Stability and Change in the Transition to Adulthood:

Latent Structure Analysis of Three Generations in the National Longitudinal Surveys

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The transition to adulthood in the United States has had the attention of life course researchers at least since Coleman's classic study on adolescence published in 1961. Today, researchers view this transition as an increasingly problematic enterprise. Scholars from a variety of disciplines have commented on increasing deviation from "traditional," "normative," "optimal," or "orderly" patterns in the sequence, order, and timing of life transitions (Arnett 2000; Booth, Crouter and Shanahan 1999; Buchmann 1989; Furstenberg et al. 2004; Rindfuss, Swicegood and Rosenfeld 1987; Schneider and Stevenson 1999; Shanahan 2000). For some, the transition to adulthood in contemporary society is characterized by difficult or unclear connections between institutions (Booth et al. 1999; Kerkoff 2002; Mortimer and Kruger 2000; Schneider and Stevenson 1999). Others highlight economic and cultural conditions that inhibit or undermine the successful acquisition and execution of adult social roles (Buchmann 1989; Hill and Yeung 1999; Oppenheimer and Lewin 1999; Schoon and Silbereisen 2009; Shanahan 2000). Still others draw attention to increased overlap of adolescent and adult roles and the degree to which individuals occupy multiple social roles simultaneously (Arnett 2000; Buchmann 1989; Modell, Furstenberg, and Hershberg 1976; Schneider and Stevenson 1999). There is also speculation of growing social differentiation both within and across race, class, and gender that may foster or exacerbate inequalities (Brayboy-Jackson and Berkowitz 2005; Furstenberg 2003; Shanahan 2000). All this has led to increased attention and concern over the nature and consequences of the transition to adulthood in contemporary Western society (Booth et al. 1999; Furstenberg 2003; Macmillan 2005; Rindfuss et al. 1987; Shanahan 2000), as well as debate about the 'individualization' of the life course and its theoretical and empirical implications (Bruckner and Mayer 2005; Buchman 1989; Meyer 1986; Shanahan 2000).

The perceived transformations of the transition to adulthood provide unique opportunities for theoretical and methodological advance. To this end, this research extends work in three ways. First, we articulate a perspective on the life course that emphasizes the interlock of multiple role trajectories as the key feature of the sociodemographic life course. Second, we elaborate the utility of a latent class cluster approach as an empirical lens on this conceptual framework. This approach characterizes the life course in terms of heterogeneity in discrete, probabilistic pathways defined by the interlock of roles and role trajectories over time. Third, we use this approach to examine SES-race-gender variation in pathways into adulthood for three generations of Americans whose transition to adulthood occurred at different points in a forty-year period, *although for the purposes of this abstract we focus on a single generation to showcase the utility of our empirical approach*. As we know of no work that empirically models the life course as a multidimensional, dynamic process, examines the joint influence of SES, race and gender on the ways in which individuals move into adulthood, and considers such things in the context of ongoing social change, our research provides a unique and fruitful lens on a particularly significant stage of the life course.

Transition to Adulthood in Modern US Society

Theory and research on the transition to adulthood can be characterized by two more or less distinct traditions. At one level, research examines aggregate populations and the degree to which they exhibit specific patterns of social roles over the life span. As Hogan and Astone (1986) argue, the transition to adulthood is a population-level phenomenon shaped by cultural and institutional forces. From this perspective, societies or social groups can be characterized and differentiated by the aggregate pattern of life transitions. A second approach emphasizes

individual differences in the timing and order of roles. Shanahan (2000) argues for a developmental approach to the life course that directs attention to the means by which people formulate and pursue goals in the context of specific institutional settings (see also Mortimer and Kruger, 2000). These contexts constitute the arenas in which human agency is exercised and provide circumstances that both enable and constrain the realization of life course aspirations. From this perspective, the life course is a realization of expressions of human agency embedded in given societal contexts (Elder 1994).

Against this backdrop, traditional research on the transition to adulthood proposed both a normative structure and a set of social conditions that were productive of that structure. Hogan (1978) in a particularly influential paper argued that the transition to adulthood occurs in a "socially prescribed fashion" (p. 574) that involved the finishing of formal schooling, the acquisition of financial independence through full-time work, and the formation of a family of procreation through marriage and later child rearing. This view reflected two issues. First, there appeared to be some statistical regularity in the order and timing of roles in the transition to adulthood (Hogan 1978, 1980). Second, there appeared to be cultural proscriptions regarding the appropriate order and timing of events in the life course (Elder 1974; Fry and Keith 1982; Hogan 1980; Neugarten and Datan 1973; Neugarten, Moore, and Lowe 1967; Settersten and Mayer 1997; see also discussion in Marini 1984b).

