CHAPTER 3

Stratified Incentives and Life Course Behaviors

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INTRODUCTION

Psychologists have observed that American adolescents often have difficulty committing themselves to efforts either in school or in other activities (Erikson, 1963; Keniston, 1970). While Erikson and Keniston recognize that this lack of commitment arises due to psychological, interpersonal, cultural, economic, and social factors, psychologists usually focus on intrapsychic processes. For instance, a textbook identifies "identity disorder" as one source of low achievement in late adolescence, recommends psychotherapeutic techniques to address the internal disorder, and does not even consider the possible influence of external social context on these behaviors (Mandel & Marcus, 1988, p. 299). Another psychologist says that adolescents lack "career maturity," which makes them unwilling to work hard in school for the sake of their future careers (Crites, 1976). Psychologists are not the only ones to make such inferences. In the 1980s, labor economists sometimes explained youths' job turnover by saying that some youth are unstable and immature (Osterman, 1980). Practitioners often make such inferences. In interviews in the 1990s, we have heard high school teachers and counselors say that adolescents are "present oriented," cannot defer gratification, and will not work hard in school for future benefits. One guidance counselor reported, "these kids cannot plan beyond next Saturday night's date." In many of these accounts, the problem is inside students, and it comes from the adolescent life stage. These interpretations rarely mention social context.

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Lifespan theorists are divided about the influence of social context in the life course. Dannefer (1992) identified four ways that social context has been conceptualized in life course research.

1. *Functionally unimportant*. Some theorists have proposed models in which social context is largely irrelevant. For example, although Levinson et al. (1978) pay lip service to the important influence of social context, they describe stages and sequences of adult development that are universal across cultures and historical periods. They even assert that age timetables exist which do not vary across different contexts. As a result, context is in effect irrelevant and adult development stages are "not subject to environmental shaping except at the pathological extremes" (Dannefer, 1992, p. 86).

2. *Powerful, but random*. Other theorists suggest that social context has large influences, but its effects are random. For instance, Baltes contends that the life course is affected by non-normative influences, "determinants that, although significant in their effect on individual life histories, are not general. They do not occur for everyone nor do they necessarily occur in easily discernible and invariant sequences or patterns" (Baltes, 1983, p. 95). In this formulation, "non-normative influences include migration, career changes, unemployment, divorce, and 'unexpected' changes in health" (Dannefer, 1992, p. 87). When psychologists view individuals in a therapeutic session or in a university laboratory, the influence of context may seem random. Although psychologists may view these events as unexplained by their models, Dannefer (1992, p. 87) suggests that they are not "inexplicable in their origins when viewed from other perspectives, such as sociology or epidemiology."

3. *Organized, but static*. Bronfenbrenner (1979) provides extensive discussion of contextual influences on development at the micro-, meso-, macro-, and exo-systems levels. He stresses the importance of looking at settings and environments, which may be damaging to the child under certain conditions. He emphasizes the interaction of levels, the ways that interpersonal supports affect individuals' coping with new organizations. Bronfenbrenner (1979) and Magnusson and Allen (1983) have provided descriptive topologies of various aspects of social context, but they tend to miss the dynamic aspects, and they do not explain the process of change of direction or trend. Generalities can be inferred based on observations, but they have an ad hoc character, without suggesting an underlying mechanism. Prediction is possible based on prior observations of existing trends, but the behavioral consequences of policies that represent radical changes are not included in these analyses.

4. *Systematically organized and dynamic*. In this view, context is viewed as "not only a powerful organizer of individual developmental patterns, but also as consisting of processes that are themselves organized: self-generating and self-perpetuating in systematic ways" (Dannefer, 1992, p. 91). Some prior work has incorporated this perspective. "Within the systems conception, context shifts from the status of a static independent variable to a structured, interactive set of relations. Human development, then, is not just influenced by environment but is caught in these extended networks of relations, which systematically provide messages about what developmental outcomes are to be valued, and which supply specific, and sometimes limited, resources for development to individuals" (Dannefer, 1992, p. 91).

This fourth level poses a difficult challenge. While empirical analyses can describe the correspondence between social policy and observable behaviors, it is difficult to discern underlying social processes and mechanisms which create the correspondence. Moreover, under most circumstances, the researcher is observing social processes that are not changing or are changing very slowly, so the cause of behavioral change is difficult to attribute to specific social actions.

Indeed, at a more basic level, it is even difficult to comprehend the distinctive qualities of social policies and individual behaviors in a single context. The impact of social policies is best seen in comparative perspective. "International comparisons challenge our assumptions about what is universal, natural, and inevitable. Looking at another country's customs and institutions puts our own in a new light, extending our vision of what is possible and desirable" (Hamilton, 1986).

Although the study of American adolescents comes in the context of American society, a different society might show different patterns. In addition, there is a great deal of stratification within societies, and adolescents at different strata may face different circumstances and respond differently. Moreover, if society radically changed over a relatively short time span, then adolescent behaviors within that society might also change in ways observable to research.

DO ADOLESCENT EFFORTS CHANGE WHEN SOCIAL CONTEXT CHANGES THEIR INCENTIVES?

This chapter seeks to understand the determinants of adolescents' school efforts by examining the recent reforms of the social context in Japan. During the period under study, Japanese society underwent dramatic reforms in a relatively short period of time, radically changing students' incentives for school effort. This study focuses on the ways these reforms affected students' incentives, the ways that students' school efforts changed over this time period, and the differential pattern of changes for different groups of students.

In addition, like Dannefer's fourth model, we argue that these adolescent behaviors could arise from properties of social context. We find that the above-noted problem of adolescent underachievement is largely absent in pre-reform Japan, but it appears after a change of social context created by drastic reforms.

We present a new model. The stratified-incentive model contends that societal institutions create patterns of incentives that affect adolescents' behaviors, and different positions in a school social hierarchy offer different incentives to the individuals in these different positions. Many commonly observed properties of the adolescent life stage could be explained as the result of the incentives offered by societal institutions like colleges and the labor market. Differences in adolescents' behaviors could be explained by the incentive structure of the institutions for which they are being prepared, and may not be due to individual attributes (Rosenbaum, 1991).

Specifically, we contend that youths with different levels of school achievement are directed to different societal goals (colleges or jobs), and the college and job structure of society defines the incentives for high school youth. While adolescents appear to differ in internal motivation, youth who face contexts which offer high incentives will see reasons to exert effort, they will have many experiences of exerting effort, and they may develop more capacity to exert effort. In contrast, youth who face low incentives will exert little effort and have little reason to develop motivational capacity.

Moreover, these various college and job goals can pose high or low incentives, depending on social context, and social policies that change the social context can also change the incentives for these goals. Unlike United States, pre-reform Japan created a context where all students had strong incentives for effort to attain their goals. More recently, Japan's reforms created a situation more like that in the United States, such that those who aspire to selective

colleges faced high incentives, and others faced low incentives. We shall examine whether and how students' efforts changed over the period when these contextual changes were occurring.

This model leads to three hypotheses. First, if a society offers a different pattern of incentives than the United States, adolescents in that society will exhibit quite different behaviors. Second, if different positions of a school social hierarchy offer different incentives, students in those positions will behave differently. Third, if a society changes the incentives for a group of adolescents, then adolescent behaviors will change accordingly.

Japan is a good place to study these hypotheses. First, in the late 1970s, Japan offered a different pattern of incentives than the United States (Rosenbaum & Kariya, 1991). Like youth in the United States, university-bound students in Japan had strong incentives for increasing their school achievement. However, unlike work-bound youth in the United States, who get no benefit in the labor market for improved academic achievement, Japanese work-bound students got clear benefits from improved academic achievement.

However, the Japanese social structure changed very rapidly over the past two decades. In the earlier period, Japan presented strong incentives for all youth, in marked contrast with the American pattern where stong incentives were offered only by selective colleges. In the later period, Japan quickly shifted to the American pattern of stratified incentives.

This feature of the Japanese situation is particularly important for our study of the life course model. In less than two decades, Japan self-consciously initiated extensive choice-based reforms. As we shall show, while Japan initially presented a unified incentive structure (strong incentives to all adolescents), its new institutional arrangements offered stratified incentives, with a radically different level of incentives offered to students depending on their prior high school achievement. Did this radical change from unified to stratified incentives affect adolescent behavior, or did these changes fail to have any systematic impact?

This chapter begins by describing the theoretical importance of effort. Then we describe pre- and post-reform policies and practices, and the way Japan shifted from offering all adolescents similar incentives to only offering high incentives to youth in a position to compete for top universities. We then present empirical analyses which show the effects of these reforms on adolescents' behaviors. Comparing youths' behaviors in 1979 and 1997, we find dramatic declines in the academic efforts of most students, but little decline for top students. The reforms reduce the incentives for effort for most students, but not for students aspiring to top universities (the ones actually affected by "exam hell" who were the initial reason for the reforms).

The reforms create stratified incentives, where the top students still have strong incentives and they still work hard, while others have weak incentives and work much less or not at all. The result was a dramatic change in their behaviors. The reforms thus created another form of inequality: students responded quite differently, depending on the rank of their school and the incentives it offered.

