RE: Summary of Recommendations and Discussion of the NLSY79 Pathways Working Group
Date: October 2023

The future of the NLSY79 is currently being evaluated. As with prior NLS cohort studies, such as the NLS Older Men's cohort and the NLS Mature Women's cohort, members of the NLSY79 sample will eventually leave the labor force in large proportion. Accordingly, the Bureau of Labor Statistics is charged with evaluating the strengths of the study, and the scientific payoff of continuing to invest in this study, vis a vis investments in new cohort studies. Against this backdrop, BLS staff and the NLSY79 investigator team invited a group of experts to participate in the NLSY79 Pathways Working Group. This group was charged with identifying the key research questions relevant for older workers currently and in the future and evaluating the NLSY79 as a platform for addressing these questions. Specifically, the BLS asked the Working Group to consider the benefits of continuing NLSY79 for different possible durations. In the future, BLS plans to juxtapose the benefits of continuing the survey for a set number of years, against the relative costs of continuing the survey. The working group convened twice via teleconference, on January 4, 2023 and March 29, 2023. This document summarizes the recommendations that arose from those discussions.

The working group is unanimous in its enthusiasm regarding the research potential of the NLSY79 as the cohort reaches traditional retirement ages. The group identified several key areas of research related to aging, work (both paid and unpaid), and other productive activities (e.g., caregiving) and characterized how the NLSY79 was particularly well-suited to answer research questions in these areas. In particular, the research areas identified are: (i) labor force productivity of older workers; (ii) transitions into and out of work (and retirement); (iii) barriers to working at older ages, including physical and mental health, cognitive decline, caregiving responsibilities, inflexible work schedules, and the absence of work accommodations; and (iv) how exposure to systemic racism and other forms of discrimination, environmental contexts, health conditions, and early and mid-life work pathways influence work and well-being at older ages. We note that several of these research themes also were articulated in a 2022 National Academies report, *Understanding the Aging Workforce: Defining a Research Agenda (2022)*.

The NLSY79 is uniquely positioned to address these questions because of the rich life course data on work, wages, and job characteristics; the oversample of Black and Hispanic persons; and the frequency of contact with respondents across much of the life span (i.e., spanning more than four decades).

The group unanimously agreed that there are tremendous benefits to continuing the survey, offered suggestions of content that would be valuable to include as the cohort reaches older ages, and shared ideas of administrative data sources that would be beneficial for linking to the NLSY79. The group did not specify a finite number of years/rounds for which the study should continue. Instead they underscored the value of tracing the cohort for several more rounds, which can be justified by projected increases in working life, increases in the age at which one can draw full Social Security benefits, changes in where and how we work, and the uncertainty associated with pension investments, alongside research interest in the health consequences of later-life work.

In this memo, we first describe those four focal areas of research importance. Then we detail how earlier rounds (when the cohort was younger) of the NLSY79 has been used to answer related questions and how the structure of the survey makes it well-suited to address the questions as the cohort ages. Continuing the survey for several more rounds, if it is feasible to maintain viable samples, would be expected to confer large benefits in each of these areas. For many of these research areas, ending the survey would mean that researchers would not be able to generate the same valuable insights and evidence in each area.

Last, we describe the suggestions for additional content that would be valuable to include as the cohort ages and summarize potential administrative data linkages that would enhance the survey.

Labor productivity at older ages

U.S. adults are working longer (e.g., Coile, 2019; Friedberg and Webb, 2005; Carr, 2023), and an increasing share of the workforce is over the age of 55. The NLSY79 can play an important role in understanding labor productivity of these older workers—who are projected to make up nearly a quarter of the labor force in 2031 when the youngest NLSY79 respondents will be 67 years old.[1] For members of the NLSY79 cohort, the minimum age at which one can draw full Social Security benefits ranges from 66 to 67, based on one's birth year.