Research of the past few decades, however, challenges the image of orderly, normative movement from adolescence to adulthood. For example, Marini's (1984a) 15 year follow-up of Coleman's (1961) original sample of youths in 10 Illinois high schools found that the "normative" sequence of school, work, marriage, and childrearing characterizes only 40 percent of the females and 37 percent of the males. Adopting a slightly different strategy, Rindfuss and

colleagues' (1987) analysis of data from the *High School Class of 1972* revealed that over 1100 sequences of roles were necessary to describe the transition to adulthood for 6700 males. Over 1800 sequences were required to describe the transitions among the 7000 females. Two decades later, Brayboy-Jackson and Berkowitz's (2005) analysis of data from the National Survey of Families and Households showed similarly wide variation in role sequences and further highlighted gender and race as important contingencies in the structuring of the life course.

Efforts to understand such variability focus attention on structural and cultural factors that fragment traditional institutional mechanisms that link adolescent and adult social roles. Kohli (1986), for example, argues that rationalization of economy and civil society, particularly the organization of public services, increase variability in the order and timing of social roles that characterize adulthood (see also Buchmann 1989). Similarly, Booth and colleagues' (1999) describe how changing economic conditions make modern transitions across a number of domains precarious. Likewise, Schneider and Stevenson (1999) emphasize the disjuncture between aspirations of contemporary adolescents and the (unaccommodating) structural and institutional environments of the post-industrial world to account for the often fragmentary and fractured transitions from school to work and family. Buchmann (1989), in perhaps the broadest and most far reaching statement on the issue, argues that standardized trajectories of school, work, and family have been "shattered" by weakened links between education and occupational status, decreased long-term viability of occupational expertise and experience, family instability, and a culture that increasingly emphasizes flexibility, choice, and change. The end result is a life course that is characterized by a "decompression" of transition markers (Shanahan 2000), increased overlap of social roles (Modell and Goodman 1990), and greater variability in the sequencing of transition markers (Buchmann 1989; see also Marini 1984a; Rindfuss et al. 1987).

Moreover, such views have generated the concepts of 'individualization,' along with 'de-standardization' and 'de-institutionalization,' to describe the situation (*Annals of the American Academy of Political and Social Science* 2002; Berger Steinmuller and Sopp 1993; Brannen and Nilsen 2002; Bruckner and Mayer 2005; Cote 2002; Fussell and Furstenberg 2005; Macmillan 2005; Marshall, Heinz, Kruger and Verma 2001; O'Rand and Henretta 1999; Schoon and Silbereisen 2009; Shanahan 2000). Still, there have been few direct examinations of this thesis on the structure of the life course, particularly with respect to the multiple interlocked trajectories of school, work, marriage, and parenthood that are widely viewed as the key roles and bases for role transitions in the unfolding life span. Moreover, there has been no effort to develop a theoretical framework that would speak to the multi-level dynamics at the heart of existing arguments. As a result, we know less than we should about the structure of the life course in contemporary society and the relative merits of current conceptualizations.

Analytic Strategy

Building upon earlier work (Macmillan and Copher 2005; Macmillan and Eliason 2003), the analytic strategy that we use is latent class analysis. Latent class analysis is a statistical technique used to classify individuals based on a set of categorical indicators (Clogg 1995; Goodman 1974; Hagenaars and McCutcheon 2002; Lazarsfeld and Henry 1968; Magidson and Vermunt 2004). Here, the underlying assumption is that individuals belong to classes that are latent or unobserved but for which observed indicators provide information sufficient for classification. Classification is achieved through maximum likelihood estimation usually using an expectation-maximization (EM) algorithm (Vermunt and Magidson 2005b). In traditional latent class analysis, the structure of the associations between observed indicators is completely

explained by the latent factors. This conditional independence assumption dictates that observed indicators are statistically independent conditional on their association with the unobserved, latent variable.

In a latent class framework with multiple indicator variables indexing distinct roles, life course pathways and trajectories can be represented by a series of nominal vectors indicating the simultaneous occurrence of particular social roles. For simplicity, we can assume that there are i subjects, j=1,...M social roles (e.g., in school, full-time work, married, etc.), p = 1,…P, pathways (e.g., school-to-work), and t =1, …, T ages. The conditional likelihood for each subject is:

$$P(y_{i11}, y_{i12}, \ldots, y_{iMT} \mid p_i = p) = \prod_{t=1}^{T} \prod_{j=1}^{M} \pi_{pjt}^{yijt} (1 - \pi_{pjt})^{1-y_{ijt}}, \qquad (1)$$

where π_{pjt} is the probability for the jth role =1 at time t for pathway p that is constrained to be between zero and one by logit transformation.