As a result, adolescent achievement and underachievement, which are commonly considered "life stage" phenomena, change in ways that are related to the incentives created by the social context and its reforms. This chapter deals with important questions regarding the interrelations of culture, history, social institutions, and human agency. Cross-cultural and historical data allow us to examine differences in adolescents' strategies of attainment as they encounter different opportunities and incentives, which are variable across time and amenable to intervention. In so doing, we seek to contribute to a large body of research that examines the structure of educational systems and their impact on young people in various nations (Hallinan, 2000; Shavit & Mueller, 1998). This chapter identifies key features of educational systems that influence students' actions.

BACKGROUND

How can society engage large portions of youth in productive activities, and do social policies affect the amount and distribution of youths' efforts? To persist into a new generation, society must engage youths' efforts toward societal goals (Durkheim, 1912), and the disengagement of large portions of youth is a real threat to society and to youths' own prospects, especially for low-achieving or low-SES youths.

This study examines the stratification of individuals' school efforts. While status attainment models incorporate social psychological factors, they often ignore students' efforts (Heyns, 1978; Jencks et al., 1979; Sewell, 1971; however, see Jencks et al., 1979). While aspirations are assumed to increase effort (Sewell & Hauser, 1975; Rosenfeld & Hearn, 1982; Velez, 1985), many youth with high aspirations exert little effort (Rosenbaum, 1998; 2001; Steinberg, 1996; Stevenson & Stigler, 1992). Ethnographic researchers have noted social influences on youths' efforts at pursuing societal goals, particularly for working-class (Willis, 1977) and minority youths (Fordham & Ogbu, 1986). Merton (1957) and Stinchcombe (1965) propose a more institutional approach, suggesting that rebellion occurs if youth, who desire society's goals, believe that society's means will not help them gain those goals.

Is there a society where low-achieving students do not become disengaged from schools? Is there a society where, contrary to Willis's findings, manual workers' children continue to exert effort in school through their high school years? Moreover, if such a society exists, what institutional conditions make that happen? Can we identify conditions which, when altered, lead to observable changes in youths' efforts? How does the distribution of efforts change and which kinds of youth experience the most change? As we shall see, Japan provides a pertinent case.

JAPANESE UNIFIED INCENTIVE MERITOCRACY

Japan has a penchant for taking Western ideas more seriously than the West, and doing them more thoroughly. This is a study of Japan's initial implementation of the meritocratic ideal and subsequent implementation of choice-based ideals. Both ideals are very salient in British and American norms (cf. Halsey, 1977; Jencks & Phillips, 1998; Young, 1958). We rarely get to see our intellectual ideals so thoroughly implemented as Japan did, especially ideals as demanding as meritocracy and choice.

Moreover, because Japan later implemented American-style "choice" reforms to soften its meritocracy, the results of Japan's reforms point to possible causal influences. Similar reforms were implemented in the United States over the course of 80 years, so it is hard to identify their effects, but, in Japan, it took less than ten years to implement these reforms. This study of Japan may give us a better understanding of American practices and their potential effects.

Until 1987, Japan was very meritocratic. A single merit criterion, academic achievement, based on the national curriculum and measured on objective exams, was the only factor used for admitting youth to different ranks of public high schools or colleges. Unlike the American situation where nearly all high school seniors aspired to college (Rosenbaum, 1998; Schneider & Stevenson, 1999), Japanese youth often planned to take jobs after high school. Unlike the American situation where many ambitious young people do not see what actions they can take to improve their future careers (Schneider & Stevenson, 1999), Japanese youth know that school effort is an effective activity regardless of their career goals.

This meritocracy provided conditions for motivating a large portion of youth. Japanese college-bound students had strong incentives for school achievement. University admission was based solely on examinations testing achievement on the school curriculum (not aptitude or any other factor). Moreover, even non-college youth had strong incentives for school achievement. In Japan, high schools have relationships with employers, and they strongly influence job hiring (Rosenbaum & Kariya, 1989, 1991). High schools nominate students for jobs based solely on students' academic achievement, and employers generally hire nominated students. Thus, even for low-achieving students, small increases in achievement lead to better jobs.

In this period, most Japanese students exerted considerable effort in high school, vastly more effort than their counterparts in the United States. Indeed, manual workers' children did much more homework than the average American student. While many observers have attributed these behaviors to Japanese culture (Rohlen, 1983; Okano, 1993), we will show that Japanese institutional arrangements are a potential explanation (Ishida, 1993; LeTendre, 1996). Institutional arrangements provide clear attainable incentives to students at every portion of the achievement distribution to increase their school achievement, both for college-bound and work-bound youth. While the effects of these incentives cannot be proven in the early era, we show how youths' efforts changed when these incentives were weakened by reforms, and, in the process, provide an explanation for recent research findings (Brinton, 1998, 2000).

Japan's system was uncompromisingly dedicated to this one dimension, which made it ruthlessly severe but also unwaveringly fair. Japan has a very stratified school structure. While American high schools stratify students in different tracks in the same school based upon multiple criteria, Japanese high schools are ranked in about four or five different levels in a school district, which are totally determined by students' academic achievement on an achievement test taken in ninth grade.

Similarly, achievement is the only determinant in university admissions. Thus, rich students from expensive private high schools frequently score below the best working-class students from public schools, and poor-achieving rich students do not attend the top Japanese universities, but high-achieving low-income students do. Social background correlates with college admissions and jobs, but the SES influence is mediated by academic achievement, as we shall see later. Even fame does not overide insufficient achievement—a very popular baseball star with fairly high test scores was not admitted when he applied to one of the best private universities.*

Not only did Japan's meritocracy create clear incentives, but it also told students that their efforts determine their success. Success was under their own control. Young (1958) notes the risk that meritocracy can become an inherited IQ aristocracy where children quickly become resigned to their inherited limitations. Japan avoids this pitfall with strong beliefs that people do not differ in ability and that ability is not a major influence on achievement. In Japan, effort is nearly everything—the main determinant of achievement. Thus, better colleges and jobs are equally available to all who strive for them; it is widely believed that effort, not ability, determines who is selected. Students regularly take practice tests, and, if their scores fall short of what is required for their academic plans, teachers, parents, and students believe that insufficient effort is the cause, and students are told they must work harder (Kariya & Rosenbaum, 1987). While American children quickly get the message that they

*The strongest effects of SES came through Japan's private high schools, but our sample studies only public schools.

should give up because they lack the ability to do well enough, Japanese children are told that everyone has the ability, and low achievement only indicates that more effort is required (Stevenson and Stigler, 1992).

Japan's meritocratic system was ideally suited to encourage school effort of a large portion of youth. In 1980, a year after our initial data collection, 43% of American 17-year-olds did no homework on an average school night (NAEP, 1985), but only 22% of our Japanese students did no homework. While 67% of American 17-year-olds devoted less than one hour a night to homework (NAEP, 1985), only 43.1% of our Japanese 17-year-olds did so. Indeed, the average student in our sample spent 97 min a night on homework in 1979. Moreover, Americans would do much worse in weekly comparisons, for while the daily homework time for Americans is multiplied by 5 school days a week, Japan's is multiplied by 6 school days a week.

The result was high achievement. In the 1980s, Japan had among the highest-achieving youth in the world. While American youth trailed near the bottom of developed nations on tests of math and science, Japan was at or near the top in most comparisons for most age groups (Lynn, 1988, ch. 2; Stevenson & Stigler, 1992). This was true for 18-year-olds (where Japan had a higher percent of the cohort enrolled in school than every nation except the United States), and for 13-year-olds (Lynn, 1988, p. 7). Indeed, in national comparisons of all math "majors" (students whose curriculum emphasizes math), non-math majors, top 4% of math "majors," and top 3% of non-math "majors," Japanese 18-year-olds were at or near the top (Husen, 1967 cited in Lynn, 1988, p. 7).

JAPAN'S CHOICE-BASED REFORMS

Although Japan's meritocracy was widely accepted in the four decades after World War II, its disadvantages became increasingly apparent. Newspaper stories and governmental policy papers frequently noted three problems in their meritocratic system—pressures, narrowness, and inequality.

The high pressures were one of the most obvious behavioral costs. Newspapers reported stories of 10-year-old children taking the subway home from after-school schools (juku) after dark and stressed adolescents getting little sleep because they worked long hours every night on homework. Such stories were repeated in government reports and legislative deliberations. The years before students took college entrance exams were called "exam hell," and students' lack of sleep and mental distress were frequently mentioned by policymakers.

Moreover, these pressures were believed to narrow students' experiences, to prevent them from developing social, personal, and other skills, and to reduce their creativity. "Creativity," while never defined, was viewed as suffering from a single-minded pursuit of schoolwork and the one-dimensional focus on academics.

Finally, these one-dimensional pressures were believed to increase inequalities among students. To the democratic sensibilities of post-war Japan, the one-dimensional hierarchy based on test scores was disturbing. Since tests were the sole basis for placing students into different levels of high schools and universities, tests made inequalities more salient and thus were disturbing. In addition, tests were blamed for accentuating inequalities by forcing students to be ranked on achievement in general, rather than considering each on his or her own areas of strength.

