

Copyright © 2003 The University of North Carolina Press. All rights reserved.

Social Forces 82.2 (2003) 803-832

[\[Project\]](#) [\[Search\]](#) [\[Journals\]](#) [\[This Journal\]](#) [\[Contents\]](#) |

Access provided by Brown University

[\[Access article in PDF\]](#)

What Happens after the High School Years among Young Persons with Disabilities?*

Thomas Wells

Brown University

Gary D. Sandefur

University of Wisconsin-Madison

Dennis P. Hogan

Brown University

Abstract

In this article, we examine the immediate post-high school years of adolescents with disabilities. Using data from the National Educational Longitudinal Study of 1988 and the National Longitudinal Transition Study of Special Education Students, 1987-1991, we examine the transition from adolescence to adulthood and uncover the specific factors that are associated with the likelihood of making various early transitions to adulthood. Our results reveal that disability and type of disability profoundly affect youths' immediate post-high school activities. In addition, family socioeconomic resources have a smaller impact on the transition to adulthood among adolescents with disabilities than among adolescents without disabilities. Many resources families use to increase education and to promote the transition to adulthood do not operate, effectively blocking the intergenerational transfer of socioeconomic privilege.

Sociology has long been concerned with inequality, with a long tradition of research on the barriers to full participation in American society experienced by recognizable social groups, including women, racial and ethnic minorities, and the elderly. Yet sociologists have paid little attention to the barriers experienced by another sizable minority in American society, individuals with disabilities.¹ Fortunately, sociologists and social scientists are beginning to pay more attention to people with disabilities, especially adults and very young children (Albrecht, Seelman & Bury 2001; Barnartt & Altman 2000, 2001). Sociologists have paid almost no attention to those individuals with disabilities **[End Page 803]** who are making the transition from late adolescence to full participation as adults in American society.² An exception to this is Priestley (2001), whose work discusses the implications of disabilities for understanding the life course, including chapters that explicitly address the transition to adulthood. This is a critical period in the lives of individuals, as they move from dependence on their families to becoming full adult participants in society. In recent years, the federal, state, and local governments and private businesses have made considerable efforts to create opportunities for young adults with disabilities to participate more fully in American life. Yet sociologists have not investigated carefully the extent to which young adults with disabilities successfully navigate the transition to adulthood.

Individuals with disabilities constitute a substantial minority among young persons making the transition to adulthood. The number of children with disabilities varies depending on the definition of disability that is used (Altman 2001; Fujiura & Rutkowski-Kmitta 2001). For example, one estimate is that approximately one-fifth of the noninstitutionalized population of the U.S. has some form of physical or developmental disability (LaPlante & Carlson 1996). According to another recent estimate, approximately 12%-15% of American children are estimated to have some type of disability (Westat 2000), and slightly more than 6 million children are enrolled in federally supported educational programs for those with disabilities (U.S. Department of Education 2001). Although one can quibble with different definitions and estimates, the number of disabled adolescents in the U.S. is high enough that they are and should be a major public policy issue.

Of additional interest, recent work has demonstrated that the occurrence and severity of disabilities vary systematically according to particular social and demographic characteristics of families (Hogan et al. 1997). Hispanics, for example, are generally less likely to be identified as disabled. A higher proportion of children with disabilities live in single-mother or caregiver households than do children in general. The likelihood of a child having a disability is higher for poor families and for families where the parent or parents have a high school education or less relative to those with more education. In addition to facing the challenges presented by a disability, children with disabilities also face disadvantages in terms of family socioeconomic resources that assist the transition to adulthood (Hogan, Rogers & Msall 2000).

Much of the sociological work on young persons becoming adults has focused on educational attainment and completion, entering the full-time labor force, and initiating an independent family life via marriage or childbearing (Furstenberg 2000; Hogan & Astone 1986; Shanahan 2000). A focus on these critical life events reflects the way in which

contemporary young people think about and view this transitional period. Arnett (1998) found in interviews with a sample of young people that they defined adult status as living away from home, being financially independent, and taking responsibility for one's own life and decisions. The focus **[End Page 804]** in the literature captures Arnett's concepts of living away from home and financial independence. The main differences between his findings and the way sociologists have approached the transition to adulthood are that our focus on critical life events does not really get at personal responsibility for one's own decisions and Arnett's respondents did not identify marriage and childbearing as critical factors in attaining adult status. Yet it is important to look at these events, since the timing and circumstances of their occurrence can significantly affect the ability of young persons to attain financial and residential independence.

The early transition to adulthood is a critical stage in life in that individuals are faced with opportunities and constraints that not only affect their life in the short run but also may have a significant impact on their adult lives in the long run. Some adolescents take advantage of educational opportunities that substantially enhance their human capital and increase their productivity later in life. Others make poor decisions or face unfortunate circumstances that can lead to attaining too little education. This may substantially endanger a successful transition to adulthood and increase the risk of dependence. For example, prematurely entering the labor market or having children may impede the ability to acquire enough education to be successful in the labor market.

The transition to adulthood occurs over a multiyear period in the lives of most individuals beginning in the late teens or even earlier and continuing through a good part of the twenties (Furstenberg 2000; Shanahan 2000). In this article, we focus on the earliest part of this period. More specifically, we look at the period following the end of universal secondary education — when education is no longer freely available to individuals. This is a critical time, since individuals are moving from a period in which a pattern of behavior — attending secondary school — is nearly universal among American youth to one in which they have both more options about and, in some respects, more constraints on schooling, work, where they live, and when and how they start their families. Given the significance of this period for an individual's long-term well-being and given the substantial size of the group of young persons with disabilities, facilitating their ability to successfully navigate the years immediately following secondary school is critical both for them and for our society at large.