From a theoretical standpoint, this model does not incorporate any assumptions of the lag structure between variables and hence does not parameterize the time correlation between variables. In some cases, this might be viewed as problematic. In a life course context, if not the broader field of research on socio-demographic roles, such a view seems appropriate given a) that most social roles are reversible with the noted exception being parenthood and hence time correlation is an empirical issue rather than an a priori assumption; b) that age-specific associations between role states would be expected to vary across ages and hence a priori specification of latent classes (e.g., fixing all ages to have the same number or same type of classes) is theoretically and empirically unjustified; and c) there is not a well-developed body of theory that would provide sufficient guidance on how to specify the (literally hundreds of) possible lagged associations in even simple longitudinal panels. The latent class cluster approach provides a parsimonious accounting of within-age and across-age associations between roles that

do not involve strong assumptions about the nature of such associations. As different data will have unique patterns of within-age and across-age associations, researchers should inspect model-specific bivariate residuals that provide an indication of how well the model fits across the entirety of the data and what types of associations are well-represented or less well-represented by the latent class model. All models were estimated using Latent Gold 4.5 (Vermunt and Magidson 2005a).

Quantities of Interest

A latent class approach yields a number of quantities that have substantive importance in modeling life course dynamics. First, goodness-of-fit statistics provide guidance on the optimal number of pathways into adulthood and hence are evidence on the extent of heterogeneity in such pathways. In a comparative context, this reveals group differences in the complexity of life course structures. Equally important, indications of the number of pathways into adulthood also speak to questions about how 'individualized' the contemporary life course is. Given that such arguments almost universally imply extensive heterogeneity in pathways (Bruckner and Mayer 2005; Buchman 1989; Shanahan 2000), one would expect that a one class model would provide the best fit to the data in the case that the transition to adulthood were truly unanchored from institutions of schooling, work, and family or that there would be an successively higher and higher number of classes that progressively improved fit to the data. Both of these expectations can be directly assessed through an inspection of goodness of fit statistics.

A second set of quantities is the latent class probabilities. In statistical terms, these indicate the estimated population probability and index variation in the estimated prevalence of particular pathways. In theoretical terms, these can also be viewed as an indicator of the variable

legitimacy of pathway schema both within and across populations. Latent class probabilities are thus useful for understanding what pathways are more or less salient and prevalent within a population and how particularly pathways have variable salience and prevalence. These also have direct relevance for debates and discussion over the 'individualization' of the life course and general concerns about elongated transitions, a lack of connection between roles, and general disorder in the life course in that we can directly assess the prevalence of such pathways were they to emerge in the latent classes. Strong versions of existing arguments would anticipate either a single hegemonic class (with a probability close to 1.0) in the case of null fit to the data or would anticipate a large number of classes with equally small estimated prevalence. Both theses can be directly tested by inspection of latent class probabilities.

Finally, conditional probabilities indicate the estimated age-specific probability of a given role conditional on latent pathway. These probabilities are a direct operationalization of the structure of embeddedness we described earlier and index the within-age association of social roles, across role trajectories, and the interlock of such trajectories within a given pathways. Essentially, these describe the multidimensional unfolding of the social roles in the transition to adulthood and reveal the distinct pathways out of adolescence. Moreover, given that the pathways themselves are latent, that is unobserved, these are a direct analog to the pathway schema that is a core feature of a structure theory of the life course outlined earlier. Such probabilities also speak to contemporary debates in that they show the actual role structure of a pathway and hence index the degree of role compression, the connections between role trajectories, the reversibility of role states, and all other descriptors that have been associated with an 'individualized' life course.

Research Questions

Against this backdrop, we pursue three research questions:

1) How many pathways characterize the transition to adulthood for American women and men transitioning into adulthood and how, if at all, has this changed over time?
2) What are the core features of distinct pathways in terms of the prevalence of particular pathways and the timing and ordering or roles in the transition to adulthood and how, if at all, has this changed over time?
3) What role do SES, race and gender play in the structuring of pathways into adulthood and how, if at all, has this changed over time?

In answering these questions, we explicitly contribute to broad inquiries into the nature of inequalities in American society and the interactions of social stratification and the unfolding life course as a vehicle for producing and reproducing inequalities across generations and over time. ***For the purposes of illustration, this submission focuses on a demonstration of our approach using data from a single generation (described below), while the presentation at PAA will involve comparative analysis of three generations***.

Data and Measures

To examine the transition to adulthood through the latent pathway models described above, we use data from the 1979 National Longitudinal Survey of Youth (hereafter NLSY79). The NLSY79 is a national sample of 12,686 young men and women who were 14 to 22 years of age in 1979. Beginning in 1979, respondents were interviewed annually through 1994 and then bi-annually thereafter. A unique advantage of the NLSY79 is its low attrition rate; sample

retention is close to 90% for those considered eligible for interview (US Department of Labor 2000). For the purposes of examining the transition to adulthood, we focus on the age span of age 17 to age 25. This time frame allows us to consider respondents as adolescents through to early adulthood. Although there are interesting discussions about the current age range that captures the transition to adulthood (see for example, Furstenberg et al 2004; Settersten, Furstenberg and Rumbaut 2005), the last age is past the point at which individuals (traditionally) would have completed higher education, if they had pursued it, hence would have been positioned for movement into full-time work, marriage, parenthood, and independent living. It is also an age at which few, if any, individuals in American society would be considered adolescents (Coleman et al. 1974). Still, we recognize that the length of time it takes contemporary adolescents to move into adult social roles is part of contemporary debates about the structure of the life course and hence use an analytic strategy that allows us to see precisely the probability of each role adopted by age 25 that speak directly to questions about the length of time it takes to transition into adulthood in any given pathway.