In 2001, 13.6 percent of the labor force was age 55 and older; in 2021, that age group comprised 23.5 percent of the labor force.[2] These increases were experienced across all older age groups (i.e., 55-64; 65-74; and 75+). Notably, this increase in the share of the labor force composed of older individuals *outpaces* the demographic transition of the Baby Boomers aging (National Academies, p. 19). That is, the population is aging and individuals are in the labor force longer.

The NLSY79 has been used widely in studies of labor force productivity (as proxied by wages or earnings). In the NLS bibliography,[3] over 400 citations reference wages or productivity and the NLSY79 was the dataset used in several seminal publications on determinants of wages, and the study has been particularly influential in documenting women's labor market outcomes (e.g., Altonji and Pierret, 2001; Buchinsky and Hunt, 1999; Fryer, 2010; Heckman et al., 2006; Neal, 2004). The survey has been used to examine correlates of wages early in one's career (e.g., Bernhardt et al., 1999; Elliott and Parcel, 1996; Kondo, 2015), after childbirth (e.g., Herr, 2016; Loughgren and Zissimopoulous, 2008) and marriage (e.g., Loh, 1996; Loughgren and Zissimopoulous, 2008), and mid-career (e.g., Addison et al., 2012). For as long as the survey is continued and its sample remains viable and representative, the study will also be a valuable resource to examine correlates of wages and productivity late in one's career.

One feature of the NLSY79 that has been particularly valuable in estimating correlates of wages or productivity is the inclusion of the Armed Forces Qualification Test (AFQT) score from the

[1] Bureau of Labor Statistics. Table 3.1 Civilian labor force by age, sex, race, and ethnicity, 2001, 2011, 2021, and projected 2031 (Numbers in thousands). https://www.bls.gov/emp/tables/civilian-labor-force-summary.htm. Viewed July 19, 2023.
[2] Bureau of Labor Statistics. Table 3.1 Civilian labor force by age, sex, race, and ethnicity, 2001, 2011, 2021, and projected 2031 (Numbers in thousands). https://www.bls.gov/emp/tables/civilian-labor-force-summary.htm. Viewed July 19, 2023.
[3] https://nlsinfo.org/bibliography-start

Armed Services Vocational Aptitude Battery (ASVAB), which researchers often use as a measure of math-verbal skill level when the respondent entered the survey in adolescence/early adulthood (Aughinbaugh et al., 2015). In addition to the respondent's AFQT score, which was administered when most respondents were 15 to 23 years old, the survey added measures of cognitive ability when the respondents reached age 48 and an expanded version in Round 29 when the respondents were aged 55 to 63. These measures will be a valuable resource to researchers as the cohort continues to age in subsequent rounds, starting with Round 31 when the respondents will be aged 59 to 67. These measures make it a particularly valuable survey for estimating labor productivity, while controlling for skills or cognitive ability.

Working longer; transitions into and out of work and retirement

The characteristics of individuals who are remaining in the labor force into their 50s, 60s, and older have changed, making it increasingly important to understand which individual and workplace characteristics, as well as life course pathways, are correlated with (often constrained) choices regarding decisions to transition out of work, take on bridge jobs, or take on a job post retirement. Job characteristics such as work flexibility, job training, the work climate, and compensation and benefits might impact decisions to work or retire. So, too, might work pathways matter – representing cumulations of advantage and disadvantage, as well as opportunity and risk. The NLSY79 can be used to understand the effects of changing work conditions and experiences.

Who is working longer has changed over the past two decades, reflecting both historical forces and cohort changes. For example, women ages 60 and older experienced a larger percentage increase in labor force participation between 2000 and 2019 than men (National Academies, Figure 2-3). And while historically, individuals working longer were in jobs with fewer physical requirements, between 2004 and 2019, workers over age 60 were less likely to work in office and administrative support or sales occupations and more likely to work in more physically demanding occupations such as transportation and material moving or healthcare (National Academies, Table 2-1).