People with disabilities often face obstacles and barriers in addition to those faced by all young people during this period (Tisdall 2001). Although higher-educational institutions and employers have made significant efforts in recent years to accommodate the needs of individuals with disabilities so that they can more easily continue their educations or secure employment, barriers nevertheless remain in place. Further, particular types of impairments may have larger impacts during this period than other types, or they may have differential impacts on schooling, work, and independent living. For instance, young people with an orthopedic impairment may not experience any limitations with educational **[End Page 805]** outcomes, but they may experience limitations in terms of gaining employment or establishing residential independence. The success of early intervention and education programs for children with Down's syndrome has enabled many of these children to become

gainfully employed. There are a number of other federally mandated programs and policies designed to improve the educational and employment opportunities of individuals with other types of disabilities. Programs also exist to assist young persons with disabilities in their efforts to maintain their health and to prevent disease. These efforts are designed both to increase their human capital and to dismantle the barriers that prevent young persons with disabilities from active participation in adult life. ³

Although most observers agree that the efforts of schools to incorporate children with disabilities into school life is a major improvement over the past when children with disabilities were sent to special institutions or schools, there is a potential downside to the increased visibility of children with disabilities in the public schools. Schools have broad definitions of children with disabilities or special needs. In addition, the number of special educational needs that are recognized by the educational system has increased dramatically in recent years. This is especially true of learning disabilities. These categories become reified as the schools label individuals and these labels take on a very public quality. Other students are unavoidably aware of the fact that students with disabilities at least occasionally attend special classes, receive individualized services, or participate in other separate activities. In sum, schools label a greater percentage of youngsters as disabled. Further, young persons who in the past would not have been in the public schools are now there, and their classmates often know their special status.

Research on young adults has not yet caught up with changes in the population of American children or with the expanded role of schools as a major institution responsible for rehabilitation and enablement of large (and increasing) numbers of children with disabilities. Studies of student attainment often do not focus on adolescents with disabilities, nor do they attempt to assess the effects of disability on school success and the transition to adulthood.

One question that needs to be addressed is whether members of this newly distinctive minority are able to successfully navigate the period immediately following high school or whether significant barriers remain to their full participation, resulting in some individuals leaving school to remain dependent rather than launching themselves on a path to independence. The meaning of this question varies considerably with the disability of the individual involved. So, we may have become more successful at eliminating the barriers to full participation for individuals with physical limitations such as blindness, hearing, and mobility limitations but achieved less success in eliminating barriers for those with emotional disturbances or limitations in learning ability. As Barnartt (2001) points out, a disability may become defined as a status for many individuals by the larger **[End Page 806]** society (i.e., it may become a category in which they are placed that has a significant impact on how others react to them and thus may affect the opportunities open to them). In some cases it may become the master status — "so important in the eyes of society that it affects all other statuses a person might have" (Barnartt 2001:58).

This article focuses on adolescents with impairments and examines several events that embody the early transition to adulthood during the post-high school years. The particular transitions we examine involve educational attainment (high school graduation and enrollment in postsecondary school), competitive employment, residential independence,

and family formation (marriage and parenthood).

More specifically, the purpose of the article is to investigate these transitions in combination with one another and to identify the early pathways through which young people move toward full adult status. In addition, we explore how pathways differ between adolescents with disabilities and adolescents without special needs. Finally, we examine the effect of type of disability on the likelihood of making various early transitions as well as the effects of several other factors commonly used in research to predict outcomes, such as family income, race and ethnicity, family structure, and number of children in the household.

Data and Sample

The number of large-scale, nationally representative population surveys containing information on outcomes for disabled adolescents is very small. This study draws upon two such surveys. The first is the National Longitudinal Transition Study of Special Education Students, 1987-1991 (NLTS). This study grew out of a 1983 congressional mandate for a study focusing on special education students' experiences with the transition out of school and into adult life. The original sample contained more than 8,000 youth with disabilities, aged 13-21 and in grade 7 or higher in 1985-86. The sample was drawn so that findings generalize to the population of students in special secondary education in 1985-86, both as a whole and separately for students in each of the 11 federal special education disability categories. The disability status and disability type of adolescents were determined through school district records. The first wave of data was gathered from parents and school administrators in 1987, and the second wave was gathered from parents and young adults in 1990-91, when the latter were aged 18-26. The data contain information on demographic characteristics, family background, socioeconomic composition of schools, and the availability and use of general and specialized services within the schools attended by the respondents. As outcome measures, the survey contains information on whether individuals completed secondary school, whether they attended vocational school or college, whether they were competitively **[End Page 807]** employed, whether they were married, whether they were living independently, and whether they had children.

The second survey is the National Educational Longitudinal Study of 1988 (NELS). This survey began in 1988 with a cohort of eighth-graders. Follow-up surveys were done in 1990, 1992, and 1994. Consequently, we are able to examine these individuals at approximately age 20. Although the NELS was designed to be representative of the population of eighth-graders in 1988, students who were unable to complete the written questionnaire were excluded from the study. Thus, the NELS excluded students with relatively severe disabilities and contains data only on individuals without disabilities or with mild to moderate disabilities. Analyses of the NELS sample suggest that approximately half of the students in public schools with disabilities were excluded from the sample (Horn, Berkold & Bobbitt 1999). In addition, it is important to note that in the NLTS, the disability status and disability type of adolescents were determined through school district records, whereas in the NELS, this information was determined through the self-reports of students. However, the NELS can be used to examine the transitions to adulthood among adolescents with mild to

moderate disabilities and those without special needs. The data set contains a wealth of information on family characteristics, individual characteristics, and school characteristics as well as information on high school completion, college entry, employment, marriage, and fertility.

As just discussed, the NLTS and NELS are not strictly comparable (with respect to sample design, collection of disability information, and ages of respondents). However, these are two of the relatively few sets of longitudinal data that contain information on outcomes for large samples of disabled adolescents and that allow the researcher to analyze the transitions to adulthood. At the same time, the NELS offers the opportunity to compare a sample of adolescents with disabilities with an otherwise comparable sample of adolescents without disabilities.

The current analysis is based on longitudinal data of young persons who, at the time of follow-up, were 20 years old in the NELS and 18-26 in the NLTS. While the transition to adulthood may not be fully complete for young people until they reach their late twenties or even early thirties (especially with respect to marriage, fertility, and residential independence), currently there exist no nationally representative longitudinal sets of data that contain information on outcomes for individuals with disabilities into their late twenties and thirties. Using data sets and samples of young persons that are available, we analyze the early steps toward the transition to adulthood and the factors associated with this transition.

Using both the NLTS and the NELS, we will investigate whether and in what ways the years immediately following high school differ between students without disabilities and those with special needs. A total of 5,297 respondents who participated in both waves of the NLTS are included in our analysis. Also included are 12,490 respondents who participated in each wave of the NELS — 10,920 [End Page 808] respondents who did not report a disability and 1,570 respondents who did (in the data tables, the latter group is referred to as the NELS-D subsample).⁴

Variables

In the analysis, we consider five statuses that are part of the early transition to adulthood. In addition to considering education and employment (as has often been done in previous research), we also consider marital status, parental status, and residential independence.⁵ The five outcome measures are represented by categorical variables and are presented in [Table 1](#), along with descriptive statistics (weighted proportions and standard deviations).