We increase our statistical power by combining four adjacent birth cohorts, those who were 17 years old in 1979 with a longitudinal panel spanning 1979 to 1987, 16 years old in 1979 with a longitudinal panel spanning 1980 to 1988, 15 years old in 1979 with a longitudinal panel spanning 1981 to 1989, and 14 years old in 1979 with a longitudinal panel spanning 1982 to 1990. This allows us to consider greater heterogeneity in pathways into adulthood and facilitates examination of social differentiation across race and gender. At the same time, these cohorts are closely related in historical time and thus are unlikely to have experienced unique cohort or period effects that could impact upon the transition to adulthood. Still, we were attentive to possible differences across cohorts due to either specific life experiences or variation in panel

attrition and examined mean differences on a host of theoretical relevant variables (e.g., family background, socioeconomic origins, educational attainment, age-specific likelihood of educational, occupational, and family transitions). For the vast majority of measures, differences were not statistically significant and even in the cases where there were statistically significant differences, magnitudes were trivial at best and statistical significance did not hold when we applied a Bonferroni correction for repeated assessments.

It is worth noting that the NLSY79 cohorts that we study experienced the wide array of socio-institutional change that scholars have associated with the 'individualization' of the life course (see discussions in Bruckner and Mayer 2005; Buchmann 1989; Macmillan 2005; Shanahan 2000). Although there are many aspects, the most notable involve a) the expanding population of post-secondary students that accelerated in the late 1960s, 1970s, and 1980s (Schofer and Meyer 2005), b) increased economic and occupational instability that began with the 1973 oil crisis and both undermined the quality and stability of long-term employment and eroded incomes (Booth et al. 1999), c) escalating costs of housing that increased the difficulty in establishing a residence independent of one's family of origin, d) the liberalization of sex norms beginning in the 1960s and 1970s that altered social conventions around marriage and parenthood (Treas 2002), and e) the increased prevalence of family disruption following the "divorce revolution" of the 1970s (Weitzman 1985). All these factors have been identified as key aspects of socio-institutional change in the United States that are seen to have transformed the transition to adulthood. Importantly, the NLSY79 cohorts were also among the first to experience them as a set and hence are a key population to study for understanding the transition to adulthood in contemporary America.

We measure observed roles in terms of those widely viewed as key markers in the transition to adulthood that are related to major social institutions in Western societies (Booth et al. 1999; Buchmann 1989; Elder 1974; Hogan and Astone 1986; Shanahan 2000). At each age between 17 and 25, we index schooling, work, marriage, parenthood, and independent living. Each is measured to reflect whether an individual experiences a given role at a given age. We measure the student role by whether the respondent is in school or not at each age. Work roles are measured during each interview year by whether the respondent is engaged in full-time work (35 or more hours per week) during the survey week and transformed to age-specific measures. Marital roles are measured in terms of whether a respondent reports being never married or having been married. The parent role is measured by whether a respondent reports having had children at each survey. Both are also transformed to be age-specific measures. Lastly, independent living is based on the household record for each year and distinguishes people who do not live with either of their parents (or step-parents or foster-parents) at each age. Marriage and parenthood are treated as non-reversible states in our analysis, while respondents may exit and re-enter schooling, work, and co-residence with their parents during the transition to adulthood, an issue central to contemporary life course research (Booth et al. 1999; Goldscheider 1994; Schneider and Stevenson 1999; Shanahan 2000). [1] For these analyses, we are not concerned with questions of attainment beyond the acquisition of a specific role but this certainly should be the focus of future research. Descriptive statistics are shown in Table 1.

[1] Obviously one can transition out of marriage but importantly this involves entry into a new role of "separated," "divorced," or "widowed" rather than returning to a state of "never married."

Table 1. Descriptions and Sample and Subsample Means by Age, Race, and Sex.

Age	Role	Description	Random Sample (N=352)
17	Living Independently	Respondent not living with (step-), (foster-)	0.08
18		mother or father based on household roster	0.17
19			0.26
20			0.39
21			0.44
22			0.53
23			0.63
24			0.72
25			0.75
17	Parent	Respondent reports having a child	0.06
18			0.08
19			0.15
20			0.23
21			0.27
22			0.33
23			0.36
24			0.42
25			0.48
17	Married	Respondent reports being married or	0.03
18		having been married	0.09
19			0.13
20			0.20
21			0.27
22			0.32
23			0.39
24			0.46
25			0.53
17	In School	Respondent reports being enrolled in	0.85
18		school in previous year	0.57
19			0.39
20			0.29
21			0.27
22			0.15
23			0.12
24			0.09
25			0.09
17	Full-time Work	Respondent reports being employed in previous	0.05
18		two week (or usually being employed) and working	0.21
19		35 or more hours a week (or usually working	0.28
20		35 or more hours a week	0.40
21			0.48
22			0.56
23			0.63
24			0.65
25			0.63

Note. Standard deviations are not shown as these are algebraic functions of the reported means when variables are binary.