Further, an increasing share of workers are employed in "bridge" jobs (either full or part time) after traditional retirement ages of 62 or 65 (Ruhm, 1990) or re-enter the labor force after an initial retirement, either as a paid employee (Fry, 2019; Quinn et al., 2019; Ameriks et al., 2020; Cahill et al., 2018; Maestas, 2010; Warner et al., 2010) or as an entrepreneur/self-employed (Abraham, 2020).

The NLSY79 is well-suited to study these transitions for several reasons. First, the survey includes a comprehensive record of paid employment, self-employment, and freelance work over the life course, which allows for the precise timing of these transitions. Second, decisions about retiring from work or re-entering the workforce following an initial retirement may be influenced by earlier experiences, such as the complexity of one's job (e.g., Carr et al., 2016; Carr et al., 2020). As a longitudinal survey that followed respondents over their entire working lives, researchers are able to examine how these earlier experiences are correlated with work and retirement transitions.

Moreover, the NLSY79 has a rich history of being used to study the determinants of employment (over 250 citations), job turnover (over 115 citations), labor force participation (over 330 citations), job mobility (over 120 citations), self-employment (65 citations), and work history or reentry (over 100 citations). The survey will continue to be a valuable resource to understand these decisions and transitions as respondents age.

Job and workplace characteristics also can influence decisions to work longer. Research has found that older workers prefer jobs that are flexible (e.g., Moen et al., 2017, 2016a,b; Moen, Kelly et al., 2011), offer training opportunities (e.g., Picchio and van Ours, 2013; Armstrong-Stassen and Ursel, 2009; Herrbach et al., 2009; Maestas et al., 2017), provide a supportive environment (e.g., Maestas et al., 2017; Pitts-Catsouphes et al., 2015), and have generous compensation and benefits (e.g., Maestas et al., 2017). Flexibility may mean remote work, the opportunity to scale back hours and obligations, phased retirement, or the option for rehire for contract work. However, the National Academies report notes a need for more research on how retirement is correlated with different types of flexible arrangements (p. 107), especially considering remote or hybrid work (p. 108) and training (p. 109). Workers in the NLSY79 cohort, born between 1957 and 1964, are eligible for their full Social Security retirement benefits at age 66 or 67, depending on birth year – an increase over earlier cohorts – and they also experienced the shift to defined contribution (DC) rather than defined benefit (DB) pension plans. There are many unanswered questions about how these policies and trends interact and will be correlated with work and retirement for this cohort, especially in the aftermath of the COVID-19 pandemic which dramatically altered workplace norms and structures.

The NLSY79 already includes questions about flexibility, training, and retirement benefits, making it well-suited to understand the correlation between job characteristics and decisions to work, retire partially or retire fully. In addition to detailed measurement of how many hours individuals work, since 1989 the NLSY79 has asked a question about whether one of the benefits offered by an employer is "flexible hours or work schedule" and has asked how many hours a respondent worked from home for each job. Since 1986, the survey has asked whether respondents received vocational, technical, or on the job training since the prior interview, and questions about retirement benefits (since 1994). Questions about retirement benefits ask about plan eligibility, type of plan, employer and employee contributions, and how much the plan is worth, among others.

Barriers to desired work at older ages

Caregiving demands, and one's own health—physical and mental—as well as onset of cognitive decline can pose barriers to desired work at older ages. Yet, there is much that we do not know about how caregiving, mental health, and cognitive ability interact with work at older ages. In fact, one of the conclusions of the National Academies recently convened Committee on Understanding the Aging Workforce and Employment at Older Ages was:

> "CONCLUSION 3: Although the relationship between physical health and work at older ages has been well established, less is known about other aspects of the relationship between health and work at older ages, such as the role of one's mental health; the health

> and caregiving needs of family members; and how accommodative practices can enable working longer. Moreover, little is known about how recent declines in health at midlife and younger ages, particularly among those with less education, will affect labor force participation and worker needs for accommodative practices in the future." (page 3)