Substantial differentials emerge not only between young adults with and without disabilities (most notably in terms of educational transitions) but also between individuals in the NLTS sample and those with disabilities in the NELS sample. As discussed earlier, the latter finding reflects differences in the reporting and determination of disabilities and the exclusion from the NELS of students who could not complete the written questionnaire. In addition,

substantial differentials are uncovered according to sex. Within each set of data, women are less likely than men to be working and less likely to be working full-time, but they are more likely to have achieved residential independence and to have had a child.

In the statistical analysis, we will identify factors associated with the likelihood of attaining these demographic markers immediately following the high school years. In addition to investigating the association of disability status with these markers, we also investigate the effects of several types of disabilities. Previous analyses using NLTS data show that disability type is associated with rates of high school graduation, postsecondary school enrollment, competitive employment, wages (among those working), and residential independence (Blackorby & Wagner 1996; Marder & D'Amico 1992; Wagner et al. 1993). In the NLTS, 11 types of disability are identified, consistent with federal special education disability categories. In the NELS, 9 disability categories exist and are quite comparable to those used in the NLTS. ⁶ Learning disability will serve as the omitted category during the regression analysis. This category is a useful benchmark since it is the single largest disability category.

In addition to the effects of disability type, we consider the potential impact of several demographic and socioeconomic variables. Previous research suggests a number of factors that we should examine as possibly important in transitions to adulthood among young adults with and without disabilities. For instance, earlier research suggests that high family income has a positive impact on transitions related to education and employment (Hauser 1993; Hauser & Phang 1993; McLanahan & Sandefur 1994). Past studies also show that growing up with both biological parents and having relatively few siblings have positive effects on **[End Page 809]**

Descriptive
Statistics,
Weighted
Proportions
and

Click for larger
view

Table 1

Descriptive Statistics, Weighted Proportions and Standard Deviations,
NLTS and NELS Samples

[End Page 810]

Descriptive
Statistics,
Weighted
Proportions
and

Click for larger
view

Table 1 (Continued)

Descriptive Statistics, Weighted Proportions and Standard Deviations,
NLTS and NELS Samples

[End Page 811]

educational outcomes (Blake 1989; McLanahan & Sandefur 1994). However, findings regarding the effects of race and ethnicity have not been as consistent. The independent effects of race and ethnicity on outcomes may be positive, negative, or statistically insignificant, depending on the set of data being analyzed and on what other variables have been statistically controlled (Hauser 1993; Hauser & Phang 1993; McLanahan & Sandefur 1994). In addition to these factors, we include a measure of the economic composition of students in schools, which serves as a measure of the social environment and peer influences. Finally, when the data permit, we include in the regression equations age, metropolitan location, and region as control variables. ⁷

Methods

The statistical analysis is conducted in two stages. The first stage consists of a latent class analysis, in which we examine the patterns of demographic markers in the immediate post-high school years. Cross-tabulating the outcomes pertaining to education, employment, living arrangements, marital status, and parenthood yields a total of 72 cells, corresponding to 72 possible combinations of outcomes. Fortunately, latent class models can be used as data reduction devices — they can identify a limited number of classes that can be used to represent and characterize the various sets of statuses. The latent class analysis produces a latent categorical variable, Y , which is not directly observable but which in our case is a function of five manifest categorical variables, A , B , C , D , and E , whose levels are indexed by i , j , k , l , and m , respectively. In formal terms, let π_{ijklm} denote the probability of a respondent being in cell (i,j,k,l,m) of the cross-tabulation. The latent class model with T latent classes can then be written as

equation 1

where $\pi_Y(t)$ is the probability that Y is at level t ; $\pi_{A|Y=t}(i)$ is the conditional probability that

item A takes on level i given that Y is at level t , $\pi_{B|Y=t}(j)$ is the conditional probability that item B takes on level j given that Y is at level t , and so on. The program used to conduct the analysis (L¹EM, developed by Jeroen Vermunt) produces a set of estimated latent class model parameters (latent class probabilities and conditional probabilities) based on maximum-likelihood estimation. The parameter estimates from the latent class model are then used to assign respondents to one of the T latent classes. Each respondent in cell (i, j, k, l, m) is assigned to the latent class for which he or she has the highest probability of membership, given his or her particular combination of **[End Page 812]** outcomes. (For a complete discussion of latent class models, see Clogg 1995; McCutcheon 1987.)

Preliminary latent class analyses revealed substantial heterogeneity in latent class structure among men and women.⁸ Consequently, we perform separate analyses for men and women. This combined with the presence of three separate samples — the NLTS, the NELS disabilities sample, and the NELS nondisabilities sample — produces six separate subsamples. Latent class models will be estimated for each of the six subsamples. This will allow us to make comparisons between young adults with and without disabilities and possibly to uncover differences in the structure of the transition to adulthood.

In the second stage of the analysis, we use multinomial logistic regression models to uncover the specific factors associated with latent class membership. The factors to be examined as possibly associated with latent class membership include type of disability, family income, and race and ethnicity. Let X represent the entire vector of predictor variables and β represent the vector of corresponding regression coefficients. Given T latent classes, the probability of individual i be assigned to latent class t can be written as

equation 2

in which α_t is the constant specific to latent class t , β_t is the vector of regression coefficients specific to latent class t , and X_i is the vector of independent variables specific to individual i . (For a complete discussion of multinomial logit models, see Agresti 1990; Maddala 1983.)

To briefly summarize, Y is a latent categorical variable consisting of T latent classes. These particular classes or categories will emerge from the latent class analysis. In the multinomial regression analysis, the vector of independent variables X will then be used to predict the likelihood of membership in a particular latent class t . Multinomial logit models will be estimated for each of the six subsamples. Analyzing several subsamples of data will allow us to investigate whether particular factors have differential effects across groups on transitions to adulthood.