Heterogeneity in Pathways into Adulthood

Table 2 shows log-likelihood Bayesian Information Criterion (BIC) statistics for goodness of fit for different latent class models of pathways into adulthood. BIC statistics levy a penalty for the introduction of additional parameters relative to the change in the log-likelihood and is particularly appropriate for complex models with a large number of parameters and models based on large samples (Raftery 1995). Such statistics are particularly useful for finite mixture models such as latent class models given that they guard against over-fitting that would come through the inclusion of additional, extraneous classes. The table includes relevant statistics for one through seven class models for the random sample and for samples of Black, Hispanic, and white males and females.

Table 2. Log-Likelihood Bayesian Information Criterion and Classification Error for Goodness of Fit of Latent Pathways into Aduthhood: NLSY79.

Number of Pathways	Simulated Sample	Random Sample
I	21510.99	16985.7
	(.---)	(0.00)
II	21683.77	14097.13
	(.---)	(0.01)
III	21856.82	13561.08
	(.---)	(0.01)
IV	22013.18	13185.27
	(.---)	(0.01)
V	22181.19	12932.43
	(.---)	(0.01)
VI	22383.37	**12924.58**
	(.---)	**(0.02)**
VII	22544.62	12929.53
	(.---)	(0.02)

Note. Preferred models are bordered and in bold. Classification Error is in parentheses.

Starting with the random sample, we see steady declines in the BIC through six classes and a higher BIC value for the seven class model. Specifically, the difference in BIC from the five to the six-class model is 8 (12,924 versus 12,932), while the difference between the six- and seven-class models is 5 (12,924 versus 12,929). Using Raftery's (1995: Table 6) criterion, this constitutes "positive" to "strong" evidence in favor of the six-class model. For comparison purposes, we also include relevant BIC values for a simulated sample where roles were randomly assigned to ages and hence show how model fit would look if there were no underlying associations between roles within- and across-ages.

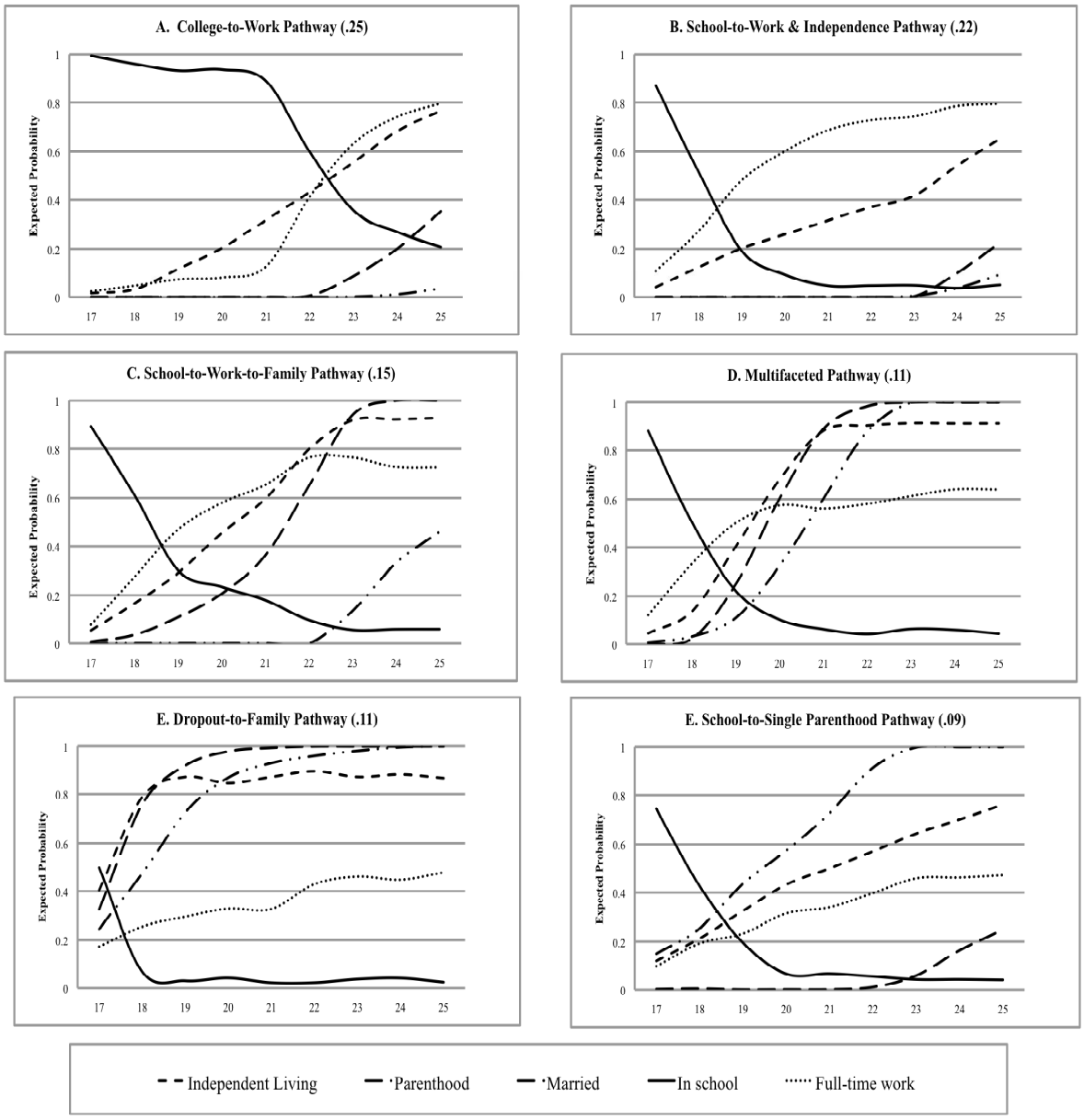
Latent Pathways into Adulthood: An Initial View

