

**ASSESSING THE NEED FOR A NEW NATIONALLY REPRESENTATIVE  
HOUSEHOLD PANEL SURVEY IN THE UNITED STATES**

Robert Moffitt, Robert F. Schoeni, Charles Brown, P. Lindsay Chase-Lansdale, Mick P Couper,  
Ana V. Diez-Roux, Erik Hurst, and Judith A. Seltzer

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Abstract:

We introduce this special issue on the critical matter of whether the existing household panel surveys in the U.S. are adequate to address the important emerging social science and policy questions of the next few decades. We summarize the conference papers which address this issue in different domains. The papers detail many new and important emerging research questions but also identify key limitations in existing panels in addressing those questions. To address these limitations, we consider the advantages and disadvantages of initiating a new, general-purpose omnibus household panel in the U.S. We also discuss the particular benefits of starting new panels that have specific targeted domains such as child development, population health and health care. We also develop a list of valuable enhancements to existing panels which could address many of their limitations.

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# **ASSESSING THE NEED FOR A NEW NATIONALLY REPRESENTATIVE HOUSEHOLD PANEL SURVEY IN THE UNITED STATES**

## **I. INTRODUCTION**

The United States has long been regarded as one of the leaders in the production of longitudinal survey data. It has an enviable collection of surveys that are longitudinal panels, following individuals over time with periodic interviews. Panels covering an impressive variety of subjects are available, ranging from those which follow older adults and those with disabilities, to panels of children followed after birth or school entry, to those following adolescents as they finish and leave school, to panels following individuals as they chart their way through the labor market, to name only a few of the subject areas. At the same time, U.S. society is rapidly changing and new social, developmental, and economic forces are operating. These create a compelling need for responsive or visionary policies and practices, but new data are essential for developing and assessing these policies. In this context, it is appropriate to examine how well existing data can describe the continuing changes in the U.S. population and economy, provide explanations for these societal changes, and generate the information base to inform and evaluate policy responses.

This is the goal of the papers in this special issue. As discussed in more detail below, the National Science Foundation provided the financial support to hold a conference where experts in a set of major social science domains would come together to discuss both the nature of the social science and policy questions likely to emerge over the few next decades and whether existing panel data sets in the U.S. are adequate to address those questions. That conference took place in June, 2014, and this special issue contains those papers. In this Introduction we summarize and attempt to draw conclusions from the conference.

The next section reviews the major social and economic developments occurring in the U.S. The following section describes the origins of the conference and the project and describes its makeup and organization. We then provide a broad summary of material in the papers, how the authors answered the questions that were posed to them, and what conclusions they drew. We

end with recommendations for next steps on the critical question of whether a new household panel survey is necessary to provide timely and relevant evidence on which to base future policy.

## **II. KEY EMERGING SOCIAL AND ECONOMIC DEVELOPMENTS**

America is in the midst of a dramatic social and economic transformation, with profound changes occurring in its families, neighborhoods, labor markets, schools and universities, financial systems, population composition, health care systems, and the environment. These changes have significant implications for the well-being of Americans today, and they will shape our country's future over the next several decades.<sup>1</sup>

The transformation of the American family is a sign of significant national social change, and there is also a strong social class gradient to these changes. While some young adults delay marriage and childbearing and complete higher education, with a great deal of parental assistance throughout their twenties and even thirties, other young adults who grow up in poor families continue to have children early, often outside marriage, leave school early, and have difficulty forging a foothold in the labor force. Many of the relationships that are formed surrounding a first birth are “fragile” and short-lived, often with subsequent childbearing with new partners. While overall divorce rates leveled off many years ago and have even fallen to some degree, rates remain higher in the United States than in other countries. Non-marital child-bearing has risen dramatically and has only recently leveled off but remains at high levels. While originally confined primarily to those with lower incomes, cohabiting unions and non-marital childbearing have spread into the middle class. Cohabitations that may be ongoing at the time of a child's birth frequently dissolve before a child's 5<sup>th</sup> birthday. These trends – non-marital childbearing, unstable and short-lived non-marital unions, high risks of divorce when unions are legalized – have led to an increase in the rate of single motherhood, a phenomenon strongly negatively correlated with income, which contributes to and reinforces household income inequality.

