, 6, and 7 respectively. In order to simplify the models, and because most of the potential additional effects of the control variables at waves 5 through 7 were not statistically significant, we dropped these latter terms when non-significant. For example, if the interaction terms white*w5, white*w6, and white*w7 were not statistically significant, we dropped all three, and followed the same procedure for all of the control variables. None of these terms had substantive impacts on the main findings. We include the wave-specific effects of judgments about work and those of judgments about work*cohort regardless of significance levels, however, because they are the focus of our investigation and provide a test of the two hypotheses. Finally, because our dependent variables characterize current jobs, only employed respondents in a given wave provide a data point for that wave.

[4]Earnings were measured categorically and not adjusted for inflation. Descriptive statistics should therefore be interpreted with caution. Inflation is not a serious concern in later analysis, as all multivariate models controlled for cohort. Where cohort was measured trichotomously, additional models confirmed more detailed controls for cohort did not change the substantive interpretations.

Results

Age

For each outcome, Model 1 provides a test of Hypothesis 1, that the strength of association between 12th grade judgments about work and later job characteristics increases with age across the twenties (see Table 3 for intrinsic job rewards and Table 4 for hourly earnings). For the level of intrinsic rewards at work, the main effects of the 12th grade judgments about work measures indicate that stronger intrinsic and extrinsic orientations predict holding jobs that are more intrinsically rewarding. The interaction terms between these orientations and follow-up wave (age) indicate that the strength of relationship between *extrinsic* orientations and intrinsic job rewards does not change across the ages we study. *Intrinsic* orientations are more closely associated with intrinsic job rewards at wave 7 than at earlier ages, however. The comparison to waves 4 and 5 are marginally significant ($p<.10$) by traditional standards, but the comparison to wave 6 is statistically significant, even at traditional standards (not shown in Table, as the contrast to wave 4 is the reference). This pattern provides partial support for Hypothesis 1.

The remaining coefficients indicate the relationship between the control variables and intrinsic job rewards. Higher grades in high school predicted holding more intrinsically rewarding jobs, though this relationship weakened as the respondents aged (indicated by the negative significant effects of grades at waves 6 and 7). In contrast, self-rated intelligence was associated with holding less intrinsically rewarding jobs, though this relationship too weakened with age (indicated by the positive significant effects of self-rated intelligence at waves 6 and 7). Educational attainment emerged as a significant predictor of intrinsic job rewards with age. Whereas the main effect of educational attainment is not statistically significant, the interaction effects with waves 5, 6, and 7 increased in magnitude across waves and were all statistically significant. Young women and non-whites rated their jobs as less intrinsically rewarding than did men and whites respectively.

For hourly earnings, stronger extrinsic orientations in the 12th grade predicted higher earnings across the twenties. The strength of association increased with age. While the slightly stronger relationship with extrinsic orientations with wave 5 hourly earnings is not significantly different from that with wave 4 hourly earnings, the relationship at waves 6 and 7 are substantially stronger. The pattern with respect to extrinsic orientations and later earnings is consistent with Hypothesis 1. Stronger intrinsic orientations are associated with lower hourly earnings, but the relationship is only marginally significant. The strength of that relationship does not vary by the age when the job is held.

With respect to the control variables, more recent cohorts reported higher hourly earnings. Because earnings were not adjusted for inflation, this pattern should be interpreted cautiously. Consistent with past studies of earnings, respondents from families with more educated parents earn more than other respondents. Respondents who held stronger expectations for completing a bachelor's degree, earned better grades, and participated in a college preparatory curriculum in high school also held better paying jobs. The relationship between high school curriculum track and hourly earnings varied by age, but did not systematically strengthen or weaken. Self-rated intelligence became a stronger predictor of pay with age, however, as did the respondents' educational attainment. Also consistent with past research on earnings, white respondents earned more than nonwhites. Females earned less than males, and this gap widened with age (as evidenced by the significant female*wave coefficients).[5]

[5]Restricting the sample to those who work in all periods is the strictest test of these age differences in the association between judgments about work and later job characteristics, but introduces more selection bias (those who work and respond to the survey at each point likely differ from others) and reduces power substantially. We arrive at the same conclusions regarding the stronger association between judgments about work and job characteristics at older ages restricting the sample in this way, however.