An initial lens on pathways into adulthood can be gleaned from the conditional role probabilities associated with the six pathways into adulthood for the overall NLSY79 sample. Estimation of these pathways incorporates NLSY79 sampling weights to account for both attrition and the oversampling of Blacks and Hispanics. For purposes of clarity, these have been graphed and are shown in Figure 1.

Of the six pathways, the most prevalent is a "college-to-work and independence" pathway, characterizing over 25 percent of the sampled population (see Figure 1A). This pathway shows a high likelihood of schooling (>.90) that extends through age 21 and then declines quite sharply through the mid 20s. Concomitant with this, likelihood of full-time work is very low through age 21 (≈ .15) before increasing sharply and steadily (to .80 at age 25). Indeed, the two trajectories virtually mirror one another. Likelihood of living independently increases in concert with full-time employment and has a similar probability by the mid 20s. This suggests that employment in this pathway is quite capable of supporting independent living.

Likelihood of family transitions is quite low in this pathway with no substantive probability of marriage or parenthood through age 22 and only a moderate increase thereafter (< .40 at age 25). The likelihood of parenthood is effectively zero over the entire age-span.

Figure 1. Estimated Population Prevalence and Conditional Role Probabilities for Latent Pathways into Adulthood, Random Sample NLSY79.



A second pathway characterizes twenty-two percent of the population and shows a high likelihood of schooling at age 17 (≈.85) but that declines sharply through the late teen years (<

.10 at age 20 and thereafter). Movement out of schooling is coupled with steady increases in the likelihood of full-time work (from .10 at age 17 to .80 by age 25) that is (probabilistically) trailed by the likelihood of living independently (from .05 to .63). The gap between trajectories of full-time employment and independent living suggests that employment in this pathway is not entirely sufficient in fostering independence, although there is evidence of convergence by the mid 20s. Like the first pathway, this pathway also involves little movement into family roles. The likelihoods of both are effectively zero through age 23 and increase only marginally thereafter (< .25).

A third pathway (see Figure 1C) characterizes a sixth of the sample (.15). Here, movement out of schooling is somewhat sharp (≈ 0.20 by age 20) and is coupled with strong increases in the likelihood of full-time work through the late teens and early 20s (to .78 at age 22). Movement into the labor force is slightly lagged by independent living and marriage with the likelihoods of both very high by age 25 (> .90). Importantly, the early to mid 20s see strong increases in the likelihood of marriage (≈ 1.0 at age 23) and visible increases in the likelihood of parenthood (≈ .50 at age 25). In general, this pathway involves interconnected "school-to-work-to-family" transitions with the likelihood of marriage preceding that of parenthood.

A fourth pathway is more "multifaceted" (see Figure 1D). Characterizing eleven percent of the sample, the distinguishing feature of this pathway is greater compression in the interlock of roles in the late teens and early 20s. Likelihood of being in school is high at age 17 (≈.90) but declines sharply through the late teen years and is low through the 20s (< .10). With movement out of schooling come increases in the likelihood of full-time work and sharp increases in likelihoods of independent living, marriage and parenthood. For each of the latter, role likelihood is low at age 17 (< .20) but very high (> .75) by age 21. Moreover, the likelihood of

living independent, being married, and being a parent is nearly uniform through the mid 20s (≈ 1.0). In general, movement into full-time work is less strong with a final likelihood at age 25 of just over .60.