Results

We present two sets of results, corresponding to the two stages of the analysis. The first set of results consists of fit statistics for the latent class analysis and descriptive information on the latent classes that emerge from the analysis. These results are presented in Tables [2](#) and [3](#). The second set of results relates to the multinomial **[End Page 813]** regression analysis. We investigate several factors that predict the likelihood of being in one of the various latent classes. These results appear in Tables [4](#) and [5](#).

Goodness-
of-Fit
Statistics,
Latent
Class

Table 2
Goodness-of-Fit Statistics, Latent Class
Analysis

Click for larger
view

[End Page 814]

Choosing a Set of Latent Classes

[Table 2](#) contains goodness-of-fit statistics from the latent class analyses. As with other statistical analyses of cross-tabulated data, the fit statistics take into account dissimilarities between frequencies observed in the cross-tabulation and frequencies predicted from the estimated model parameters. We rely on BIC as the sole criterion for selecting the number (and types) of latent classes, although we also present other fit statistics. The first panel in [Table 2](#) refers to women in the NLTS. According to BIC, a four-class model provides the best fit to the data. The index of dissimilarity (D) indicates that applying the four-class model to the data would result in the misclassification of approximately 4% of the cases. Among women with disabilities in the NELS, results suggest that a two-class model provides the best fit, although it entails a misclassification of approximately 15% of the sample. The results for the women without disabilities in the NELS indicate that a five-class model provides the best fit and that it results in the misclassification of about 3% of the cases.

Parallel analyses for men show that a four-class model is accepted as the best-fitting model for men in the NLTS, a three-class model is accepted for the men with disabilities in the NELS, and a five-class model is accepted for the men without disabilities in the NELS, [9](#) with these particular models misclassifying approximately 3%, 9%, and 2% of respondents, respectively.

Characterization and Composition of Latent Classes

As shown in [Table 2](#), the six subsamples are characterized by different sets of latent classes. Nonetheless, what emerges from the analyses of the six subsamples is a relatively short and exhaustive list of latent classes. The results of the latent class analysis indicate that, in general, individuals can be categorized into one of five basic latent classes, presented in [Table 3](#) (and accompanied by brief descriptions). As shown in [Table 3](#), several classes emerge repeatedly across subsamples. At the same time, several interesting differences are also uncovered across subsamples, in terms of the latent classes and the latent class probabilities that emerge. Latent class probabilities are useful for characterizing the relative sizes of the classes.

Four latent classes emerge for women in the NLTS, reflecting the assumption of full-time employment (latent class 1), the pursuit of postsecondary education (latent class 3), and the establishment of one's own family (latent class 4). However, the largest latent class to emerge is latent class 2 (the very dependent class). Of the women in the sample, 44% were assigned to this class, which consists mostly of those who have not graduated from high school, are not competitively employed, have not achieved residential independence, have not married, and have not borne children. In other words, this class is mostly comprised of those who have not made the transition to adulthood across any of the dimensions considered. The large size [**End Page 815**] of this class reflects the fact that the NLTS consists of many youths with severe disabilities, a group that was missed by the NELS.

Latent
Classes and
Latent
Class
Probabilities

Table 3

Latent Classes and Latent Class
Probabilities

Click for larger
view

Among women reporting a disability in the NELS sample, the analysis produces two latent classes — neither being latent class 2, the very dependent class. The vast majority of respondents (two-thirds) were assigned to latent [**End Page 816**] class 3, which in general consists of those who are single, have enrolled in postsecondary school, and, if working, are not working full-time. In short, most respondents appear to fit the profile of a full-time student. The remaining one-third of respondents have adopted a different early route to adulthood and were assigned to latent class 4. For the most part, latent class 4 is comprised of young adults who are not working and have not enrolled in postsecondary school but instead have achieved residential independence and established their own family. Thus, their early transition to adulthood is characterized primarily by the establishment of an independent family rather than by the pursuit of postsecondary education.

Among women in the NELS who reported no disability, the largest class to emerge is latent class 3, which can be further broken down into latent classes 3a and 3b, each consisting mostly of young adults who are single, have enrolled in postsecondary school, and, if working, are not working full-time. Roughly 70% of respondents are assigned to one of these two classes; what distinguishes latent classes 3a and 3b is residential independence. In other words, some women are living at home while pursuing higher education, whereas others have moved away from home to do so. Once again, a very dependent class (latent class 2) does not emerge from the NELS data; however, consistent with findings uncovered in the NLTS data, latent classes 1 and 4 also emerge from the analysis. In addition, the analysis produces a fifth and relatively small latent class, latent class 5, which is comprised mostly of young women who have achieved residential independence, have married (many have become parents), and who are working full-time.

Among the men in the NLTS, the largest class to emerge from the statistical analysis is latent class 2 (the very dependent class), with 42% of respondents being assigned to this class. Another large class (35%) to emerge is latent class 1, consisting of single men, the majority of whom have made the transition to full-time employment but have not yet established residential independence. The remaining two classes that emerge consist of young men who, for the most part, have enrolled in postsecondary school (latent class 3) and are mixing full-time work with family responsibilities (latent class 5).

Three of these four latent classes are uncovered among the sample of men reporting a disability in the NELS sample. The latent class that does not emerge from the analysis is latent class 2 — the very dependent class. Among this subsample of those with mild to moderate disabilities, latent class 1 emerges as the largest class. Fifty-seven percent of all respondents are assigned to latent class 1, and another 27% are assigned to latent class 3. Finally, latent class 5 (comprised mostly of those mixing family with work) once again emerges from the analysis, albeit as a relatively small latent class (16%).

Finally, among men in the NELS who reported no disability, latent classes 3a and 3b emerge as the largest classes. Consistent with results for their female counterparts, roughly 70% of the respondents in this sample are assigned to one of these two classes. Consistent with results for the other two male samples, **[End Page 817]** latent classes 1 and 5 emerge from the analysis (although latent class 1 emerges as a relatively small class among this subsample). Of particular interest, the analysis produces latent class 2a, a relatively small latent class that consists mostly of young men with no reported disability who have not graduated from high school, are not competitively employed, have not achieved residential independence, and have not married (although many have fathered children). We discuss this class further below.

The latent class analysis, performed on these six subsamples, reveals several major findings regarding young people's transitions to adulthood. As mentioned at the outset, only five basic latent classes emerge from the statistical analysis, and several of them (namely, latent classes 1, 3, and 5) emerge repeatedly, indicating (to some degree) common experiences with transitions to adulthood. However, going beneath the surface, latent class

probabilities are shown to vary tremendously across subsamples, revealing important between-group differences. Most striking, roughly 70% of the NELS respondents without disabilities are assigned to latent class 3 (full-time student), compared with roughly only 15%-25% of the NLTS respondents.