"Choice" was believed to be the solution to these problems. Youths' pressures, narrow focus, lack of creativity, and inequalities were diagnosed as having been caused by the lack of choice in

Japan's system. It was believed that Japan's selection system could be repaired by a few minor reforms to increase student choice, without altering its essential meritocratic character.

Reforms were proposed and quickly implemented. To Americans used to seeing school reform done at the local or state level in a slow and cumbersome process, seeing massive school reform implemented in Japan's centralized educational system is a wonder to behold. Three kinds of choice-based reforms were quickly implemented to increase students' latitude of choice about how to spend their time and what skill areas to stress.

1. *Instruction responsive to students' interests*. To give students more choice about their learning, teachers were directed to make instruction more responsive to students' interests. While instruction in 1979 was nearly entirely focused on textbooks and lectures, a 1996 survey of elementary school teachers found strong emphasis on including students' experience (64%), students' presentations (57%), letting students do research (45%), and group activity (44%), and low emphasis on textbooks (14%), and lectures (1%) (Benesse Educational Research Center 1999).

2. *Reduced demands on students*. To give students more choice about their activities and areas of skill, teachers were directed to reduce their demands on students, to slow the pace of instruction, and to give less homework. Moreover, in the highly centralized educational system in Japan, other steps were easily taken. In the mid-1990s, the Ministry of Education decreased the number of school days, deleting two Saturdays every month (attendance had formerly included all Saturdays). The Ministry of Education, which determined the curriculum in every school in the nation, reduced the number of required subjects in the curriculum, so the number of credits for a diploma declined from 85 to 80 after 1981. The national curriculum also reduced the number of topics covered in subjects. Thus, in 1979, virtually all high school students took physics, geology, political economy, and geography, but by 1997, less than 60% of students took these courses (Arai, 2000). Consistent with this, colleges were directed to reduce entrance requirements. Even the top universities in the nation, which formerly required students to pass entrance exams in 7 subjects in 1979, now only required 5 subjects or less. Other colleges had lower requirements, which they reduced further.

3. *Multiple criteria*. To increase students' choices about their areas of skills, colleges were directed to decide admissions on multiple criteria, so that low achievement in one area could be offset by high achievement in another. In addition, besides academic achievement, college should consider school recommendations, which would allow colleges to recognize other kinds of achievement and personal qualities. Teachers' comments about personality, and participation and leadership in activities became criteria. College essays could also offset somewhat deficient academic achievement. Students could choose whether to emphasize hobbies, artistic endeavors, or personal charm to counterbalance mediocre grades, and, in many colleges, they could avoid math exams if they found that a difficult area.

4. *Making college an option for more students*. Besides reducing requirements, colleges also were urged to provide programs for new kinds of students who previously would have been excluded. New programs were initiated to allow the admission of students from vocational and other low-ranking high schools. The new variety of programs was accompanied by increased number of slots. The Ministry of Education, which controls the number of admissions slots in every university in the nation (including most private universities which receive national funds), drastically increased the number of slots, from 377,468 in 1975, to 607,575 in 1990, to 711,345 in 1997. In the decade since 1990, when the number of young people was declining in Japan, when there was a 15% decline in the number of high school graduates (from 1,767,000 to 1,504,000), an increased portion of all Japanese young people

could attend college. Thus, acceptance rates to 4-year colleges dramatically increased from 55.5% to 77.9%, while the 2-year college's rate increased from 86.0% to 96.7%. College became an option for many more students.

These reforms dramatically reduced college-bound students' incentives for school achievement. The multiple criteria for college admissions meant that if one had difficulty achieving in one or several academic areas (say math or science), one no longer had to exert effort in that area, because it was no longer a barrier to college. In addition, the large increases in college attendance (as the number of young people was declining), dramatically increased acceptance rates. Teachers' responsiveness to students' interests and reduced demands made school easier and reduced the need for effort on unpleasant assignments.

In turn, these reforms also reduced the incentives for "work-bound students". First, two of the reforms transformed some students who formerly would have been "work-bound" into college-bound students. The multiple criteria for college admissions and increasing the availability of college meant that some former "work-bound" students (formerly excluded from considering college) could now attend college. Second, the other two reforms (instruction responsive to students' interests and reduced demands) reduced the need for effort on unpleasant assignments for all students, regardless of plans. Third, changes in the job world led to reduced incentives for work-bound students. After the college admissions reforms, only the lowest achieving high school graduates sought jobs right after high school. In response, employers reported (to high school placement staff) that high school graduates could no longer handle white-collar jobs, and they raised the credential requirements for white-collar jobs. They no longer hired high school graduates for these jobs, but instead recruited college graduates for these jobs. The jobs available to high school graduates became more homogeneously undemanding, and they offered few incentives (Tsutsui & Miki, 2001).

While Americans often view Japanese youth as "workaholics", genetically or culturally driven to overwork from an early age (or at birth), Stinchcombe's model suggests the possibility that the impetus for Japanese hard work was in the social structure and its strong incentives. If reforms weakened these incentives, Stinchcombe's model would suggest that students' behaviors might change. Other studies have noted the factors encouraging student effort in Japan's high schools of the earlier period (Rohlen, 1983), and recent research has noted students' poor motivation in the lowest rank high schools in the recent era (Brinton, 1998). However, the present study is distinctive in having systematic survey data on a large number of comparable students from the same broad range of high schools studied in two periods, so this study can conduct comparable analyses which help elucidate the changes that have occurred.

The reformers hoped that these reforms would lead to many desirable outcomes. They hoped that multiple criteria would encourage top students to reduce their excessively narrow focus on the pursuit of academic achievement and to broaden to other activities. At the same time, they hoped the reforms would encourage lower achieving students to work harder in school since they could gain recognition from areas in which they were stronger and more interested. Moreover, if reforms reduced the intense pressures on top students so they stopped spending absurdly long hours on homework, they would become more like other students, and social and achievement inqualities might decline.

The reformers' expectations can be stated succinctly.

1. Reforms will reduce excessive amounts of homework time while raising the efforts of the least engaged students. Thus, there will be increased equality of effort among all students.

2. Reforms will free more students to engage in extracurricular activities, so students' participation in activities will increase and be more widespread among all students.
3. Reforms will free students for involvement in creative activities so their involvement in creative activities will be more widespread.

However, we must note the possibility that these reforms may operate somewhat differently than intended. Responsiveness to students' interests, reduced demands, multiple criteria, and greater availability of colleges might give students the impression that the same valuable goal is now more easily attained. There is now less incentive for special efforts, and some students might get the impression that now they can simply coast into college without much effort. College might be thought to promise the same rewards, at much less cost of effort.

DATA AND PLAN OF ANALYSIS

To examine these issues, we shall use three sources of data. First, we shall examine the Japanese High School and Beyond survey. This national longitudinal survey of high school seniors in 1980 allows us to an examine whether SES affects college attendance independent of merit and whether homework time influences college attendance independent of SES. Then we shall turn to a survey of Japanese students which was first conducted in 1979 and then replicated in 1997. These two surveys allow us to examine changes in the patterns of homework over this 18-year period, during which the Japanese reforms took place.

HOMEWORK TIME IS A MAJOR INFLUENCE ON COLLEGE ATTENDANCE

To Americans, homework time is an unusual focus for research. American research has focused on achievement outcomes, and even thoughtful studies of social psychological factors do not consider homework time (Kerckhoff, 1974). Although we didn't have test scores, in the context of Japan, homework time is a reasonable second choice. Indeed, homework time might even be a first choice. Japanese people believe that achievement is almost totally a consequence of effort. A teacher, parent, or student looks at a high or low achievement outcome and says it indicates the individual's level of effort. Ability is almost never considered, except in extreme cases, for example, after a student has tried very hard and repeatedly gotten a low score. But this is believed to be unusual.

Homework time is probably not a perfect indicator of effort. Individuals may vary in their efforts during school, but it is hard to measure such efforts concretely, and efforts during school probably correlate strongly with homework time. Homework time has the virtue of referring to an objective behavior which can be precisely measured. Students may misperceive or misreport their homework time, but on a paper and pencil survey, there is little reason to expect intentional distortion.

Before turning to the main focus of this study, we examine our initial premise—to what extent is the college admissions process meritocratic and influenced by homework time? For this question, we examine the Japanese High School and Beyond survey. This national longitudinal survey of high school seniors in 1980 ($n = 1716$) was designed to resemble its American counterpart, and it is described in a previous article (Rosenbaum & Kariya, 1991). We examined whether SES affects college attendance independent of merit factors and

whether homework time influences college attendance. (Since virtually all students who enter 4-year colleges succeed in graduating, this is also an analysis of BA degree attainment.) We run logistic regressions on whether students enter 4-year colleges or not, examining the influence of family SES and school factors.