Historical Change

The remaining models examine historical change in the relationship between adolescent judgments about work and the later work outcomes by examining differences across the 15 cohorts in the data. Model 2 examines linear trends in these relationships by including interaction terms between cohort and intrinsic and extrinsic values. Because Hypothesis 1 predicted change in the relationship between judgments about work and the levels of job attributes with age, we continue to examine cohort differences at each wave (age). The results from Model 2 indicate there were no linear changes across cohort in the relationship between judgments about work and intrinsic job rewards. The relationship between extrinsic orientations and hourly earnings actually strengthened slightly across cohorts, rather than weakening as predicted.

We examined non-linear differences across cohorts by incorporating the squared and cubed cohort terms, and by collapsing cohorts into groups. Our approach was semi-exploratory. We anticipated that the 1982–1983 recession might have affected the 1982, 1983, and nearby cohorts, but did not impose the boundaries of those effects in advance. Our investigation revealed a curvilinear pattern in the effects for intrinsic work rewards, with differences concentrated on the two cohorts in which 12th grade occurred during the recession. Thus, in Model 3 in Tables 3 and 4, we present models in which cohort was measured in three groups (1976–1981, 1982–1983, and 1984–1990). Interactions between the categorical measure of cohort and intrinsic and extrinsic orientations were included.

Only one cohort difference achieved statistical significance. For models of intrinsic job rewards, the estimates in Model 3 indicate that extrinsic orientations were not associated with obtaining more intrinsically rewarding employment for respondents who were high school seniors during the two years of the recession. Though the pattern was curvilinear, the contrast only achieved statistical significance comparing the pre-recession cohorts to the 1982–83 cohorts. The interaction terms with follow-up wave (age) indicate that this relationship did not change in statistically significant ways with age. No cohort differences in the relationship between judgments about work and hourly earnings were observed. The findings do not support Hypothesis 2 and more generally indicate only limited historical change in the links between adolescents' judgments about work and their later work outcomes.[6]

Discussion

Movement into careers and location in history represent complex temporal dimensions that shape social processes including the relationship between work orientations and attainment. The life course paradigm has brought increasing attention to these dimensions, through its study of the meeting of biography and history (Elder, Johnson & Crosnoe, 2003). In this research, we extend our understanding of the relationship between judgments about work and the features of work by considering both how the strength of their relationship changes with age and how it may have changed for young people entering adulthood since the mid-1970s.

[6]At the suggestion of a reviewer, we examined conditional effects of judgments about work and cohort*judgments about work by educational attainment. Interaction terms between educational attainment and judgments about work were not statistically significant, nor were terms between cohort (continuously measured), judgments about work, and educational attainment. We were not able to examine conditional effects by educational attainment for the non-linear historical changes in the relationship between judgments about work and outcomes (i.e. Model 3) because the 1982–1983 cohorts contain too few cases. Models estimated separately for those who completed college compared to those who did not revealed some differences in the effects of the control variables (e.g., whites had an earning advantage among those who did not earn a BA, but did not among college graduates), but again did not show differences in the continuously measured cohort*judgments about work. As before we were unable to estimate Model 3 separately by degree attainment because there were too few cases to split for the 1982–83 cohorts that were of interest.

The current study offers some support for Hypothesis 1, which states that judgments about work become stronger predictors of corresponding work outcomes as respondents make the transition to adulthood. Intrinsic orientations in 12th grade were more closely associated with intrinsic job characteristics at wave 7 (i.e., at age 29–30), the oldest age we examined, than at earlier ages. The strength of the relationship did not monotonically increase with age of assessment, however. More consistent with Hypothesis 1, the strength of association between extrinsic orientations in the 12th grade and later hourly earnings increased with age across the twenties. Thus, despite the greater passage of time that comes with age, respondents' jobs as they approached 30 better reflected their 12th grade work orientations than they did their jobs earlier in their twenties.