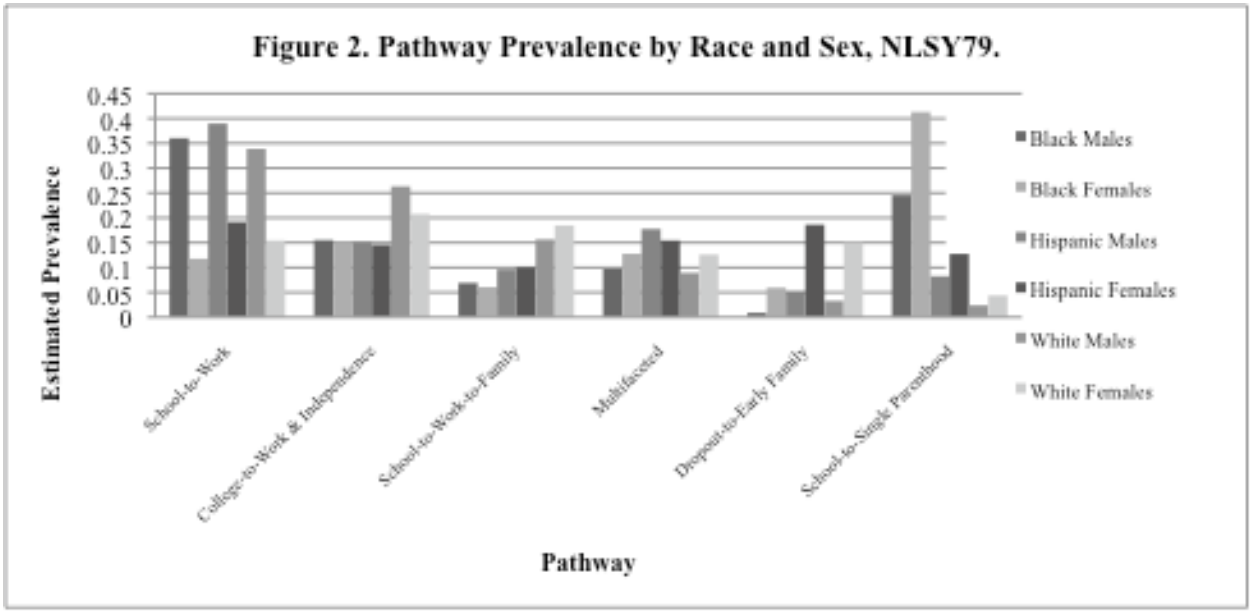
A fifth pathway (see Figure 2E) is a "dropout-to-early family" pathway and characterizes eleven percent of the sample. Here, likelihood of schooling at age 17 is comparatively low (< .50) and declines sharply thereafter. Movement out of schooling is coupled with steady increases in the likelihoods of marriage, independent living, and parenthood with all three roles having high likelihoods by the end of the teen years (> .80). Equally important, this pathway also shows a comparatively flat trajectory of full-time work and relatively low probability by age 25 (< .50).

Finally, the last pathway (see Figure 1F) is dominated by an early exit from schooling (.80 at age 17 to < .05 at age 20 and thereafter) and steady and strong increases in the likelihood of parenthood through the late teens and early 20s. By age 23, the likelihood of being a parent is uniform (1.0). In contrast, likelihood of full-time work increases much less sharply, is not particularly high by age 25 (≈ .40). Similarly, the likelihood of independent living also trails that of parenthood. Finally, the transition into marriage is comparatively low in this pathway, at least in relation to other pathways. Likelihood is essentially zero through age 22 and then increases only marginally thereafter (< .25 at age 25). This "school-to-single parenthood" pathway has the lowest prevalence, characterizing eight percent of the population.

Life Course Inequalities: Race and Gender and Pathways into Adulthood

While the previous analyses show the structure of the variable routes into adulthood, it is equally important to identify factors that influence the type of pathway that one follows. To do so, we elaborate the statistical approach to include covariates indexing race and sex. Race and

sex, along with SES, are key indicators of positions in stratification orders and have a long history in sociodemographic research. By including them as predictors of pathways into adulthood, we provide an initial lens on issues of life course inequalities. To aid interpretation, we converted logit coefficients into estimated probabilities or prevalence of each pathway given social group. These are shown in figure 2.



There are two important conclusions seen in the distribution of pathways across race-sex groups. First, there is clear and profound variation. While a "school-to-work" pathway characterizes 35 percent of males, regardless of sex, it characterizes only 10 percent of black women, 20 percent of Hispanic women, and fifteen percent of white women. When one considers the "college-to-work" pathway, what might be seen as the most advantageous pathway, prevalence is much greater among white men (25%) and white women (20%) and much lower among Blacks and Latinos (≈ 15%). Similarly, a "school-to-work-to-family" pathway is least prevalent among Black men and women (≈ 5%) and most prevalence among whites, particularly white women (18%). While differentiation is less pronounced, Hispanics seem to have the

highest prevalence of a "multifaceted" pathway. Pathways that involve early transitions to parenthood are also highly differentiated. In particular, a "dropout-to-early family" pathway is much more prevalent among Hispanic (19%) and white (15%) women, while essentially non-existent among Black women (< 1%). In contrast, prevalence for a "school-to-single parenthood" pathway is significantly larger among Black men (25%) and Black women (> 40%) than it is among Hispanics and Whites (< 12%).