Further highlighting between-group differences, latent class 2 (the very dependent class) emerges as a very large class among the NLTS respondents (those with the most severe disabilities) but is nonexistent or relatively small among each set of the NELS respondents. The particular findings regarding latent classes 2 and 3 make apparent the large impact of serious disabilities on youths' transitions to adulthood.

The analysis also reveals important differences in the early transitions to adulthood between men and women. Latent class 4 (the family track) emerges for each of the three subsamples of women but for none of the subsamples of men. Conversely, latent class 5 (mixing family with work) consistently emerges among the subsamples of men but is evident in only one of the subsamples of women. The key distinction between these two groups of youths who have started families is the assumption of full-time employment. Consistent with these patterns, the percentages of men assigned to latent class 1 (characterized by full-time employment) are shown to be consistently higher (sometimes much higher) than those corresponding to women. Regarding the various other patterns, similarities between men and women do exist (similar patterns are uncovered for latent classes 1 and 2). However, to some extent, men and women appear to be starting the transition to adulthood in different ways, with women more likely to be making the transition through family and men more likely to be making it through work.

Finally, of note is the emergence of latent class 2a among male NELS respondents who did not report a disability. Five percent of these respondents have *not* made any of the transitions to adulthood (other than having fathered children), which suggests that a small percentage of young men in the NLTS sample might have been assigned to latent class 2 even in the absence of a disability. **[End Page 818]**

Factors Associated with Latent Class Membership

Tables [4](#) and [5](#) contain results from multinomial logistic regression models. ¹⁰ The categorical dependent variables in the analyses are the latent classes discussed above, with one simple modification — latent classes 3a and 3b are collapsed to form the more general latent class 3 (one general group of full-time students). In the regression models for each of the six subsamples, latent class 3 is used as the reference category (because it is common to all of the samples).

The regression results for women, presented in [Table 4](#), show that *type* of disability has profound implications for the various transitions being made by young women in the NLTS sample. For instance, relative to those with a learning disability, women with a visual impairment, hearing impairment (including deafness), or orthopedic impairment are significantly more likely to be full-time students than to be working while living at home or

establishing their own family. ¹¹ Alternately, compared to those with a learning disability, young women who are mentally retarded or who have multiple disabilities are much more likely to be very dependent than to be full-time students. Those with multiple disabilities often have an especially debilitating combination of disabilities that makes many activities extremely difficult without continuous assistance. These results support the view that mental retardation or having multiple disabilities may function as a master status and significantly impede the ability of individuals to move into statuses that are part of the usual transition from late adolescence to early adulthood.

However, aside from type of disability (and age), none of the other independent variables predict assignment to a latent class for the NLTS sample. The effects of race and ethnicity, family income, family structure, and number of siblings are statistically insignificant and are outweighed by the effects of type of disability. These findings stand in contrast to those from previous research, but they reflect the fact that we have analyzed outcomes among a sample of youth with disabilities and that disability and type of disability appear to be the factors that dominate these youths' transitions to adulthood.

Contrary to results discussed above, type of disability is not a significant predictor of latent class membership among women in the NELS who reported having a disability. Women with various types of disabilities are neither more nor less likely than those with learning disabilities to be establishing a family rather than to be a full-time student. Family income, however, does exert significant effects on transitions to adulthood. The higher the family income, the more likely one is to be a full-time student rather than to be assuming family roles. Other than family income, none of the independent variables are shown to significantly affect latent class membership among members of this sample.

Among young women in the NELS who did not report a disability, family income exerts a statistically significant effect on latent class membership, consistent with findings uncovered in the NELS sample of women who did report being **[End Page 819]**

**Logistic
Regression**

Click for larger
view

Table 4

Logistic Regression Analysis of Possible Factors Associated with Latent Class Membership, Women

[End Page 820]

Logistic
Regression

Click for larger
view

Table 4 (Continued)

Logistic Regression Analysis of Possible Factors Associated with Latent Class Membership, Women

[End Page 821]

disabled. The higher the family income, the more likely women without disabilities are to be full-time students rather than to be living at home and working, pursuing traditional family roles, or mixing family with work. In addition, race and ethnicity, family structure, and number of siblings are shown to significantly predict latent class assignment among these women — findings that are completely at odds with those uncovered among female NELS respondents who reported a disability. Controlling for the effects of other variables, Hispanic women are 2.1 times more likely than white women to be starting families than to be full-time students. Conversely, black women are 5.6 times more likely than their white counterparts to be full-time students than to be mixing family with work. Finally, respondents raised in two-parent families and those growing up with two siblings or fewer are significantly more likely to be full-time students than to be living at home and working, establishing their own family, or mixing family with work.

Many of the same general patterns discussed above are uncovered in the analysis of men. Relative to respondents in the NLTS with a learning disability, those with a speech impairment, visual impairment, hearing impairment (including deafness), orthopedic impairment, or other impairment are more likely to be full-time students than to be working while living at home or mixing family with work. In addition, compared to those with a learning disability, young men with a visual impairment or hearing impairment (including deafness) are significantly less likely to be very dependent than to be full-time students, while those who are mentally retarded or who have multiple disabilities are more likely to be very dependent than to be full-time students. Once again, type of disability in the NLTS sample strongly affects youths' transitions to adulthood, whereas race and ethnicity, family income, family structure, and number of siblings do not. These findings indicate that disability and type of disability are powerful determinants of outcomes, although these factors generally have not been considered in previous research on outcomes. Some of the most debilitating forms of disabilities, such as severe mental retardation or multiple disabilities, may act as a master status in their influence on the early transition to adulthood. A small minority of individuals with disabilities are never able to make any of the transitions normally associated with the early transition to adulthood and independence. In addition, our findings imply that traditional models of stratification and findings from previous research may not apply to youth with disabilities. We will return to these ideas while analyzing data from NELS respondents who did and did not report a disability.

Contrary to the corresponding results for women, type of disability does affect assignment to latent classes among men in the NELS who reported having a disability. As shown in [Table](#)

5, relative to men with a learning disability, men with a speech impairment, visual impairment, or other physical disability are significantly more likely to be full-time students than to be living at home and working. However, after utilizing the Bonferroni procedure, type of [End Page 822] disability does not significantly differentiate full-time students from those mixing family with work.