Using logistic analyses to explain which students attended 4-year colleges (vs. those who did not), we find that fathers' occupational status (a scale similar to Blau & Duncan, 1967) and gender have significant influences on college attendance, although fathers' and mothers' education do not (Table 3-1, Model 1). We next consider the influence of two merit variables: high school grades and ranks. High schools are ranked in an explicit formal hierarchy, and objective codes of schools' ranks were added to the students' file. Since students are admitted to high schools based solely on achievement test scores, students' school ranks are an indicator of their prior achievement.* When added to the regression (Models 2 and 3), grades and high school ranks have strong significant influences. Moreover, in the last stage (Model 4), the effects of high school grades and ranks seem to be mediated in part by a third merit factor, homework time, and these three merit variables mediate some of the effect of fathers' occupation, bringing it to insignificance. Apparently, Japanese educational attainment is meritocratic—the effects of fathers' occupational status on college attendance are totally mediated by the merit factors that indicate students' attainments and efforts. These results in the Japanese HSB sharply contrast with the large significant SES effects on college attainment in comparable regressions on the American HSB data (Rosenbaum, 1998, 2001).

Just as important for this paper, we find that homework time is a major influence on attainment. While high-school rank has the strongest influence on college attendance, homework time also has a major influence, just slightly smaller than high-school rank. Indeed, it is remarkable that its influence is independent of the effect of grades. Apparently, students who do more homework are indeed more likely to pass college entrance exams, net of their high-school grades. Just as Japan's popular culture assumes, students' homework efforts have strong signficant impact on whether they attend four-year colleges.

Homework time is the behavior that Japanese people believe is the first and most important cause of achievement, and it may be more highly valued than achievement. The present analyses seem to support that assumption. In a system where college admissions is determined by achievement exams, homework time is a stronger influence on college attendance than grades or SES. Thus, the variable we are studying, homework time, is an outcome of primary importance in Japan, perhaps the most important outcome.

THE JAPANESE SURVEY IN 1979 AND 1997

The JHSB of 1980 was not repeated in later years, but we do have a large survey that permits study of change. In 1979, Professor Matsubara (1981) directed a survey of 2625 students in three prefectures. That survey asked students about their school efforts and other activities. A number of researchers who had worked on that study, conducted a new study of the same schools in 1997 with a comparable sampling design. This pair of studies separated by an 18-year period provide measures of pre-reform and post-reform periods.

*These exam-based school-placement policies were designed to prevent SES influences in distorting merit selection. While Rohlen (1983) has noted an association between SES and high-school rank, he did not examine whether it was mediated by any merit factors. Our own analyses (available from authors) indicate that most or all of that association is mediated by achievement—junior high grades.

TABLE 3-1. Logistic Regression Analysis for Chance to Enter 4 Year University Upon High School Graduation (n = 1716)

	Model 1 (Chi-Square = 95.291***, df. = 4)			Model 2 (Chi-Square = 83.677***, df. = 5)			Model 3 (Chi-Square = 32.252***, df. = 6)			Model 4 (Chi-Square = 39.436***, df. = 7)		
Variable	B	S.E.	R	B	S.E.	R	B	S.E.	R	B	S.E.	R
Father's education	−0.001	0.021	0.000	−0.024	0.022	0.000	−0.020	0.022	0.000	−0.018	0.022	0.000
Mother's education	0.030	0.028	0.000	0.011	0.029	0.000	0.011	0.029	0.000	0.004	0.030	0.000
Father's occupation	0.018	0.005**	0.063	0.013	0.006*	0.041	0.011	0.006*	0.031	0.009	0.006	0.015
Male	0.836	0.105***	0.165	0.383	0.117**	0.063	0.392	0.119**	0.065	0.375	0.119**	0.062
HS rank				0.763	0.086***	0.187	0.793	0.087***	0.196	0.633	0.091***	0.150
Grades							0.200	0.036***	0.118	0.135	0.038***	0.073
Study hours										0.005	0.001***	0.132
Constant	−2.264	0.321***		−3.788	0.376***		−4.768	0.423***		−4.565	0.430***	

In 1979, three prefectures were selected for the survey. The present paper focuses on the two prefectures that had experienced very little change in student composition over the following two decades, and in particular, they had not experienced much student outflow to private schools. These prefectures had good public high schools and a clear hierarchy among schools (which creates a form of tracking between schools). Over the last two decades, these two prefectures have had almost no change in their school district and tracking policies (including admissions criteria for each rank). Since changes in tracking policies in Japanese public high schools have led to departures of some of the most motivated students to private schools and changes in the student body composition in public schools (Kariya & Rosenbaum, 1999), it was important to select prefectures where such changes had not occured over this 18-year span. In addition, these prefectures had few good private schools to draw away good students. Moreover, there were no other kinds of changes in the economy or social attributes in these prefectures that might raise concerns about the comparability of the kinds of students in the two time periods. While our 1997 sample includes more children whose fathers were from professional and service occupations, and fewer from self-employed, clerical, and manual occupations, these changes are in line with national changes in adult male employment.*

While the Japanese discussion of "exam hell" views it as an aggregate problem in high schools generally, our analyses examine it in more detail, with special focus on if they are manifest in the different ranks of high schools. Our analyses give special focus to the main form of tracking in Japan. Japan has no tracking before high school, but at the end of ninth grade, all students take achievement tests, and they are admitted to high schools based on their achievement test scores. Thus, high schools are ranked within school districts, and most districts have four or more ranks.

This study draws its sample from 5 high schools in one prefecture and 6 high schools in the other. Following the customary research practice of grouping high schools into four ranks, we sample at least one school in each rank from each prefecture.

*Unlike the JHSB which is a national sample, we cannot claim that these two prefectures are representative. While it is possible that the schools in these prefectures are unrepresentative of the nation's schools, the data on our students are similar to the results in the JHSB national survey. For instance, on our dependent variable, homework minutes per night, while the high school juniors in the top-rank high schools in our sample spent 151 min a night, the national JHSB seniors spent 173 min. Similar differences are evident for the second and fourth ranks of high schools—Rank 2: 125 in our sample vs. 142 min in JHSB; Rank4: 30 vs. 42 (the difference is in the opposite direction, but equally small in Rank 3: 107 vs. 84). These results indicating 17–22 min increases in the top two ranks are to be expected, since seniors probably spend more time on homework than juniors because of university exams. Although we cannot be certain about the generalizability of our results to other prefectures, this comparison suggests that our sample of juniors does not seem very different than the JHSB national sample of seniors in homework time.

Despite these analyses, the absence of elite private schools in these prefectures might make us expect that the schools in our sample include more high-achieving students than the nation's other public schools, particularly public schools in major cities like Tokyo and Kyoto. If so, then our sample might show somewhat higher effort than in Japan as a whole. That would make our findings of declining student effort even more surprising. Of course, studying public high schools in Tokyo or Kyoto in 1979 and 1997 would make a bad comparison, because the most motivated students left the public schools over this period (Kariya and Rosenbaum, 1999).

We cannot estimate response rate. Surveys were administered on one day, so absent students on that day are not represented in the 1979 and 1997 surveys. However, this is less of a problem since Japan has better attendance than the United States. While 27.9% of U.S. students report never being absent in senior year, 57.1% of Japanese students were never absent. On the other side of the spectrum, while 20.1% of U.S. students were absent 5 or more days, only 8.0% of Japanese students were (unpublished analyses, JSHB and US-HSB). Moreover, since attendance rates have decreased in Japan over this 18-year period, our 1997 analyses of homework time underrepresent the lowest-effort students. In light of the findings reported later, this indicates that the changes we note are probably underestimates of the real declines in effort.

While ranks are defined in terms of achievement scores on admissions exams, the qualitative implications of ranks can be seen in terms of their outcomes. At the time of our first data collection in 1979, graduates of top high schools tended to be admitted at top and middle national universities, graduates of second-rank schools tended to be admitted to other national universities, graduates of third-rank schools tended to be admitted to private universities, graduates of fourth-rank (vocational) schools tended to take jobs and a few attended vocational post-secondary schools. There is no gender difference in the top-rank schools in either period: 27.5% of males are in top-rank HS, while 26.9% of females are. In 1997, these percentages are 27.1% and 27.3% correspondingly.*

Obviously, causality cannot be inferred with certainty. Many other changes occurred over this period. However, it is our judgement that the reforms were the major influences on the outcomes being measured, and no other factor had such clear potential influences. Regardless, these analyses indicate whether the outcomes the reforms sought were happening.

THE PRE-REFORM "EXAM HELL" ERA

To understand the meaning of homework time, it should be considered in the context of the number of discretionary hours in a student's day. A national survey of Japanese students found that in an average day, high school students typically spend 8 hr in school, 1.5 hr going to school, 2.5 hr in meals, chores, and personal care, and 7 hr sleeping (NHK, 1991). This leaves 5 hr in the day for everything else, so our findings about students' reported homework time can be judged in the context of roughly 5 hr of discretionary time.