Contrary to our expectations, the relationship between judgments about work and later work outcomes—both intrinsic job rewards and hourly earnings—did not systematically weaken across the cohorts we studied. Thus, Hypothesis 2 was not supported. Despite economic and other institutional changes that have been argued to delay vocational development and make it more difficult for young people to chart meaningful paths to rewarding work, we found no trend toward a weakening association between adolescents' orientations and the features of their later jobs. Indeed with respect to the relationship between extrinsic orientations and hourly earnings, we found a slight strengthening.

Conclusion

The findings of this study affirm key understandings about judgments about work and their role in work outcomes, but also extend them in important ways. Specifically, our study affirms that adolescents' judgments about work anticipate the features of their later jobs. Consistent with both Mortimer and Lorence's (1979) study and Lindsay and Knox's (1984) study, intrinsic orientations at one point in time significantly predict the level of intrinsic rewards experienced at work at a later point, and extrinsic orientations predict later wages, a key extrinsic reward. Also consistent with Mortimer and Lorence's (1979) findings, extrinsic orientations predict the level of intrinsic job rewards later as well. Young people do indeed chart paths that lead to jobs that are rewarding in the ways they seek. That this relationship has not systematically weakened across recent cohorts also indicates the capacity for young people to obtain jobs that are consistent with their preferences even in a rapidly changing economy. Young people are, or have been forced to become, adaptable as they view a volatile occupational structure for jobs with features they desire.

The progressive strengthening we observe between extrinsic work orientations and wages with age contradicts, however, previous research that found that more distal orientations become less predictive of outcomes over time (e.g., Rindfuss et al., 1999). With respect to wages, our study demonstrates that young people's jobs better reflect their earlier orientations as their work lives progress. This may mean that those with stronger extrinsic orientations are better able to obtain jobs meeting their preferences after some time in the labor market—working their way up, so to speak. Heterogeneity in the wage trajectories of workers during the early career may also explain the weaker relationship at early ages. With respect to intrinsic job rewards, we also find that adolescent intrinsic orientations are most strongly associated with obtaining these rewards at the last wave we examine (age 29–30), but the pattern does not show progressive strengthening in the same way as it does for hourly earnings. Both findings highlight the career-building that happens during the twenties. Moreover, they compliment the findings of studies focused on job turnover and duration (Topel & Ward, 1992; U.S. Dept. of Labor, 2006) and whether jobs are considered "career" jobs (Mortimer et al., 2008) to provide a more complete picture of how young people's work changes during this period of the life course. Jobs become more reflective of adolescent orientations at later ages during this life period.

While we have not given as much attention to interpreting the effects of the control variables on the two work outcomes we study, as there are detailed discussions of similar effects elsewhere in the work literature (e.g., Alexander, Eckland & Griffin, 1975; Morris & Western 1999; Smith 2002), it is worth noting the pattern of effects for educational attainment. It comes as no surprise, of course, that educational attainment predicts holding jobs that are more intrinsically and extrinsically rewarding. Our analysis also shows, though, that educational attainment becomes more closely associated with the work outcomes across the twenties. Indeed the effect of educational attainment on the level of intrinsic rewards and hourly earnings in wave 4 (age 23–24) is not itself statistically significant. Education likely becomes more closely associated with the levels of these work rewards over time because our panel is still achieving degrees across this period, but also likely for the same reasons judgments about work become more closely associated with corresponding work rewards with age during this period of the life course. The wages and other rewards of work of the less educated can be higher at first, as those in school hold “stop gap” or “stepping stone” jobs until they finish school. Jobs held immediately after finishing school may also not be as rewarding, but such youth move more quickly into more rewarding positions.