Older adults who provide informal (unpaid) caregiving to a loved one are, on average, less attached to the labor force (e.g., Fahle and McGarry, 2018; Gonzales et al., 2017; Szinovacz and Davey, 2005; Dentinger and Clarkberg, 2002; Pavalko and Artis, 1997). Recent estimates show that one in four Baby Boomers provides informal care to a loved one (Miyawaki et al., 2020) and because of the long life expectancy of their parents (Moon et al., 2015), they may be in this role for many years, especially in the case of Alzheimer's disease. Baby Boomers also may be tasked to serve as custodial grandparent to a grandchild, in the event that their child (i.e., grandchild's parent) is unable to do so. Boomers also increasingly provide economic support to adult children and grandchildren, potentially intensifying their need to work for pay (U.S. Census Bureau, 2020). Conversely, family care obligations may well push older workers out of the workforce.

When older adults need care, surveys often only describe that care from the perspective of the adult child caregiver or the care recipient. Another unique feature of the NLSY79 is the availability of a companion survey, the NLSY79 Child Survey, which interviews biological children of mothers in the original NLSY79 cohort and permits linkages across the two surveys. These cross-survey connections have allowed deeper insights into how the care needs of the aging NLSY79 participants affect the labor market activities of their children. If there are additional collections of the NLSY79 Child Survey, then continuing to collect responses from the NLSY79 would provide context for how their changing situation might affect their adult children. For example, the NLSY79 captures information about what old-age supports the NLSY79 respondents receive from the government (e.g., through Social Security, Medicare, and Medicaid), and receipt of these supports likely impacts what demands they place on their adult children.

Recent research demonstrates the strength of the NLSY79 in studying these questions of the youngest Baby Boomers as they age (e.g., Aughinbaugh, 2020; Aughinbaugh and Woods, 2021; DeRigne et al., 2022; Jang and Tang, 2020; Li, 2020; Porterfield and Kwan, 2019). It will continue to be a great resource for these questions for as long as the survey is continued and its sample remains viable.

Prior work primarily examined how changes in physical health are correlated with retirement; healthy older adults are more likely to work (e.g., Cahill et al., 2006; Kim and DeVaney, 2005; Henretta et al., 1992) and older adults are less likely to work after the onset of a health condition (e.g., Zajacova et al., 2014; Warner and Brown, 2011). However, just considering physical health ignores two important components of well-being: cognitive health and mental health. The National Academies committee noted that more work is needed to understand how changes in cognitive health and mental health – including depression, anxiety, and substance use – impact retirement.

The NLSY79 is well-suited to inform these important lines of inquiry for several reasons. For cognitive health, the NLSY79 administered skills tests when the respondents were ages 15 to 23 and cognitive measures were administered when respondents were 48 or older. For mental health, the Center for Epidemiologic Studies Depression (CES-D) Scale was administered in 1992 (20-item and 7-item), 1994 (7-item), 2020 (9-item), 2022 (9-item), and as part of the health modules administered when respondents are ages 40, 50, and 60 (9-item). The 60-year-old health module includes additional instruments intended to measure emotional health, such as the Brief Resilience Scale (BRS), the Diener life satisfaction scale, and the GAD 7-item scale for Generalized Anxiety Disorder. And the list of surveyed chronic conditions in that module for 60-year-olds now includes diagnoses of anxiety and sleep disorders. The NLSY79 also is widely used in studies of alcohol and illicit drug use, as well as more recent measures of misuse of painkillers at midlife. (e.g., Johnson et al., 2001; Mulia et al., 2022). If BLS continues to field survey rounds while respondents are in their 60s and into their 70s, the NLSY79 will have the opportunity to address questions about the correlation between physical and mental health and work at older ages.

How exposure to systemic racism, environmental contexts, health conditions, and early and mid-life work pathways influence work and well-being at older ages.

Two additional thematic areas of research arising from the Pathways meetings include the need for more research on how exposure to systemic racism as well as different environmental and health conditions and occupational attachments throughout one's life impacts work and well-being at older ages and the importance of using a life course perspective in research because experiences early in life shape later outcomes.