In the earlier era, the Japanese system elicited widespread effort. As noted, while 43% of American 17-year-olds did no homework on an average school night, only 22% of Japanese students did. Moreover, even in lower ranked high schools, where students had lower achievement, large portions of students did substantial amounts of homework. While 67% of Americans did one hour or less homework a night, only 27% of students in Japan's third-ranked high schools made such low efforts, and much smaller proportions did so in the first- and second-ranked schools (Figure 3-1). Only in Japan's lowest rank high schools do we see similar levels of low effort as are typical in the average American school. Given Japan's 6-day week and longer school year, the national differences in total homework hours in a year are actually far greater than these daily reports suggest. Clearly, the Japanese system managed to motivate a large portion of youth in three of the four levels of schools.

Indeed, our analyses of 1979 indicate that policymakers had some reason for concern about overwork (Figure 3-1, square data points). In the highest rank general high schools, where students strived for entrance at the highest rank universities, 12.4% of students work over 4 hr a day on homework, and another 23.9% work 3–4 hr a day. Four hours of homework leaves little time for recreation and may sometimes cut into sleep. In the year before the university exams, students have a common saying, "Four is a pass, and five is a fail" which means that students who get 5-hr sleep a night will not pass the exams. While our findings do

*While we lack data on test scores, junior high grades correlate highly with the examination scores of students applying for high schools. Our data on junior high grades confirm the distinctions among high schools with the differences between the first- and third-school ranks and the third- and fourth-school ranks being larger than the standard deviations within schools. The second-rank schools fell evenly between first- and third-ranks, but not quite a standard deviation separated them.

not necessarily indicate that students have this extreme shortage of sleep, we find that some students are spending a great deal of time on homework. This is a serious burden that prompted policymakers to make the reforms.

However, even in the top high schools, "exam hell" is not universal. Less than 37% of students work over 3 hr a night. Indeed, 5.4% do no homework at night, and another 8.6% do less than an hour a night or none.

Moreover, the pressure is much lower at lower rank high schools. In the second-rank general high schools, where students are all college-bound, but few will gain entrance to top-rank universities, only 6% of students work over 4 hr a day on homework, and another 15.7%

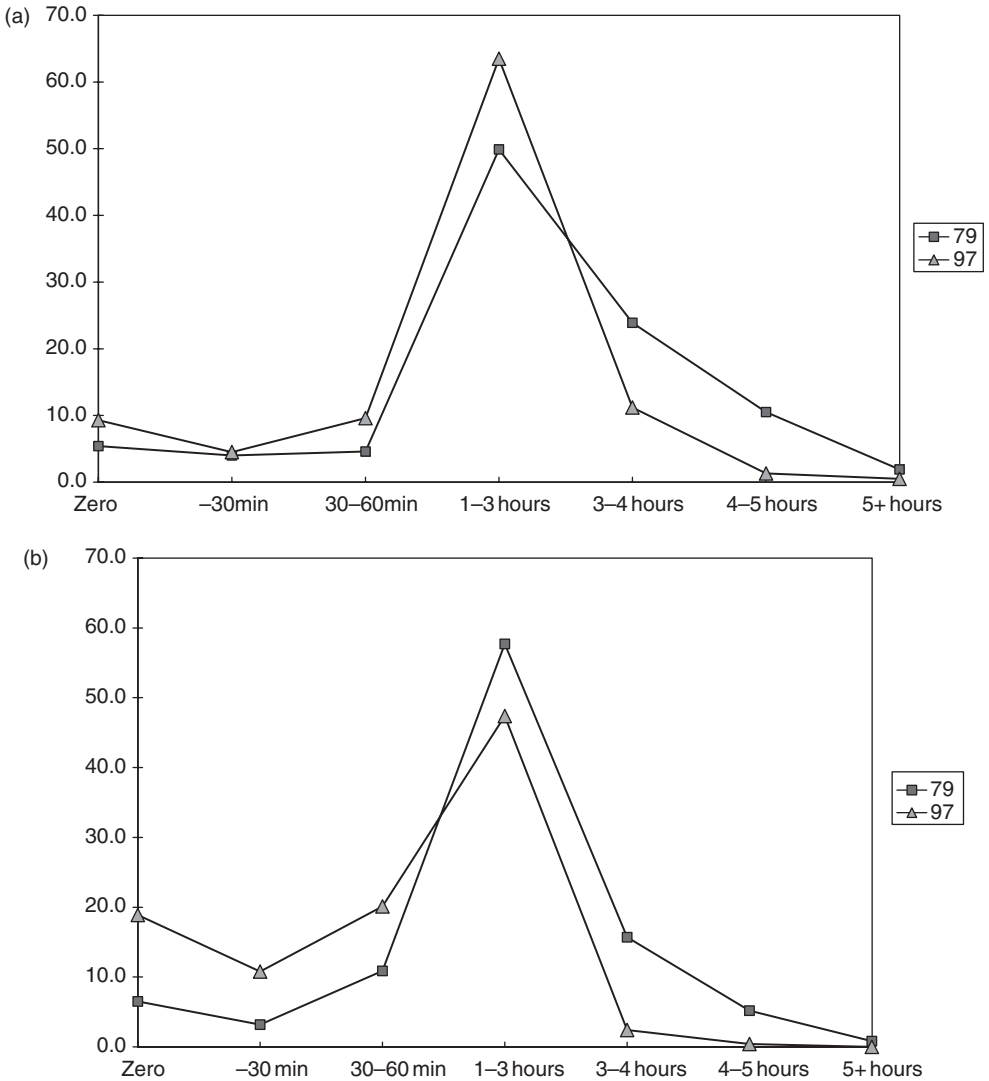

FIGURE 3-1. (a) Homework time of rank-1 students; (b) Homework time of rank-2 students; (c) Homework time rank-3 students; (d) Homework time of rank-4 students.

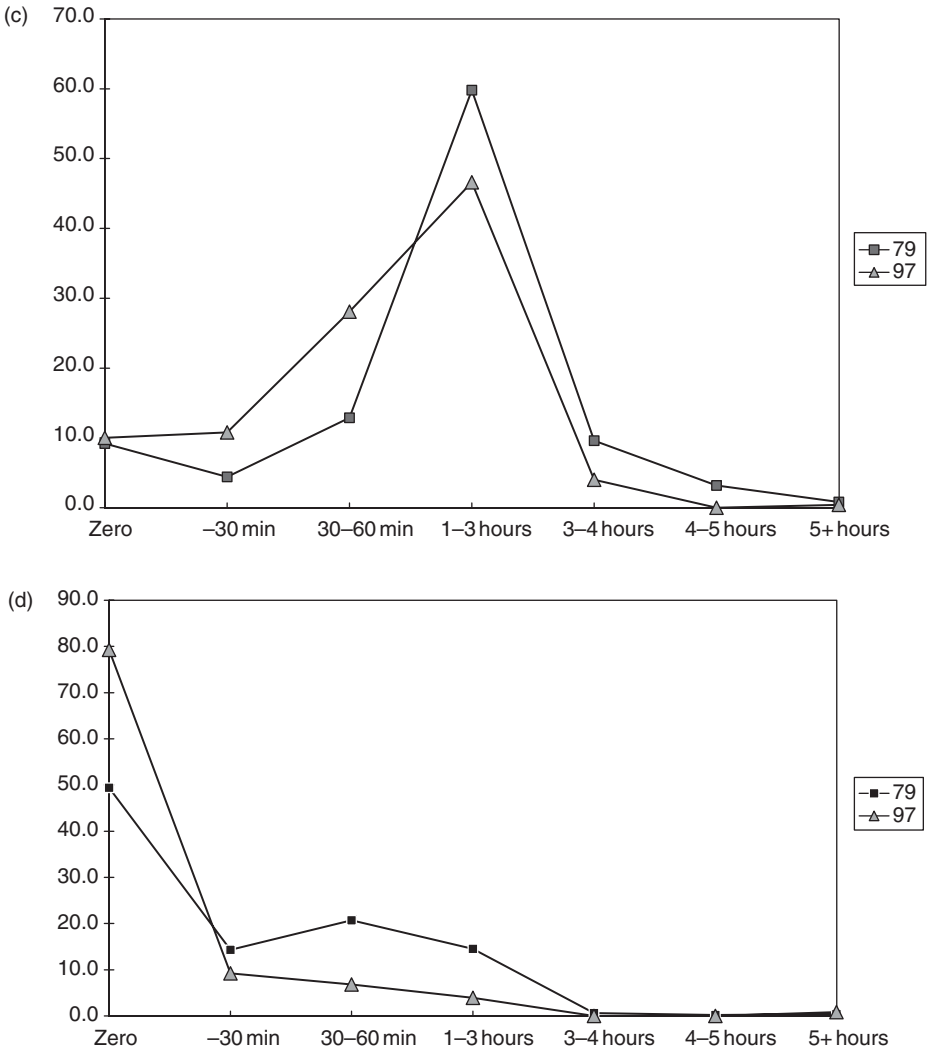

FIGURE 3-1. Continued

work 3–4 hr a day. Thus less than 22% of students in these schools are under "exam hell" pressures. Moreover, 6.5% do no homework at night, and another 14.2% do less than an hour a night. In these college-bound high schools, fewer students face "exam-hell" pressures than do less than an hour a night. The pattern is very similar in third-rank high schools.