Our focus on the twenties leaves open the question of how adolescent judgments about work are reflected in work outcomes across the rest of the career. It is likely that at some age too much time has passed for adolescent orientations to have much predictive power, with workers’ orientations continually adapting to rewards obtained on the job (e.g., Mortimer & Lorence, 1979; Johnson, 2001) and changing needs associated with family formation or other life changes (e.g., Johnson, 2005). This calls for further research examining the relationship between judgments about work and job outcomes over the life course, both with respect to the continued relevance of adolescent orientations further into the career and how ongoing changes in orientations are reflected in career outcomes. Also, future research is encouraged to investigate whether certain age-graded aspects of the transition to adulthood (e.g., adult role transitions or accumulated work experience) help explain the changing relationship between work orientations and outcomes that we see here captured through age. With more detailed employment histories, one could look directly at time in the labor market, job changes, and similar more specific processes underlying the age pattern we observe.

Our finding that historical change played only a limited role in the relationship between adolescent judgments about work and later job characteristics are in sharp contrast to recent findings indicating that educational expectations in adolescence have become more weakly connected to educational attainment across cohorts of high school seniors between the 1970s and 1990s (Reynolds et al., 2006). Though judgments about work indicate what features of jobs young people want, they are clearly distinct in some ways from educational expectations, and perhaps also occupational aspirations that index attainment vertically. Concerns about young people's rising ambitions with respect to education and the attainment of professional occupations may be justified, but in at least one aspect, young people appear as able to find jobs that match their relative preferences as they were several decades ago. This is evident, despite changes in the economy and in approaches to vocational preparation. Judgments about work are very broad orientations, of course, and this may help account for the divergence in historical patterns. Wanting a high paying job is more general, for example, and there are many jobs that meet that criterion, compared to the specificity of occupational aspirations (e.g., lawyer) and educational degrees (e.g., a BA/BS).

We did observe an unexpected but interesting cohort difference, in that the extrinsic orientations of respondents who were seniors in high school during the 1981–82 economic recession did not predict higher intrinsic rewards as it did in other cohorts. Whereas working toward high paying jobs often also yields higher intrinsic rewards as well (see also Mortimer & Lorence, 1979), perhaps extrinsically oriented youth from those cohorts who made their

plans during the recession focused more narrowly on their future pay or job security and were less able to benefit from a pairing of extrinsic rewards with higher intrinsic rewards. Whereas the historical differences we observed were quite limited, the findings are consistent with the argument that the role of human agency is dynamic; the structure of opportunity intersects with individuals' plans and orientations in shaping attainment (Shanahan, Elder & Miech, 1997). It would be desirable for future research to replicate the present study by examining the implications of the recent economic downturn on the relationship between adolescent judgments about work and job characteristics when relevant data are available.

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Table 1

Descriptive Statistics for Study Measures

	Range	Percent	Mean (s.d.)
Work Outcomes, Waves 4–7:			
Intrinsic Work Rewards Wave 4	1 – 5		3.11 (.97)
Intrinsic Work Rewards Wave 5	1 – 5		3.27 (.94)
Intrinsic Work Rewards Wave 6	1 – 5		3.36 (.91)
Intrinsic Work Rewards Wave 7	1 – 5		3.43 (.87)
Hourly Earnings Wave 4	0 – 22.5		7.98 (3.49)
Hourly Earnings Wave 5	0 – 22.5		10.01 (4.31)
Hourly Earnings Wave 6	0 – 22.5		11.83 (4.91)
Hourly Earnings Wave 7	0 – 22.5		13.59 (5.28)
Independent Variables, Wave 1:			
Intrinsic Orientations	1 – 4		3.41 (.38)
Extrinsic Orientations	1 – 4		3.24 (.52)
Cohort (Senior Year of High School)			
1976		4.99%	
1977		6.14%	
1978		6.59%	
1979		6.66%	
1980		6.57%	
1981		6.26%	
1982		6.53%	
1983		6.71%	
1984		7.21%	
1985		7.03%	
1986		7.32%	
1987		7.47%	
1988		7.48%	
1989		6.48%	
1990		6.55%	
Control Variables, Wave 1:			
Parents' Educational Attainment	1 – 6		3.98 (1.15)
Educational Expectations	1 – 4		2.77 (1.04)
Grades	1 – 9		5.85 (1.69)
College Prep. Curriculum Track	0 – 1	50.18%	
Self-Rated Intelligence	1 – 7		4.97 (.97)
Female	0 – 1	52.55%	
White	0 – 1	80.77%	
Control Variables, Waves 4–7:			
Educational Attainment Wave 4	1 – 7		4.26 (1.84)
Educational Attainment Wave 5	1 – 7		4.44 (1.92)
Educational Attainment Wave 6	1 – 7		4.54 (1.94)