This leads to the second conclusion. If we assume that different types of pathways have implications for stratification, the connections between race and sex and pathways has implications for the reproduction of inequalities. For example, the comparatively lower prevalence of a "school-to-work" pathway among women likely reflects wage discrimination that makes such pathways a less viable route into adulthood for women. Similarly, the "college-to-work" pathway requires resources, likely intergenerational transfers, to actualize such a route to adulthood and this seems more feasible among whites. At the opposite end of the spectrum, pathways involving early movement into family roles would seems to be the least advantageous in that they involve lower levels of capital, human and social, accumulation. That such pathways are more prevalent among women and racial minorities suggests the importance of life course pathways as both a consequence and reproducer of social inequalities (Dannefer 1987).

Caveats and Future Directions

As a caveat on the broader implications of these research findings for understanding the transition to adulthood in contemporary US society, it is important to recognize that the models estimated are sample dependent (as are all finite mixture models (Nagin 2005)). Other samples may produce pathways with different structure and different prevalence. As such, the pathways

shown in the present work are specific to the cohorts we study and need to be viewed that way. That said, the cohorts of the NLSY79 do provide an important lens into the structuring of the transition to adulthood in light of large scale institutional change given that the period in which they moved from their late teen through their early 20s (the 1980s) has been uniquely identified with such change, particularly the confluence of change across multiple institutional domains. Still, it is important to recognize that further study of later cohorts might (or might not) reveal greater evidence of an 'individualized' life course and should thus be an important avenue of future, perhaps comparative, work. The availability of comparable longitudinal panels from the National Longitudinal Surveys of Young Men (1966) and Young Women (1968) and the most recent NLSY97 will provide an important avenue for comparative research that should illuminate the broader dimensions of social change, the transition to adulthood, and life course inequalities in the latter part of the 20th century and initial decades of the 21st century.

Conclusion

This paper offers a perspective for both conceptualizing and modeling the life course. It does so by linking Elder's (1985) conceptualization of the life course as the interlock of role trajectories over time with a latent structure analytic strategy. In doing so, it conceptualizes the life course as a social structure involving a nexus of role configuration and pathway schema that govern the shape and meaning of interconnected role trajectories over time. Moreover, this approach translates into a statistical model that explicitly illuminates heterogeneity within- and across-groups with respect to role-based latent pathways. This perspective provides a means of conceptualizing and modeling the structure of the life course and opens the door for comparative

analysis across time in such pathways, as well as the role social stratification in shaping pathways into adulthood.

The research presented here is simply meant to showcase the power of our analytic strategy and provide a foundation for further work. The work shown is important in two respects. First, it shows the basic framework of the transition to adulthood in the NLSY79 cohorts in terms of discrete, yet conceptually meaningful, pathways into adulthood. Second, the incorporation of race-sex covariates further reveals powerful stratification in pathways with more advantageous pathways more prevalent among men and whites, and less advantageous pathways more prevalent among women and racial minorities. Such work is an important springboard for subsequent inquiry that will examine the structure of pathways across three NLS generations and further investigate the roles of race, sex, and SES in the structuring of the transition to adulthood.

As a final comment, the approach we provide in this paper attempts to both conceptualize and model the life course in a more holistic manner. Rindfuss and colleagues' (1987, p. 799) seminal study of the life course concluded with the hope that their research would "not stimulate more work on the determinants of first birth, first marriage, or educational attainment, but rather, [encourage] a more careful look at the life course as it is actually lived, not as we wish it to be for the sake of order in research." In contrast, George (2003) predicted that studies of the life course itself, while interesting, will not play a large role in the future of life course research as they paint too broad a picture of life course contours and diversity and are ill-suited to hypothesis testing and causal inference. In many respects we agree with George's critique. Yet, we also agree with Rindfuss and colleagues and regard the current situation as a challenge motivating our work on the utility of latent class techniques for modeling structure and heterogeneity in the modern life course. From our perspective, neither informal, non-systematic studies of the life

course nor the incorporation of specific, decontextualized elements of the life course into other areas of research yield a particularly strong life course social science. We hope that our efforts to extent theory on life course social structures and to articulate methods for modeling its heterogeneous, multidimensional, and dynamic character both reflects Rindfuss and colleagues (1987) call for a more biographical approach and provides a framework for future inquiry and a fuller understanding of the role of sociodemographic pathways in the shaping of inequalities over the unfolding life span.

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