Turning to fourth-rank high schools, we find that less than 1% students work over 4 hr a day, less than 1% work 3–4 hr, while 50% do no homework a night, and another 35% do less than an hour a night. This distribution looks nothing like the exam-hell fears expressed by policymakers.

Thus, even at the outset, as the policymakers were concerned about highly pressured students caught in an exam-hell of frantic activity and sleepless nights, many students did not appear to be under much pressure, and only at the top-rank general high schools were substantial numbers under such pressure. If one considers over 4 hr as too much pressure, only

5.5% of our sample is experiencing an "exam hell" (only 16.8% of our sample if 3 hr is the criterion).

AFTER THE REFORMS

What happened after the reforms? Did these reforms lead to fewer pressured students? Judging from students' homework time, the reforms had their desired effects. However, they also had some unanticipated effects as well.

Almost 20 years later, in 1997, analyses indicate that policymakers accomplished some of what they wanted (Figure 3-1, triangle data points). In the highest-rank high schools, the proportion of students working 4 or more hours a day on homework declined, from 12.4% to 1.8%, and those working over 3 hr a day declined from 36.3% to 13.0%. The most pressured students had not vanished, but there were fewer of them. Also as the reformers hoped, the proportion doing a moderate amount of homework (1–3 hr) increased a great deal, from 49.9% to 63.5%.

However, the reforms also had effects at the other end of the scale—the least pressured students also felt less pressure. The proportion of students doing no homework a night increased by 72% (from 5.4 to 9.3%), and those doing less than an hour a night increased by 67% (from 14.0% to 23.4%).

Moreover, the reforms had stronger effects at lower-rank high schools. In the second-rank general high schools, the proportion of students working over 3 hr a day on homework plunged from 21.7% to 2.8%, so that few students in these schools are under high pressures. On the other end of the scale, the proportion doing no homework nearly tripled (from 6.5% to 18.9%), and those doing less than an hour a night more than doubled (from 20.7% to 49.8%, including those who did no homework). The proportion doing a moderate amount (1–3 hr) declined precipitously (from 57.7% to 47.4%). Thus, while the small number of highly pressured students in these schools declined, the big shift was from doing moderate to little homework.

In third-rank high schools, the proportion of students working over 3 hours a day on homework plunged (13.6% to 4.4%), and, on the other end of the scale, those doing an hour or less a night soared from 26.5% to 48.8%. The proportion doing a moderate amount (1–3 hr) declined substantially (from 59.8% to 46.6%), so there was a major shift from doing moderate to little homework.

Turning to fourth-rank high schools, we find that the reform had no impact on highly pressured students in these schools for there were almost none to start with. Indeed, only 14.5% did a moderate amount of homework, so, while this group declined to only 3.9% after the reform, it didn't affect many individuals. However, the reform had very large effects on students who were under little pressure. The proportion doing no homework dramatically increased from 49.4% to 79.3% at the same time that there was a pronounced decline in the numbers who did 1–60 min a night. In 1979, some students in these schools worked hard, and in some vocational programs in technical fields they learned calculus. Today, vocational students do not learn calculus, and few do any homework

Thus, the reforms accomplished their goal of reducing "exam hell", but they also had unanticipated consequences on other students too. The concern about overworked students seems to apply mostly to students in top-rank high schools, and the reforms succeeded in reducing the incidence of overworked students in these schools, although overwork was not entirely eliminated. In the other schools, there were few highly pressured students, but there

were big shifts from moderate to low levels of homework, and, in the lowest rank, big shifts from doing little homework to doing none. The goal of reducing pressure on the most pressured students affected some pressured students. However, the same reform had substantial effects in reducing the efforts of less pressured students. The reformers somehow had not anticipated that the reforms would affect these students.

INEQUALITY OF HOMEWORK TIME

Moreover, the reforms had another effect—an increase in inequality. As noted, one of the goals of the reforms was to reduce inequality, and the decreased academic pressure and multiple criteria were expected to reduce the narrow one-dimensional hierarchy. Unfortunately, in a nation that believes that effort is the key influence on achievement, we find that the reforms increased inequality.*

While declining in all high-school levels, homework time decreased relatively more in the middle-level schools, especially the second level. Students in top-rank high schools worked more than students in second-rank schools by 26 min in 1979 and by 48 min in 1997 (Table 3-2a). The difference is even larger when considered as a proportion of total time. Students in second-rank high schools worked 82.6% of the hours of top-rank students in 1979, but only 62.0% in 1997. Of course, the lowest level (rank-4 schools) had already begun with a low level of homework in 1979 (only 29.5 min).

TABLE 3-2a. Means of Homework Minutes per Night by High-School Rank

	Mean	S.D.	*n*	Amount change	Percent change
Rank 1					
1979	151.05	78.01	373	−25.33	−16.8%
1997	125.72	71.20	375		
Rank 2					
1979	124.78	72.27	248	−46.77	−37.5%
1997	78.01	62.68	249		
Rank 3					
1979	106.81	69.15	249	−24.46	−22.9%
1997	82.35	61.94	249		
Rank 4					
1979	29.52	45.46	498	−18.25	−61.8%
1997	11.27	37.01	487		

*For simplicity, the previous graphs recoded homework time to a limited number of categories to make the graphs easier to read, collapsing 1–2 hr and 2–3 hr (these were the items to which students responded). All categories were used for computing means. Students reporting more than 30 and up to 60 min are assigned 45 min, and those reporting more than 1 hr and up to 2 hr are assigned 1.5 hr, 2–3 hr as 2.5, etc. Since homework time should include time in after-school schools (juku), all homework time variables add 1 hour per night for students who said they attended juku. The present analyses compute means averaging these values. However, the juku adjustment added new data points to the 1997 homework scale which were not present in 1979, when juku attendance was rare. Some individuals have 3.25 hr in 1997, but none do in 1979. We use such values in computing their means, but, since nonequivalent scales could affect regression results, the regression results (reported later) collapse some categories of homework time so both years had the same number of categories. Thus, individuals with 3.25 hr of homework are coded as 3.5, included in the 3–4 hr range. We experimented with various other sets of recodes, and, while coefficients changed, our conclusions were not altered.

TABLE 3-2b. Means of TV Minutes per Night by High-School Rank

	Mean	S.D.	*n*	Amount change	Percent change
Rank 1					
1979	92.57	88.22	375	12.13	13.1%
1997	104.70	111.57	375		
Rank 2					
1979	100.19	114.35	250	24.06	24.0%
1997	124.25	117.03	250		
Rank 3					
1979	97.36	79.90	250	50.74	52.1%
1997	148.09	160.51	250		
Rank 4					
1979	142.88	83.27	500	28.88	20.2%
1997	171.76	142.43	500		

While the reforms led to more moderate levels of homework for the top-rank high schools, some students in these schools maintained high levels of homework. In other high schools, large numbers of students did nearly no homework. To the extent that homework hours leads to academic achievement and the development of work habits, the reforms are decreasing education for a large proportion of students, particularly outside the top-rank high schools. As a result, the reforms may be increasing inequalities among students.

SOCIAL CLASS DIFFERENCES

Having noted increased inequalities among students, we may wonder if they are related to social class effects. The survey asked students to code their fathers' occupations in one of 9 different occupational categories, among which we identified 4 status levels: (1) professionals and managers, (2) clerical, (3) skilled (manual, sales, self-employed), and (4) unskilled (transportation, service). (Farmers are not discussed because of too few cases in 1997.)

Analyzing homework time, we find that 1979 homework time increases with increasing SES—(1) prof/mgr, 116–119 min, (2) clerical, 107 min, (3) skilled (manual, sales, self-employed), 86–89 min, (4) unskilled (transport, service) 66–73 min (Table 3-3a). However, there is a fairly small span from top to second and third occupational levels. The two largest occupations, which represent second- and third-level occupations, clerical and manual children, do 90% and 72% as much homework as professionals' children.

By 1997, homework declines for all groups of students, but students from prof/mgr families reduced their homework less than those from lower status occupational origins. While managers' and professsionals' children's homework time declined by 22% and 27%, clerical, manual, and self-employed children's homework time dropped even more (by 41%, 52%, 40%). By 1997, the two largest groups, clerical and manual children have increased their discrepancy in homework time from 90% and 72% of professionals' children down to 72% and 48%. The reforms have given all children more freedom of choice, and students' choices have exacerbated social class differences.*

*Sales, service, and transport dropped 30% or less between 1979 and 1997, but they already started at very low levels.