Once again, coefficients for family income are statistically significant. The higher the family income, the greater the likelihood of being a full-time student rather than living at home and working or mixing family with work. Aside from type of disability and family income, none of the other independent variables predict assignment to a latent class.

An interesting pattern has emerged consistently across the four samples of disabled youth included in the analysis. Disability type and family income (at least among NELS respondents) are the only factors that emerge as significant determinants of young people's transitions to adulthood. Race and ethnicity, family structure, and number of siblings demonstrate weak independent associations with transitions to adulthood among youth with disabilities.

Finally, as seen in [Table 5](#), several demographic and socioeconomic variables significantly affect the assignment of men without disabilities to the various latent classes. Race and ethnicity, family income, family structure, and number of siblings are each significantly associated with latent class membership. For instance, relative to white males, black males are 1.7 times more likely to be full-time students than to be living at home and working, but, at the same time, they are also 3.6 times more likely than their white counterparts to be disengaged than to be full-time students. Finally, consistent with patterns uncovered in the female data, respondents raised in two-parent families, those growing up with two siblings or fewer, and those from more affluent households are more likely to be full-time students than to be living at home and working or mixing family with work. They are also more likely to be full-time students than to be part of that small group of individuals who have not made any of the transitions to adulthood (except for fathering children).

In summary, the regression analysis reveals crucial differences in the ways that family resources can impact the transition to adulthood. On one hand, among young adults without disabilities, family income, race and ethnicity, family structure, and number of siblings each emerge as significant determinants of outcomes, consistent with findings from previous research. On the other hand, among young adults with disabilities, results show that outcomes are strongly influenced by type of disability and by family income (among NELS respondents). However, for these individuals, none of the other demographic or socioeconomic factors considered in the analysis emerge as significant predictors of outcomes — in other words, the effects of disability and type of disability outweigh the effects of race and ethnicity, family structure, and number of siblings. Thus, not only have we uncovered differences in outcomes and frequencies of outcomes between youth with and without disabilities, but we have also uncovered differences in the determinants of outcomes between these two groups. ¹² [End Page 823]

**Logistic
Regression**

Click for larger
view

Table 5

Logistic Regression Analysis of Possible Factors Associated with Latent Class Membership, Men

[End Page 824]

**Logistic
Regression**

Click for larger
view

Table 5 (Continued)

Logistic Regression Analysis of Possible Factors Associated with Latent Class Membership, Men

[End Page 825]

Conclusions

Individuals with disabilities constitute a considerable minority within the American population, and students with disabilities make up a sizable and highly visible proportion of the population of many public schools. Substantial efforts have been directed in recent years toward enhancing the ability of public and private schools to educate these individuals, and the federal government has mandated that both schools and employers make efforts to accommodate individuals with disabilities so that they can complete their educations, become gainfully employed, and participate fully in adult life. Yet sociologists have paid little attention to this group or to their transition from school and adolescence to adulthood.

Although previous attempts to model adolescent outcomes have generally not considered the impact of disability, we find that disability and type of disability play important roles in predicting socioeconomic and personal outcomes. Our analysis demonstrates important substantive differences between youth with and without disabilities in statuses achieved after the high school years. These differences reflect the special challenges and barriers faced by youth with disabilities. Roughly 40% of the women and men in special education are in a latent class consisting largely of single individuals living at home and not involved in education or employment outside the home. For these individuals, having a disability has prevented them from achieving any of the statuses that are associated with the early transition to adulthood. And although a substantial number of individuals with disabilities are working, have begun families, and have pursued postsecondary education, they are doing so to different degrees relative to individuals without disabilities.

Disability and type of disability profoundly impact youths' early steps toward adulthood, and among young persons with disabilities, the effects of disability and type of disability greatly overshadow those of race and ethnicity, family structure, and number of siblings. Young men and women with mobility and sensory disabilities are more likely than those with learning disabilities to pursue at least some postsecondary education. Our data do not allow us to explore the mechanisms that account for this difference, but it is likely that the efforts of postsecondary educational institutions to accommodate individuals with disabilities that do not affect their performance in the classroom account for the ability of many individuals with mobility and sensory disabilities to attend college. Although colleges also try to accommodate individuals with learning disabilities such as dyslexia, some learning disabilities may be severe enough to impede the ability of individuals to succeed in the classroom. Those who are mentally retarded and who have multiple disabilities are most likely to become totally dependent on their families without taking on normative adult roles. Although a number of programs and organizations attempt to create employment opportunities for the mentally retarded and those with multiple disabilities, persons with severe mental retardation or especially **[End Page 826]** debilitating multiple disabilities may be able to find few jobs or other adult roles in which they can function effectively. Such findings are quite different from those based on analyses of youth without disabilities, and they carry with them the very important implication that previous research on adolescent outcomes and traditional models of stratification may not apply to youth with disabilities. Family socioeconomic resources have a smaller impact on the transition to adulthood of adolescents with disabilities than they do for adolescents without disabilities. This finding suggests that the ability of families to transfer socioeconomic status across generations is impeded if the child has a disability. Among the factors we investigated, only family income had an effect on attending college and other transitions.

The results imply that disabilities may play an important role in the intergenerational transmission of status. Higher-status families may have more difficulty ensuring the adult well-being of a child with disabilities than a child without disabilities. The presence of one of the more severe disabilities appears to substantially impede the ability of a family to invest in the education and work skills of a child, which is one of the main ways that families pass on their status. Further, the transmission across generations of disabilities that have a genetic component will undoubtedly make it very difficult for a family to attain or maintain a secure economic position across generations. Thus, our research suggests that the broader study of the intergenerational transmission of inequality should consider the role of disabilities in this process.

Sociologists should pay more attention to the barriers to full participation in society faced by individuals with disabilities. An important social goal is to have as many adults as possible be economically and socially productive for as long as possible. In order to achieve this goal, significant efforts have been made to erase the barriers to full participation for women, racial and ethnic minorities, and the elderly, and sociologists have devoted considerable energy to investigating the extent to which these barriers have been reduced. More recently, our society has made significant efforts to tear down barriers facing individuals with disabilities. Legislation has been passed with the purpose of providing greater inclusion and participation in society.