	Range	Percent	Mean (s.d.)
Educational Attainment Wave 7	1 – 7		4.67 (1.94)

Note: Sample for Wave 1 (senior year) statistics limited to those with valid data on all senior year measures (n=6,209). Sample size for measures in waves 4 through 7 varies by participation in that wave as well as employment status and item non-response.

Table 2

Unweighted Sample Size by Study Wave and Cohort

Cohort	Wave 1 (12th Grade)	Wave 4	Wave 5	Wave 6	Wave 7
1976	448	341	328	327	314
1977	480	373	358	350	326
1978	474	380	360	351	331
1979	482	348	357	340	319
1980	490	370	351	330	306
1981	499	386	361	337	325
1982	476	337	308	297	274
1983	475	335	316	281	271
1984	492	359	346	325	290
1985	495	327	287	279	255
1986	488	318	283	268	243
1987	490	304	269	253	233
1988	495	327	296	290	264
1989	407	251	225	221	212
1990	408	243	217	200	185

Table 3

Estimates of the Relationship between Judgments about Work and Intrinsic Work Rewards.

	Model 1		Model 2		Model 3	
	Estimate	**Std. Error**	**Estimate**	**Std. Error**	**Estimate**	**Std. Error**
Intrinsic Orientations	.18***	.04	.13†	.08	.27*	.11
Extrinsic Orientations	.06*	.03	.10†	.06	−.08	.08
w5[1]	−.15	.18	−.39	.32	−.37	.44
w6[1]	−.02	.19	.10	.34	−.15	.47
w7[1]	−.33†	.19	−.42	.34	−.77†	.47
Intrinsic Orientations*w5	.01	.04	.06	.09	.03	.12
Intrinsic Orientations*w6	−.04	.04	−.06	.09	.01	.13
Intrinsic Orientations*w7	.08†	.05	.16†	.09	.17	.13
Extrinsic Orientations*w5	.01	.03	.03	.06	.04	.09
Extrinsic Orientations*w6	.01	.03	−.01	.06	−.05	.09
Extrinsic Orientations*w7	−.04	.03	−.09	.06	−.02	.09
Cohort	−.01	.01	−.01	.04		
Cohort*w5			.03	.04		
Cohort*w6			−.02	.04		
Cohort*w7			.01	.04		
Intrinsic*Cohort			.01	.01		
Extrinsic*Cohort			−.01	.01		
Intrinsic*w5			−.01	.01		
Intrinsic*w6			.01	.01		
Intrinsic*w7			−.01	.01		
Extrinsic*w5			−.01	.01		
Extrinsic*w6			.01	.01		
Extrinsic*w7			.01	.01		
1976–81 cohorts[2]					−.34	.45
1984–90 cohorts[2]					−.19	.45
1976–81 cohorts*w5					.19	.50