Table 3-3a. Means of Homework Minutes per Night by Fathers' Occupations

	1979			1997				
	Mean (min.)	S.D.	Cases	Mean (min.)	S.D.	Cases	Amount Change	Percent Change
Occ. Status 1								
Professional	119.47	89.59	171	87.36	81.00	227	−32.12	−26.9%
Managerial	115.76	79.91	230	90.93	70.37	242	−24.83	−21.5%
Occ. Status 2								
Clerical	106.55	82.52	203	63.05	63.33	172	−43.50	−40.8%
Occ. Status 3								
Sales	89.20	78.98	75	61.83	73.99	90	−27.37	−30.7%
Self-employed	86.67	79.06	153	52.01	70.16	92	−34.66	−40.0%
Manual	86.59	81.94	229	41.70	63.18	182	−44.89	−51.8%
Occ. Status 4								
Transportation	66.11	71.31	113	61.73	81.59	78	−4.38	−6.6%
Service	73.46	73.47	39	41.70	63.18	182	−31.76	−43.2%
Farmers	56.41	68.95	96	76.36	107.01	11	19.96	35.4%

Table 3-3b. Means of TV Minutes per Night by Fathers' Occupations

	1979			1997				
	Mean (min.)	S.D.	Cases	Mean (min.)	S.D.	Cases	Amount Change	Percent Change
Occ. Status 1								
Professional	95.60	112.81	172	121.94	101.16	229	26.34	27.6%
Managerial	101.42	84.32	232	122.75	129.82	242	21.33	21.0%
Occ. Status 2								
Clerical	108.29	106.69	206	136.94	118.03	172	28.64	26.5%
Occ. Status 3								
Sales	112.00	70.41	75	123.30	78.77	91	11.30	10.1%
Self-employed	107.55	66.39	153	157.14	151.82	95	49.59	46.1%
Manual	117.31	68.20	229	159.91	171.07	184	42.60	36.3%
Occ. Status 4								
Transportation	139.76	133.41	114	153.34	124.49	79	13.58	9.7%
Service	127.31	77.93	39	133.97	85.86	58	6.66	5.2%
Farmers	138.59	80.81	96	222.23	252.05	13	83.64	60.3%

While Herrnstein and Murray (1994) worry about increasing ability inequalities in society, these findings indicate another risk—increasing effort inequalities—which are even more serious in a society that values hard work and strong achievement.

PARTICIPATION IN EXTRACURRICULAR ACTIVITIES

What about the second concern—did 1979 school pressures for homework prevent students from engaging in other activities? Did the reforms succeed in getting students to turn their efforts to other activities that would build other skills or creativity?

Reformers were concerned that the one-dimensional meritocratic emphasis on grades was preventing students from spending time on other activities. The 1979 patterns in the top-rank

high schools support that concern. For students in top-rank high schools, the number of minutes in the day was perhaps the factor limiting activities in 1979. Students who did extracurricular activities spent 30–50 min fewer on homework than nonparticipants. In a system where college admission was based solely on academic performance, their lower homework time may have caused an academic disadvantage.

However, students in the second-rank high schools did not show this same pattern in 1979: participation in extracurricular activities did not reduce their homework time, indeed, participants had higher homework time than nonparticipants. Similarly, the reformers' assumption that activities forced students to sacrifice necessary homework time does not seem to be fully suppported in the third- and fourth-rank schools. Thus one of the premises for the reforms was not supported in 1979, before the reforms began.

As the reformers had hoped, after the reforms, participation in extracurricular activities greatly increased in top-rank high schools. In these schools, the portion of nonparticipants dropped from 15.3% to 5.9% of students surveyed (table available from authors). However, in second-rank general high schools, participation rates changed very little (nonparticipation declined from 14.9% to 13.3%), and participation declined in the two lower ranks. In third-rank high schools, nonparticipants increased from 14.2% to 21.7% and in fourth-rank high schools, nonparticipants almost doubled (from 9.6% to 16.9%). The assumption that relieving homework pressures would increase participation in activities worked in top-rank high schools, but not in the others. In the lower two ranks, students given a freer choice opted out of participation.

Not only did the reforms allow a higher percentage of students in the top two ranks of high schools to engage in activities in 1997, but they also allowed them to do so without sacrificing homework time. Indeed, participants spent more time on homework than nonparticipants by a small margin. With the lower levels of homework required, participation could fit into students' lives. However, for the two lower-rank high schools, nonparticipants spent the same or less time on homework in 1979, and after the reforms, nonparticipants spent even less time on homework than participants. As reformers planned, reforms made more time for students in the top two ranks of high school to be in activities, and they could do so at little cost to their homework time. But for students in the two lower ranks of high schools, the reforms offered a freedom to avoid school activities and homework, and many students chose to avoid both.

MORE TIME FOR UNCREATIVE ACTIVITIES?—TV WATCHING

Did the reforms allow time for other creative activities, as the reformers hoped? Although we lack measures of other creative activities, we have measures of an activity that many consider uncreative—TV watching. TV was extensively available in both time periods. Nearly all Japanese homes had TV sets in 1979, and there were several channels in most areas of the country, so there were ample opportunities for TV watching in the earlier era. Indeed, the availability of TV in our sample is evident in the finding that only a small number of students spent no time watching TV in 1979, and these individuals were mostly in the higher occupation families that could most afford TVs. Thus, the changes that occur over this period are probably not due to the physical availability of TV sets.

Students were asked how much time they spent watching TV on an average day. All groups show increases, but the gain is much less in the top-rank high schools than in the other three ranks (see Table 3-2b). Inspecting the distributions of students spending different

amounts of time watching TV, the distributions are virtually identical in 1979 and 1997 for students in the top-ranked schools (figure available from authors). Although students in second- and third-rank high schools show no change in the incidence of TV watching at the lower and upper extremes (watching less than 30 min a day or more than 5 hr), students in mid-rank schools show a large increase in the percentage watching 3–5 hr a day, while those watching one hour or less a day declined. While high-dosage TV watching (5 or more hours) remained infrequent (less than 3%) in second- and third-rank schools, it doubled for students in fourth-rank schools (from 5% to 10%).

Thus the reforms freed students' time for activities other than schoolwork, but this seems to have led to an increase in lengthy TV watching. The reforms were often described as "student-centered," "democratic", and following the American lead of respecting youths' own free choices, but unfortunately they led to a phenomenon well-known in the US—massive TV watching.

Moreover, while the reforms were intended to promote equality, they led to inequality in students' TV watching. Students in top-rank high schools devoted less time to TV and increased less over the 18-year span than other students (Table 3-2b). Their distribution of TV watching changed relatively little over the 18-year period. However, TV watching drastically increased in the lower-rank high schools, with especially great increases in the numbers spending over 3 hr a day in front of the TV.

SOCIAL BACKGROUND AND TV TIME

How are these changes distributed among occupational groups? We find that 1979 TV time generally increases with decreasing SES—(1) prof/mgr, 96–101 min, (2) clerical, 108 min, (3) skilled (manual, sales, self-employed), 117, 112, 108 min, (4) unskilled (transport, service) 140, 127 min (Table 3-3b). However, there is a fairly small span from top to second and third occupational levels—the two largest occupations, which represent second- and third-level occupations, clerical and manual children, do only 7% and 16% more TV time than managers' children.

By 1997, TV time has increased for all groups of students, but students from prof/mgr families increased their TV time less than lower status occupations. While managers' and professionals' children increased their TV time by 26 and 21 min, manual and self-employed increased their higher TV time even more (by 43 and 50 min a day). In the earlier period, manual workers' children spent 16% more time watching TV than managers' children, but that increases to 30% more by 1997. The reforms have given all children more freedom of choice, and students' choices may have exacerbated some social class differences.*

MULTIVARIATE ANALYSIS OF HOMEWORK TIME

We have noted multiple factors associated with students' homework time and TV time: raw changes over the 18 years, differences by high-school rank and fathers' occupation. In addition,

*Not all class differences were increased. Unlike their big declines in homework time, children of clerical, sales, service, and transport workers increased TV time only a little (by only 28, 11, and 7 min), so their TV time stayed close to the level of managers' children, even though their homework time did not. Transport workers' children increased their TV time by only 14 min; however, their TV watching was already at a high level in 1979. Farmers' children show a dramatic increase, but this is based on only 13 cases.

we might expect gender differences and possibly effects of mothers' education. We can analyze the net effects of all these factors by modelling them with multiple regression analyses.

Fathers' occupations were coded by prestige score, using an occupational code developed by the Japanese Social Stratification and Mobility Survey similar to that of prestige scores (Blau & Duncan, 1965). Mothers' education was coded into four categories, gender is dichotomous, and dummies were created for the top three school ranks, with the fourth excluded (fathers' education was not included because it was never a significant influence; mothers' and fathers' education are highly correlated: 0.555 in 1979 and 0.519 in 1997). As noted above, some categories of 1997 homework time were collapsed to make the same number of categories as in 1979.

Homework time was regressed on fathers' occupation, mothers' education, gender, and high-school rank dummies in 1979 and 1997 (Table 3-4). In the earlier year, high-school ranks were strongly related to homework time, but fathers' occupation, mothers' education, and gender had no significant effects. Eighteen years later, the effects of the first rank were nearly as large as previously, but the effects of the second rank had declined.

While gender and mothers' education had no influence pre-reform, the efforts of females and youths with more educated mothers become significant after the reform. Social class differences (from mothers' education) were absent in the earlier period, but they are strong and significant after the reforms.