The Individuals with Disabilities Education Act, ¹³ passed in 1975 and amended as recently as 1997, is intended to improve the educational opportunities and educational results of children with disabilities and eventually to prepare them for employment, independent living, and economic self-sufficiency. Specifically, public schools are required by law to provide children with disabilities a free public education and to provide services appropriate to individual needs. The act and its amendments have also underscored the importance of diagnosing disabilities, have emphasized greater integration into the general educational curriculum, and have required public school systems to develop an individual education program for each individual child with a disability. These programs are tailored to each individual **[End Page 827]** student and include specific educational goals, the services to be provided, and a statement of the student's performance.

In addition, the Americans with Disabilities Act of 1990 has greatly increased opportunities for participation in society by prohibiting discrimination on the basis of disability in employment and employment practices and by requiring access to government programs, services, and activities; commercial facilities; public accommodations; and public transportation. The law mandates that employers make reasonable accommodations for individuals with disabilities and that buildings be made physically accessible to ensure that persons with disabilities have access to employment opportunities, government services, public accommodations, and commercial facilities.

Both the Individuals with Disabilities Education Act and the Americans with Disabilities Act have facilitated the ability of children and adults with disabilities to participate more fully in several aspects of social and economic life. Sociologists should begin to examine the extent to which individuals with disabilities have been able to live independently, pursue postsecondary education, and be gainfully employed.

During the past two decades, dramatically increased expenditures to establish individual education programs suitable for children with disabilities have occurred as a direct result of public policy decisions to integrate these children into regular schools. To a similar but much less extensive degree, public policy and individual employer practices (special vocational training, modification of the workplace, and public subsidies for employing the disabled) have enabled young adults with disabilities to assume paying jobs. It is not clear what we can or should do about young adults with the most severe disabilities. They are not in a position to take advantage of many of the opportunities now available in schools or in the labor market. Our ability to enhance the lives of many individuals with disabilities illustrates the way in which nonmedical interventions can help deal with significant medical problems. Yet our current package of nonmedical interventions does little to fully incorporate individuals with the most severe disabilities into a robust adult life. There are limits to using social interventions to alleviate medical problems.

Our results show that there is still a long way to go before individuals with disabilities are fully integrated into American society. One step toward this integration is more analyses of their life course, the ways in which different disabilities have an impact on the life course, and of our efforts as a society to assist individuals with disabilities. It is incumbent on

sociologists to fully integrate this minority into our themes and research. **[End Page 828]**

* *This project was supported by funds from the Spencer Foundation and the NICHD Network on Family and Child Well-Being. Direct all correspondence to Thomas Wells, Population Studies and Training Center, Box 1836, Brown University, Providence, RI 02912. E-mail: Thomas-Wells@brown.edu.*

Endnotes

1. Following the convention in most social science research on people with disabilities, we use the terms "disabilities" and "impairments" interchangeably. However, the National Advisory Board on Medical Rehabilitation Research defines an impairment as "the loss or abnormality of cognitive, emotional, physiological, or anatomical structure or function, including all losses or abnormalities," and a disability as "the inability or limitation in performing tasks, activities, and roles to levels expected in physical and social contexts." Thus, impairment may potentially lead to disability, but not necessarily. Our focus is on the effects of impairments on the transition to adulthood.
2. An extensive search of the *Annual Review of Sociology* and the 2000 edition of the *Encyclopedia of Sociology* revealed almost no mention of persons with disabilities at this critical life stage.
3. The data used in this article do not permit us to examine the effectiveness of school-based and other programs in assisting young people with disabilities in the years just after high school. Our data do not allow us to deal with a major selection problem: the adolescents using the most services are those with the most severe disabilities and the most negative outcomes. Given our inability to deal with this selection problem, we reluctantly dropped the service and program items from the analysis.
4. Respondents with missing data on any of the five outcome measures were excluded from the analysis. There were 451 such respondents in the NLTS, 101 in the NELS who reported a disability, and 529 in the NELS who did not report a disability.
5. As mentioned earlier, the two samples being analyzed are comprised of young people who are in the process of making various transitions to adulthood. Given the relatively young age of respondents, certain transitions (particularly those to marriage and parenthood) will not have been made at the time of the last follow-up but will likely be made sometime in the future.
6. The disability categories used in the sets of data are as follows:

NLTS	NELS
Learning disability	Learning disability
Emotional disturbance	Emotional disturbance
Speech impairment	Speech impairment
Visual impairment	Visual impairment
Hearing impairment	Hearing impairment
Deafness	Deafness
Orthopedic impairment	Orthopedic impairment
Other health impairment	Other
Deaf-blindness	Other physical disability
Mental retardation	
Multiple disabilities	

Due to the very small number of cases, deaf-blind respondents in the NLTS were grouped together with those in the multiple disability category and deaf respondents in the NELS were dropped from the analysis. **[End Page 829]**

7. Parent's educational attainment was not included in the regression equations because such a variable is not contained in the NLTS public-use data set.

8. Following techniques used earlier by Birkelund, Goodman, and Rose (1996), we tested for homogeneity by imposing equality constraints on models for men and women. However, results show that the homogeneous models provide a relatively poor fit to the data.

9. According to Raftery (1995), when comparing models, a difference in BIC of less than 2 constitutes weak evidence for the acceptance of one model over another. Nonetheless, the model with the smaller BIC value is to be preferred.

10. In [Table 4](#), results for female NELS respondents who reported a disability are based on a binomial logit model, owing to the fact that only two classes emerge from the latent class analysis.

11. During the regression analysis, we utilize the Bonferroni procedure, which takes into account multiple contrasts being performed in the analysis. As a consequence of utilizing this procedure, larger t-values are required to consider regression coefficients statistically significant. Thus, we are being conservative when testing for statistical significance and are being careful not to commit Type I errors. In [Tables 4](#) and [5](#), a dagger is used to denote the regression coefficients that are no longer considered statistically significant at the .05 level once the procedure has been applied.

12. With regard to regression results, it is worth noting that, aside from the fact that we have analyzed slightly different sets of latent classes for men and women, the factors affecting assignment to various latent classes are generally similar for these two groups.

13. The act was originally named the Education for All Handicapped Children Act.

References

Agresti, Alan. 1990. *Categorical Data Analysis*. Wiley.

Albrecht, Gary L., Katherine D. Seelman, and Michael Bury (eds.). 2001. *Handbook of Disability Studies*. Sage Publications.