Changes in the American family system also lead to more complex family relationships across the life course, with many families including step-relationships between parents and

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<sup>1</sup> This section does not contain citations for the many emerging social developments that are identified. Citations can be found in the individual chapters of this Issue.

children in the same household and biological ties that span households. Father-child ties are typically more tenuous than mother-child ties, which often reduce the financial support of young children but perhaps also curtail adult children's willingness to provide care to their elderly fathers later in life. The quality of family relationships across the life course and the obligation to support family members, in terms of time, money, and emotion, undergo transformation as family relationships become more complex, as marital ties weaken, and as ties other than biological ties often link co-residential parents and children.

Technological innovation is transforming the labor market, dramatically increasing economic inequality, as those with more education are rewarded by new jobs with higher requirements and those with less education fall behind. Young men and women are exhibiting an unequal response to these rapid changes, with women now completing more schooling than men, and young adults from more affluent families increasingly pursuing college and post-graduate education while those from lower income families continue to exhibit excessive rates of high school dropout. The worst performing K-12 schools continue to fail to adequately address the problem, while many high schools provide limited preparation for the world of work. The burgeoning community college sector is partly addressing the needs of this societal group but its quality is uneven, and these institutions do not always provide the types of training needed for today's jobs. Traditional four-year college education is becoming increasingly expensive and out-of-reach for many low- and middle-income families. The federal and local government's manpower training programs are also in need of drastic overhaul, as they are not up to the task of addressing the demands of the changing labor market.

Driven by these labor market developments but also in part a cause of them, household income and wealth inequality has increased. The most serious concern is with families at the bottom of the distribution. Low levels of household income generate a negative feedback loop back into poor human capital environments for disadvantaged children, contributing to the adverse educational and labor market outcomes already noted. Rising household income inequality is also being accompanied by geographic inequality, as concentrated poverty has risen over some periods within the past several decades.

The economic security of households has also been significantly affected by sweeping changes in the financial environment they face. Over the several decades leading up to the Great

Recession, U.S. households experienced a dramatic expansion of financial opportunities. Such opportunities can yield important benefits in terms of household economic security. For example, the democratization of credit and development of new lending approaches increased the options for families looking to borrow against future income or accumulated home equity in order to enjoy a smoother path of consumption. New financial opportunities have also allowed households to choose to take more risks in pursuit of higher expected future well-being.

However, the financial crisis that began in 2007 powerfully illustrated that expanded financial opportunities can also pose significant dangers for households. By increasing the scope for investment in risky assets, families may end up with larger swings in wealth than they had anticipated. Households may borrow too much and then face obligations that are unsustainable given their resources. As seen over the last few years, the outcomes can be devastating not only for the individual households who borrowed too much but also for millions of other households when the broader economy is affected. Financial trends have interacted with income dynamics to make it even more challenging for young adults to transition into a secure economic standing. For the nation as a whole, student debt has grown to exceed total credit card debt outstanding. Going forward, policymakers need to better understand the evolving financial landscape and the reactions of households in order to create appropriate regulations that may foster greater financial opportunities while also offering protections from financial risks.

Race and ethnicity continue to play important roles in social inequality. African-American and Hispanic families, while having made significant advances in the 20th century still exhibit lower levels of earnings, household income and assets, as well as higher levels of poverty and single motherhood. Cross-sectional evidence indicates that Asian-Americans are faring relatively well in terms of economic outcomes, but existing long-term panel studies do not have adequate sample sizes to investigate changes in the well-being across the life course for this group as a whole and particularly for subgroups within the Asian American community.

Large increases in immigration over the last four decades have transformed many parts of America. In 1970 just 4.8% of the U.S. population was born outside of the United States. Today, foreign-born individuals total 40 million and account for more than 12% of the population. The foreign-born population accounts for more than a third of the population in many large cities including Miami, Los Angeles, San Francisco, and New York. Moreover, an increasing share of

the foreign-born population is from Central and South America and Asia instead of Europe. Unfortunately many of our nationally representative longitudinal studies do not fully capture the foreign-born population, particularly recent immigrants. And, when they do, they typically do not include large enough samples to examine subgroups of the immigrant population who often times have quite distinct cultural and socioeconomic experiences.