Moen (2013) notes that well-being at older ages is influenced by the environments and institutions one has been exposed to throughout one's life. Decisions about work and retirement at older ages also reflect one's cumulative life experiences. The National Academies group stressed the need for longitudinal data to understand the impact of exposures throughout the life course on work and retirement decisions, writing:

> "Combining information on individual work and retirement pathways with their past life histories, their household and family circumstances, and relevant administrative, regional, and state data illuminating the particular institutional and geographic contexts in which lives play out is key to understanding these pathways in later adulthood. Surveys that rely on respondents' recollection are insufficient and are fraught with biases and scientific limitations. Data need to disentangle the sequence of life events, not just their summary recollections." (p. 204)

The NLSY79 is particularly well-suited to answer questions about the long-term effect of earlier exposure to systemic racism and environmental and health conditions and pathways because it includes a comprehensive look at the respondent's life. The respondents were first interviewed at the ages of 14 to 22, and the survey includes questions about the respondent's parents and the respondent's children; about the respondent's home life at the age of 14; and a retrospective history of every place the respondent lived from birth to age 18. Further, researchers working at BLS offices or Federal Statistical Research Data Centers (FSRDCs) may access detailed

neighborhood information (i.e., zip code or Census tract of residence). This historical record of household composition and detailed geographic residence enables researchers to identify early-in-life (and mid-life) neighborhood-level exposures to systemic racism or environmental hazards.

The NLSY79 is particularly well-suited to examine questions about racial and ethnic differences to such exposures because the sample includes supplemental samples (also called oversamples) of Black and Hispanic respondents to facilitate comparison across groups.[4] In round 29, which was fielded in 2020, there were 1,997 Black respondents and 1,224 Hispanic respondents.[5] These cell sizes, even when split by sex, are large enough to meaningfully examine many research questions and reflect higher retention rates than those for white respondents (68.3%, 64.7%, and 64.3% for Black, Hispanic, and white respondents, respectively). Further, novel and extensive data on incarceration and encounters with the criminal justice system – a domain marked by stark racial disparities – provide another mechanism contributing to racial disparities in economic, physical and psychological well-being in mid and later life.

There are documented racial and ethnic differences in labor market outcomes and health that will impact work and well-being at older ages. For example, at every age, labor force participation rates of non-Hispanic Black men are lower than every other race/ethnicity group (National Academies, Figure 2-11). Black and Hispanic male workers are more likely to work in lower-paying jobs, even conditional on education and test scores, a pattern referred to as diminished returns (e.g., Neal and Johnson, 1996; Thompson, 2021). Often these jobs do not offer pensions (Butrica and Johnson, 2010) or, when pensions are offered, Black and Hispanic workers are less likely to participate (Butrica and Johnson, 2010) or contribute a lower share of income (Smith et al., 2004) than their white coworkers. These patterns are exacerbated by the transition from defined benefit (DB) to defined contribution (DC) pension plans; workers with pressing or immediate financial needs cannot necessarily allocate a share of their earnings for long-term investments in pension wealth (Carr, 2019).

Black and Hispanic women are more likely to retire following disability (Lahey, 2018) which has been attributed to disadvantages experienced throughout the life course (Rothstein, 2017). And older Black and Hispanic individuals who are near retirement age have poorer health status and a greater number of comorbidities compares to whites (Sudano and Baker, 2006), which has also been shown to be the result of disadvantages experienced earlier in life (Brown, 2009).

The NLSY79 has been an important resource for understanding racial differences at earlier points in the cohort's life, and it will continue to be valuable as the cohort ages. For example, there are over 1,500 citations that use the NLSY79 and have the keywords "racial differences." The NLSY79 is particularly well-suited to examine these questions

[4] "History of the National Longitudinal Surveys Program." https://www.bls.gov/respondents/nls/history-of-nls-program.htm. Viewed July 20, 2023.
[5] "NLSY79 Data Overview." https://www.bls.gov/nls/nlsy79.htm. Viewed August 3, 2023.