	Model 1		Model 2		Model 3	
	Estimate	**Std. Error**	**Estimate**	**Std. Error**	**Estimate**	**Std. Error**
1976–81 cohorts*w6					.29	.53
1976–81 cohorts*w7					.57	.53
1984–90 cohorts*w5					.29	.49
1984–90 cohorts*w6					−.04	.52
1984–90 cohorts*w7					.44	.53
Intrinsic*1976–81 cohorts					−.12	.13
Intrinsic*1984–90 cohorts					−.09	.12
Extrinsic*1976–81 cohorts					.21*	.09
Extrinsic*1984–90 cohorts					.12	.09
Intrinsic*w5					−.01	.14
Intrinsic*w6					−.10	.15
Intrinsic*w7					−.07	.15
Intrinsic*w5					−.05	.14
Intrinsic*w6					−.03	.14
Intrinsic*w7					−.14	.15
Extrinsic*w5					−.03	.10
Extrinsic*w6					.06	.11
Extrinsic*w7					−.07	.11
Extrinsic*w5					−.04	.10
Extrinsic*w6					.07	.11
Extrinsic*w7					.04	.11
Parents' Educ. Attainment	.01	.01	.01	.01	.01	.01
Educational Expectations	−.02†	.01	−.02	.01	−.02†	.01
Grades	.07***	.01	.07***	.01	.07***	.01
Grades*w5	−.01	.01	−.01	.01	−.01	.01
Grades*w6	−.03*	.01	−.03*	.01	−.03*	.01
Grades*w7	−.04**	.01	−.04**	.01	−.04**	.01
College Prep. Curric. Track	.03	.03	.03	.03	.03	.03
Self-Rated Intelligence	−.05**	.01	−.05**	.02	−.06**	.02

	Model 1		Model 2		Model 3	
	Estimate	**Std. Error**	**Estimate**	**Std. Error**	**Estimate**	**Std. Error**
Self-Rated Intelligence*w5	.02	.02	.02	.02	.02	.02
Self-Rated Intelligence*w6	.04†	.02	.04†	.02	.04*	.02
Self-Rated Intelligence*w7	.05*	.02	.05*	.02	.05*	.02
Female	−.05*	.02	−.05*	.02	−.05*	.02
White	.10*	.03	.10**	.03	.10**	.03
Educational Attainment	.01	.01	.01	.01	.01	.01
Educational Attainment*w5	.05***	.01	.05***	.01	.05***	.01
Educational Attainment*w6	.08***	.01	.09***	.01	.09***	.01
Educational Attainment*w7	.09***	.01	.09***	.01	.09***	.01
Intercept	2.12***	.17	2.12***	.30	2.33***	.40

Note:

[1] Wave 4 is the reference category.

[2] The 1982–83 cohort group is the reference category.

† < .10.

* $p < .05$.

** $p < .01$.

*** $p < .001$

Table 4

Estimates of Relationship between Judgments about Work and Hourly Earnings.

	Model 1		Model 2		Model 3	
	Estimate	**Std. Error**	**Estimate**	**Std. Error**	**Estimate**	**Std. Error**
Intrinsic Orientations	−.27†	.15	.07	.29	−.28	.39
Extrinsic Orientations	.37***	.10	.04	.20	.29	.30
w5[1]	−.35	.66	−.62	1.16	.76	1.57
w6[1]	.28	.76	.25	1.33	.64	1.87
w7[1]	−.12	.88	−1.34	1.50	−2.93	2.12
Intrinsic Orientations*w5	−.03	.16	.01	.31	−.71†	.43
Intrinsic Orientations*w6	−.27	.19	−.35	.35	−.45	.51
Intrinsic Orientations*w7	−.26	.21	−.18	.40	.04	.59
Extrinsic Orientations*w5	.09	.11	.14	.21	.58†	.32
Extrinsic Orientations*w6	.33*	.13	.43†	.25	.50	.38
Extrinsic Orientations*w7	.44**	.16	.75**	.28	1.01*	.43
Cohort	.19***	.02	.20	.12		
Cohort*w5	.04*	.02	.08	.14		
Cohort*w6	.07***	.02	.07	.16		
Cohort*w7	.08**	.02	.26	.18		
Intrinsic*Cohort			−.05	.03		
Extrinsic*Cohort			.05*	.02		
Intrinsic*Cohort*w5			−.01	.04		
Intrinsic*Cohort*w6			.01	.04		
Intrinsic*Cohort*w7			−.01	.05		
Extrinsic*Cohort*w5			−.01	.03		
Extrinsic*Cohort*w6			−.01	.03		
Extrinsic*Cohort*w7			−.05	.03		
1976–81 cohorts[2]					−2.16	1.63
1984–90 cohorts[2]					.50	1.59