Significant gender differences in labor market outcomes, while also narrowing, remain despite the fact that recent cohorts of women obtain more schooling than men and have made substantial inroads into traditionally male fields of study and occupations. The division of labor in the home remains gender specialized once children arrive, with women continuing to play a disproportionate role in home production despite increasing amounts of time spent in the labor market. When marriages end or are never formed, the financial security of single mothers and their children is imperiled by their investment in the home and their disinvestment in the labor force. Later life financial security of divorced women but also widowed women is lower than for men, in part reflecting earlier life decisions about time allocation to work and family.

All of these social trends have significant implications for child health and well-being. Poverty rates are higher for young children than for any other subset of the population. The majority of low-income children arrive at kindergarten unprepared for the K-12 system. Fully 67% of all children in the United States are not proficient in reading by the 4<sup>th</sup> grade, a crossroads for future educational success. More than 20% of young children live in immigrant families, well over 100 languages are spoken in our major cities, and our schools are ill-equipped to educate the explosion of English Language learners. The major demographic transformations that we have outlined all influence children through processes in their “proximal environments,” i.e., their close-in experiences in the family and in non-familial settings, such as early childhood education and care, school classrooms, after-school programs, and neighborhoods. It is critical to understand the implications of societal changes in the 21<sup>st</sup> century for child and adolescent development over time. Equally important is a focus on the ways in which major demographic shifts affect children, i.e., through parenting practices, the quality of the home environment, and other types of mechanisms.

The baby boom cohort, born between 1946 and 1964, has just begun to enter ages where major health events become more prevalent, and these changes are likely to transform caregiving

needs and healthcare expenditures. This cohort's employment and retirement, savings, consumption, migration, and involvement in caregiving for each other and for grandchildren will have significant ramifications for their own well-being, the well-being of their now adult children, and for society as a whole. More generally, aging of the U.S. population and its increasing disparity in labor market and family circumstances motivate new policy concerns about the welfare of future generations. Recent evidence indicates that the health status of older adults nearing retirement ages has not improved and may have actually worsened in the last 10-15 years, and life expectancy in the United States is falling further behind that of other developed countries.

But important health choices and outcomes are not limited to those nearing retirement, with health care expenditures accounting for 18% of GDP. Children and adults of all ages face decisions about what to eat and how much to exercise; adults and parents make consequential decisions about health insurance coverage and medical care utilization. The expanding choices and limited information that characterize health-related decisions are not unlike the financial decisions that we highlighted above. The Patient Protection and Affordable Care Act is profoundly changing the health care landscape and will likely continue to do so for years to come.

The connections between population and the environment, which have begun to take center stage in both scientific and policy discussions in the last decade, will most likely continue to be of central importance. Data resources are needed to understand both the impact of environmental changes on individual and family outcomes such as health and well-being, as well as the impact of consumers' choices – such as their commuting patterns and the kinds of cars and homes they buy – on local, national, and international environmental systems.

### **III. EXISTING PANELS**

As the individual papers in this issue emphasize, longitudinal panel data are necessary to fully study the causes and nature of these trends as well as their implications for American families. While cross-sectional studies can document point-in-time distributions and can contain some retrospective information, establishing the nature of the trends in individual outcomes and

behaviors requires following individuals and families over time as they experience different events and as those events have repercussions for their futures. We also take it as given that a fairly long panel data set is needed, which means that many otherwise valuable surveys are unlikely to be adequate for a true understanding of the social changes we have described. Such short-panel surveys include, to name just a few, the Survey of Income and Program Participation, the Consumer Expenditure Survey, the Current Population Survey (which has a limited panel dimension), and the Medical Expenditure Panel Survey.

But there are many invaluable panel data sets that are quite long. An incomplete list includes the National Longitudinal Surveys, the Health and Retirement Study (HRS), the National Health and Aging Trends Study, the various Department of Education panels of high school and college students, the Early Childhood Longitudinal Study (both pre-K and K), the National Longitudinal Study of Adolescent to Adult Health (Add Health), the Wisconsin Longitudinal Study, Monitoring the Future, and the Fragile Families and Child Well-Being Study. These surveys have generated thousands of valuable studies and have advanced our understanding in their many domains in innumerable ways. The research findings from many of these panel surveys are discussed in detail in the papers in this Issue. However, these data sets are all limited in their restriction to particular age groups or birth cohorts, particular subpopulations, or both.