Recommendations and Suggestions

The Working Group identified several content areas that would be valuable additions to the survey. These include:

1. Asking what tools or platforms the respondent used to find recent jobs (e.g., are older adults finding jobs online) or share their credentials with employers (e.g., LinkedIn)?
2. Is the respondent amenable to remote work? Is their employer open to remote work? Flexible arrangements (e.g., scheduling/hours)? Would such flexibility increase the likelihood the respondent worked, or affect the types of jobs carried out?
3. Asking respondents directly what barriers to work the respondent faces (e.g., health, skills, caregiving, transportation).
4. Is the respondent interested in additional job training?
5. Asking whether the respondent wishes to work at certain ages (to complement current questions about whether the respondent expects to be working or retired at 62, 65, and 67). A constructed measure of a gap between desire and expectation (or need) would be a valuable resource. It would also be valuable to understand which respondents are expecting to work longer because they are uncertain about their economic situation.
6. Including two psychological scales that have been in the NLS surveys in previous waves:
    a. Locus of control (in NLSY79 in 1979 and 2014/16)
    b. Self-efficacy
7. Including additional measures of health and cognitive ability
8. Including measures of personal and contextual stressors, especially racism, that the respondent experienced across the life course and exposure to structural racism (e.g., interpersonal perceptions of stress, job discrimination, mobility-related worries about family)
9. Asking about the educational attainment of the respondent's children to preserve the intergenerational strengths of the survey, exemplified by the use of linked NLSY79 and NLSY79 Child and Young Adult (CYA) data.
10. Questions about cognitive activities, such as:
    a. Does the respondent take continuing education classes to stay cognitively engaged and active?
    b. Does the respondent participate in any groups such as Life-long Learning, book club, assisting local schools, homework programs, literacy programs?
    c. What cognitive activities does the respondent engage in: do they still try to balance their checkbook? Read the paper? Enjoy reading fiction? Nonfiction?
11. Questions about family relationships and exchanges, such as:
    a. Are they reliant on older generations?
    b. What do they feel younger generations will rely on them for?
    c. Do they expect help from siblings on caregiving as move to older ages?
    d. How do they perceive the environment they were raised in?

12. Questions about social networks. Who do they wish to live near? Who is in their social network?

The Working Group noted that the following potential linkages to administrative data would be especially valuable to pursue:

1. Both prospective and retrospective links to Social Security Administration data
2. Prospective links to CMS (Centers for Medicare and Medicaid Services) records
3. Prospective links to the NDI (National Death Index)
4. Retrospective links to IRS data

The working group was unanimous and enthusiastic in its support for continuing the NLSY79 survey past Round 31, if it remains feasible to maintain viable samples. U.S. adults are working longer – for some, due to choice and for some due to economic need. The goal of the NLS surveys are "… designed to gather information at multiple points in time on the labor market activities and other significant life events of several groups of men and women."[6] The BLS estimates that the labor force participation rate of adults age 75 and older is expected to increase from 8.9 percent in 2020 to 11.7 percent in 2030; and this is the only age group with an expected increase in the labor force participation rate over this decade.[7] The youngest NLSY79 respondents will not turn 75 until the year 2041 (which would correspond to a round 39 of the survey; for reference, round 29 was published this year). To gain a complete picture on the labor market activities of the NLSY79 cohort, it will be essential to continue the survey.

Respectfully submitted,

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[6] https://www.bls.gov/nls/. Viewed May 26, 2023.
[7] Bureau of Labor Statistics, U.S. Department of Labor, *The Economics Daily*, Number of people 75 and older in the labor force is expected to grow 96.5 percent by 2030 at https://www.bls.gov/opub/ted/2021/number-of-people-75-and-older-in-the-labor-force-is-expected-to-grow-96-5-percent-by-2030.htm (visited *May 26, 2023*).

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