	Model 1		Model 2		Model 3	
	Estimate	**Std. Error**	**Estimate**	**Std. Error**	**Estimate**	**Std. Error**
1976–81 cohorts*w5					−1.07	1.79
1976–81 cohorts*w6					.18	2.11
1976–81 cohorts*w7					3.10	2.39
1984–90 cohorts*w5					−1.02	1.76
1984–90 cohorts*w6					−.15	2.09
1984–90 cohorts*w7					4.34†	2.37
Intrinsic*1976–81 cohorts					.33	.45
Intrinsic*1984–90 cohorts					−.24	.44
Extrinsic*1976–81 cohorts					−.04	.33
Extrinsic*1984–90 cohorts					.25	.32
Intrinsic*1976–81 cohorts*w5					.70	.49
Intrinsic*1976–81 cohorts*w6					.08	.58
Intrinsic*1976–81 cohorts*w7					−.44	.67
Intrinsic*1984–90 cohorts*w5					.83†	.45
Intrinsic*1984–90 cohorts*w6					.26	.58
Intrinsic*1984–90 cohorts*w7					−.33	.66
Extrinsic*1976–81 cohorts*w5					−.49	.36
Extrinsic*1976–81 cohorts*w6					−.16	.43
Extrinsic*1976–81 cohorts*w7					−.43	.49
Extrinsic*1984–90 cohorts*w5					−.58	.36
Extrinsic*1984–90 cohorts*w6					−.16	.42
Extrinsic*1984–90 cohorts*w7					−.81†	.49
Parents' Educ. Attainment	.11*	.05	.11*	.05	.12*	.04
Educational Expectations	.13*	.06	.13*	.06	.16*	.06
Grades	.15***	.03	.15***	.03	.15***	.03
College Prep. Curric. Track	.55***	.15	.54***	.15	.54***	.15
College Prep. Curric. Track *w5	.23	.16	.23	.16	.24	.16
College Prep. Curric. Track *w6	.71***	.19	.72***	.19	.73***	.19
College Prep. Curric. Track *w7	.55**	.21	.57**	.21	.57**	.21

	Model 1		Model 2		Model 3	
	Estimate	**Std. Error**	**Estimate**	**Std. Error**	**Estimate**	**Std. Error**
Self-Rated Intelligence	.09	.07	.10	.07	.08	.07
Self-Rated Intelligence*w5	.13†	.07	.13†	.07	.14*	.07
Self-Rated Intelligence*w6	.14†	.08	.14†	.08	.14†	.08
Self-Rated Intelligence*w7	.28**	.09	.27**	.09	.28**	.09
Female	−1.26***	.13	−1.27***	.13	−1.27***	.13
Female*w5	−.40**	.13	−.40**	.13	−.39**	.13
Female*w6	−.89***	.16	−.88***	.16	−.88***	.16
Female*w7	−.97***	.18	−.97***	.18	−.96***	.18
White	.35*	.16	.34*	.16	.35*	.16
Educational Attainment	−.04	.04	−.04	.04	−.04	.04
Educational Attainment*w5	.29***	.04	.30***	.04	.30***	.04
Educational Attainment*w6	.52***	.05	.52***	.05	.53***	.05
Educational Attainment*w7	.77***	.06	.77***	.06	.78***	.06
Intercept	4.32***	.63	4.23***	1.09	6.20***	1.44

Note:

[1] Wave 4 is the reference category.

[2] The 1982–83 cohort group is the reference category.

† < .10.

* $p < .05$.

** $p < .01$.

*** $p < .001$