Moreover, these changes were statistically significant. In an analysis pooling data from both years, and using interaction terms for all variables by the later year, we find that all students showed a significant decline in effort, and males, students in second-rank schools, and students with less educated mothers showed additional significant declines (table available from authors). The reform's success in decreasing school pressures for effort let students choose how much homework to do, and their choices were related to their mothers' education and gender.*

Table 3-4. Regression Analysis for Homework Minutes per Night in 1979 and 1997

	1979 (Adj R^2 = .372, F = 124.882***, n = 1255)		1997 Adj R^2 = .435, F = 142.466***, n = 1102)	
	B	Beta	B	Beta
Father's Occupation	0.259	0.029	0.235	0.031
Mother's Education	−1.134	−0.028	3.836	0.092***
Male	−4.045	−0.024	−7.281	−0.050**
Rank1	116.876	0.659***	108.601	0.683***
Rank2	91.613	0.441***	65.482	0.352***
Rank3	75.531	0.368***	74.912	0.392***
Constant	37.387	**	−42.266	**

*$p < .05$; **$p < 0.01$; ***$p < .001$

*We also ran regression analysis to examine the various influences on TV time (tables omitted for brevity). In 1979, neither fathers' occupation nor mothers' education had significant effect on TV time, but by 1997 mothers' education had become significant. Moreover, the pattern of high-school ranks changes. Over this 18-year period, the top-rank students increase their TV time less than students in rank-4 schools, while rank-3 students become increasingly like rank-4 students in their TV time. It is also noteworthy that females have come close to catching up with males in TV time. Thus, youth with more highly educated mothers spend less time watching TV, and top-rank high schools have increasingly strong effects in decreasing TV time. Estimating the coefficients in an interaction model like the preceding one on homework time finds that the mothers' education effect, though significant in 1997, is not quite significantly different from that of 1979.

CONCLUSION

Contrary to American stereotype, Japanese youth are not "workaholics," genetically or culturally driven to overwork. In a competition for laziness, the Japanese can keep up with Americans given the right conditions. Japan's meritocracy did not provide those conditions, but its American-style reforms did. These results indicate that the impetus for Japanese youths' hard work was the strong incentive system. After reforms decreased those incentives, youths' efforts dramatically declined.

These results have important implications for our understanding of the adolescent life stage. Within the United States, adolescents' low school efforts are so prevalent that they seem to be a feature of the adolescent life stage. However, such low efforts were not an attribute of adolescent behavior in pre-reform Japan. They only came to be prevalent after Japan implemented its school reforms. These behaviors are not a feature of the life stage; they arose only with dramatic changes in the social context.

Even Japanese policymakers may have misjudged Japanese youth. As intended, reforms reduced the intense pressures on top students, reducing 'exam hell' and the number of students spending over 3 hr a day on homework. But the policies had similar or greater impact throughout the system, also reducing the efforts of students who were not overworking. The reforms led to severe decreases in students' homework time, even for students in the lowest-rank high schools, where zero homework became the overwhelming norm. Thus, reforms which intended to decrease overwork actually had some success in achieving that goal, but they had additional unintended effects of decreasing low levels of homework even lower.

In addition, reducing the overwork by top students did not reduce inequalities among students. Instead, the reforms actually increased inequalities of efforts across different high schools. In particular, the reforms increased the gap between the students in top-rank schools and all others. In second-rank high schools, where many students had formerly worked almost as hard as students in top-rank high schools, the number of such students drastically declined after the reforms. After the reforms, students in top-rank schools stood out even more, as students in second-rank schools came to resemble students in third-rank schools.

At the same time as the advantage of the top students was increasing, the lowest groups were falling more. Reformers hoped that multidimensional criteria would motivate students with lower achievement in one field (say, math) to devote time to other areas where they had interests or strengths (say, literature). Nonetheless, the reforms were accompanied by strong decreases in homework in lower-rank high schools, and most students in the lowest-rank schools decreased their low efforts down to none at all.

Moreover, there were large declines in effort by students from low-SES families, particularly manual workers. While school efforts declined a little for high-SES students, efforts declined much more for other students. Even after controls for school rank, mothers' education has a much stronger influence on students' efforts after the reform, both for males and females. Lessening the school pressures for homework leaves the choice about homework time on students and their parents, and family socioeconomic background becomes a more important influence. Given the chance to devote their efforts to any activities, low-SES students and students in the lower-rank high schools also dramatically increased their TV time.

Japanese policymakers cite stories about individual students indicating the reforms' successes and failures. The reduced pressures on top students are commonly discussed. While policymakers are quick to take credit for their successes, they blame the problems on other causes. When some students do little homework, this is blamed on American influences, pop culture, or increased affluence. While these interpretations cannot be ruled out, American pop culture has

been a strong influence for many decades, and affluence does not explain why high SES students work harder than low-SES students or why this SES difference has increased over time.

But policymakers do not seem aware of how many students or which students are affected by the reforms' failures. The most serious shortcoming of policymakers is a failure to examine how reforms have altered incentives for different groups of students. The reforms have led to lower efforts by many more students than reformers have recognized (publicly, at least). Moreover, the reforms' impact on middle- and lower-rank schools and on middle- and lower SES students is not noted by policymakers, and perhaps not realized by them.

Obviously, these reforms were not the only changes happening over this time period. The weakening Japanese economy in the 1990s may have pushed more students into college, just as the reforms were increasing the availability of college. However, even in 1997, the labor market demand for high school graduates continued to exceed the supply, because so few graduates did not attend college. The weak economy hurt the demand for college-educated youth much more than for high school graduates. The weak economy may have contributed to employers' decision not to hire high school graduates into white-collar jobs, which reduced work-bound students' incentives, but the school reforms also probably contributed, since the high schools reported that employers no longer believed high school graduates could handle white-collar jobs, and employers would likely prefer cheap high school graduates if they could handle the jobs. While the weak economy may have had some impact, it seems likely that the reforms had the biggest impact on students' declining incentives.

While the effects of the specific reforms cannot be separated, all the reforms are mutually reinforcing, pushing incentives in similar directions. Japan implemented reforms to increase responsiveness to students' interests, reduce demands, introduce multiple criteria, and provide greater availability of colleges. All the reforms sought to reduce pressure, by reducing the incentives for achievement. By reducing the levels of school effort to get three kinds of payoffs—high school graduation, teachers' recommendations, and college entrance requirements—the reforms reduced incentives for school effort. Moreover, the only incentives that remained undiminished were admissions to the top-rank universities, so only the students aspiring to these universities, the top students in the top high schools, remained relatively unaffected by the reforms. The reforms lowered incentives for all other students. What is especially disappointing was that they had their greatest impact on the students who would be most hurt by decreased efforts and participation.

Magic tricks occur while everyone is looking most intently—but at the wrong place. The same may be true for the perverse consequences of reforms. In terms of their goals, the reforms were very successful—the most pressured students experienced declines in pressure and lower numbers showed high levels of homework time. However, as reforms successfully reduced school pressures, inequalities in student effort and participation loomed even larger, and were even more strongly influenced by social class background. In the pre-reform era, strong school ranks and strong teacher and school pressures for effort reduced inequalities in student effort and reduced social class influences. Weakening these universalistic influences left effort up to students' choices, but not surprisingly, not all students make the same choices, and students' choices are highly influenced by their upbringing. SES had increasing influence on students' efforts.

These results suggest a tradeoff between freedom and equality. When high schools reduce their uniformly high demands and leave students' efforts up to individuals' choices, inequalities emerge and become more pronounced, particularly differences arising from family influences. When given the freedom to choose, students whose families encourage school efforts continue striving in school, while students from other families strive less and devote

more time to TV. Inequalities in student social class more strongly influenced their efforts, and, presumably what they learned in school.

In retrospect, we can better appreciate the positive qualities of Japan's old meritocracy. While the old system demanded high effort from all students, it reduced social class differences in students' effort. While the old system created intense pressures on the most motivated students, it stimulated students from less advantaged families to exert some effort, which they otherwise would not have done (and which they stopped when the reforms decreased the pressures). These relatively high efforts (with manual workers' children doing 1.5 hours of homework a night, more than that of 67% of American 17-year-olds at that time) may account for the high academic competencies and personal work habits that made Japanese youth the best in the world in national comparisons. The reforms reduced the seemingly oppressive demands by schools, but in the process, they allowed social class influences to have increasing influence as students made different choices about their homework efforts and TV time. Schools cannot reduce social class influences by making low demands, unless they actively suppress the efforts of the more motivated students. Schools can only reduce social class influences by demanding high effort from all.

Japanese youths' efforts declined sharply over these two decades, and these reforms are the probable cause. There is a sad irony to these outcomes, which Durkheim (1912) would have anticipated. In its effort to free youth from school pressures, Japan may have subjected youth more strongly to their family circumstances, which are associated with social class. Ironically, while one-dimensional meritocracies make inequalities more salient, they also make the rules perfectly clear to all, just the kind of articulation that Stinchcombe (1965) said would encourage youths' school efforts. Perhaps as a consequence, this articulated meritocracy reduced the actual behavioral inequalities among youth. As Japan moved away from a one-dimensional meritocracy, youth's behavior became more unequal.

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