Altman, Barbara M. 2001. "Definitions of Disability, and Their Operationalization, and Measurement in Survey Data: An Update." Pp. 77-100 in *Exploring Theories and Expanding Methodologies: Where We Are and Where We Need to Go*, edited by Sharon N. Barnartt and Barbara M. Altman. JAI Press.

Arnett, Jeffrey J. 1998. "Learning to Stand Alone: The Contemporary American Transition to Adulthood in Cultural and Historical Context." *Human Development* 41:295-315.

Barnartt, Sharon. 2001. "Using Role Theory to Describe Disability." Pp. 53-75 in *Exploring Theories and Expanding Methodologies: Where We Are and Where We Need to Go*, edited by Sharon N. Barnartt and Barbara M. Altman. JAI Press.

Barnartt, Sharon N., and Barbara M. Altman (eds.). 2000. *Expanding the Scope of Social Science Research on Disability*. JAI Press.

———. 2001. *Exploring Theories and Expanding Methodologies: Where We Are and Where We Need to Go*. JAI Press. **[End Page 830]**

Birkelund, Gunn Elisabeth, Leo A. Goodman, and David Rose. 1996. "The Latent Structure of Job Characteristics of Men and Women." *American Journal of Sociology* 102:80-113.

Blackorby, Jose, and Mary Wagner. 1996. "Longitudinal Postschool Outcomes of Youth with Disabilities: Findings from the National Longitudinal Transition Study." *Exceptional Children* 62:399-413.

Blake, Judith. 1989. *Family Size and Achievement*. University of California Press.

Clogg, Clifford C. 1995. "Latent Class Models." Pp. 311-60 in *Handbook of Statistical Modeling for the Social and Behavioral Sciences*, edited by Gerhard Arminger, Clifford C.

Clogg, and Michael E. Sobel. Plenum Press.

Fujiura, Glenn T., and Violet Rutkowski-Kmitta. 2001. "Counting Disability." Pp. 69-96 in *Handbook of Disability Studies*, edited by Gary L. Albrecht, Katherine D. Seelman, and Michael Bury. Sage Publications.

Furstenberg, Frank F. 2000. "The Sociology of Adolescence and Youth in the 1990s: A Critical Commentary." *Journal of Marriage and the Family* 62:896-910.

Hauser, Robert M. 1993. "Trends in College Entry among Whites, Blacks, and Hispanics: 1972-1988." Pp. 61-104 in *Studies of Supply and Demand in Higher Education*, edited by Charles T. Clotfelter and Michael Rothschild. University of Chicago Press.

Hauser, Robert M., and Hanam Samuel Phang. 1993. "Trends in High School Dropout among White, Black, and Hispanic Youth, 1973 to 1989." Discussion Paper no. 1007-93. Institute for Research on Poverty, University of Wisconsin-Madison.

Hogan, Dennis P., and Nan Astone. 1986. "The Transition to Adulthood." *Annual Review of Sociology* 12:109-30.

Hogan, Dennis P., and Michael E. Msall. 2002. "Family Structure and Resources and the Parenting of Children with Disabilities and Functional Limitations." Pp. 311-27 in *Parenting and the Child's World: Influences on Academic, Intellectual, and Social-Emotional Development*, edited by John G. Borkowski, Sharon L. Ramey, and Marie Bristol-Power. Lawrence Erlbaum.

Hogan, Dennis P., Michael E. Msall, Michelle L. Rogers, and Roger Avery. 1997. "Improved Disability Population Estimates of Functional Limitation among American Children Aged 5-17." *Maternal and Child Health Journal* 1:203-16.

Hogan, Dennis P., Michelle L. Rogers, and Michael E. Msall. 2000. "Functional Limitations and Key Indicators of Well-Being in Children with Disability." *Archives of Pediatrics and Adolescent Medicine* 154:1042-48.

Horn, Laura, Jennifer Berkold, and Larry Bobbitt. 1999. *Students with Disabilities in Postsecondary Education: A Profile of Preparation, Participation, and Outcomes*. U.S. Department of Education, National Center for Educational Statistics, NCES 1999-187.

LaPlante, Mitchell P., and Dawn Carlson. 1996. *Disability in the United States: Prevalence and Causes, 1992. Disability Statistics Report (7)*. U.S. Department of Education, National Institute on Disability and Rehabilitation Research.

Maddala, G.S. 1983. *Limited-Dependent and Qualitative Variables in Econometrics*. Cambridge University Press.

Marder, Camille, and Ronald D'Amico. 1992. *How Well Are Youth with Disabilities Really Doing? A Comparison of Youth with Disabilities and Youth in General*. SRI International.

McCutcheon, Allan L. 1987. *Latent Class Analysis*. Sage Publications. **[End Page 831]**

McLanahan, Sara, and Gary Sandefur. 1994. *Growing Up with a Single Parent: What Helps? What Hurts?* Harvard University Press.

Priestley, Mark. 2001. *Disability and the Life Course: Global Perspectives*. Cambridge University Press.

Raftery, Adrian E. 1995. "Bayesian Model Selection in Social Research." *Sociological Methodology* 25:111-63.

Shanahan, Michael J. 2000. "Pathways to Adulthood in Changing Societies: Variability and Mechanisms in Life Course Perspective." *Annual Review of Sociology* 26:667-92.

Tisdall, Kay. 2001. "Failing to Make the Transition: Theorising the 'Transition to Adulthood' for Young Disabled People." Pp. 167-78 in *Disability and the Life Course: Global Perspectives*, edited by Mark Priestley. Cambridge University Press.

U.S. Department of Education. National Center for Education Statistics. 2001. *Digest of Education Statistics*. Government Printing Office.

Wagner, Mary, Jose Blackorby, Renee Cameto, and Lynn Newman. 1993. *What Makes a Difference? Influences on Postschool Outcomes of Youth with Disabilities: The Third Comprehensive Report from the National Longitudinal Transition Study of Special Education Students*. SRI International.

Westat. 2000. "Measurement of Activity Limitation among Children: An Analysis of National Surveys." Paper presented at the Measurement Workshop on Child Disability, Washington, D.C.

[\[Project\]](#) [\[Search\]](#) [\[Journals\]](#) [\[Journal\]](#) [\[Contents\]](#) [\[Top\]](#) |