The only long-running panel survey which is reasonably comprehensive for the U.S. population as a whole is the Panel Study of Income Dynamics (PSID), currently consisting of roughly 9000 households and whose original household members and their descendants have been followed since 1968. The only significant group missing from the PSID design is immigrants to the United States since 1997, who are not fully represented. Because the PSID has been following the same individuals for over four decades and has followed second and third generation family members over time, it can be used to examine a variety of scientific questions related to life course and intergenerational transmission of well-being that can be answered by no other panel. The PSID is a vital national resource, having furnished the data for nearly 4000 studies of income dynamics, labor market trends, education, the family, child development, and other topics.

However, all of the long-running panel surveys were begun many years ago, and the questions posed about individuals' family relationships (e.g., marriage, whether or not they have



children with more than one partner, whether or not some of their young children live in a different household) do not capture the increasing complexity of U.S. family ties. There also have been major new types of “data” and methods of data collection since most existing U.S. panel studies began. Such features include biomarkers, including those assessed through saliva samples or blood draws, physical performance assessments, fMRIs, use of pedometers, direct assessments of cognitive and social functioning, and experience sampling, all of which measure important dimensions of human development; links to administrative data and geographical-positioning data; and new and less expensive modes of data collection, particularly via the Internet. And specifically for the PSID, it was begun in 1968 and some of its early decisions to interview a single adult member of each household and to capture new immigrants with infrequent immigrant “refreshers” might be done differently if the survey were to begin today to take into account changes in the immigrant-native composition of the U.S. population and increasing diversity in family relationships due to cohabitation, divorce, and nonunion childbearing.

Based on the success of the PSID, numerous countries from around the world began creating similar long-run, general population household panel surveys starting in the 1980s. Many of these surveys have drawn lessons from the limitations of the PSID and now incorporate several attractive design features not available in it. The Understanding Society (USOC) survey in the UK, an expansion of the original British Household Panel Survey (BHPS), has enrolled 100,000 individuals living in 40,000 households. It collects biomarkers, has links to administrative data, interviews all adults in the household each year, includes an ethnic-minority oversample, and has a special Methods panel to test new interviewing methods as well as new types of questions. The German Socio-Economic Panel (GSOEP) has many features similar to the UK survey, including annual interviewing and a Methods panel. China has begun a new national household panel (Chinese Family Panel Studies), with 16,000 households and designed after the BHPS, including interviews with all adults and most children within the family. Australia created a new household panel study (Household Income and Labor Dynamics in Australia) in 2001 consisting of roughly 7,700 households with annual interviews with every adult. South Africa began a similar household panel study in 2008 consisting of 7,300 households; interviews are conducted with all adults in each household. These are all general-population panels, like the PSID, but some have

much larger sample sizes, conduct annual interviews, interview more than a single person per household, and have large oversamples of minorities and more frequent refreshment of the sample for new immigrants than the PSID. With well-funded and innovative panels being developed in so many other countries, the U.S. is at risk of losing its position of leadership in the area of household panel data. Most panel surveys, like most household surveys in general today, still use either in-person or telephone interviewing as their principal means of data collection. All observers agree that the future will contain heavier use of the Internet. Some surveys have begun augmenting their traditional telephone and face-to-face interviews with interviews using the Internet. Among panel surveys, the HRS and PSID have fielded large-scale Internet surveys among their respondents. Other studies have been designed to use the Internet exclusively for data collection, following face-to-face, telephone or mail recruitment of a probability-based sample. These include GfK's KnowledgePanel and the American Life Panel in the United States, the CentERpanel and the Longitudinal Internet Studies for the Social Sciences (LISS) panel in the Netherlands, the ELIPSS panel in France, and the German Internet Panel in Germany. Understanding Society has been experimenting with mixed-mode designs involving Internet data collection in the methods panel, with mixed success. In the last 10 years a great deal has been learned about optimal use of new technologies to collect survey data, and consideration of a new household panel study must consider these options (Kapteyn, 2010).

#### **IV. THE PROJECT**

In March, 2012, the National Science Foundation (NSF) issued a Request for Applications asking for proposals for new ideas to build data infrastructure in the social, behavioral, and economic sciences. This project was subsequently supported by NSF to convene a conference of experts to discuss whether a new household panel survey is needed in the United States. The project was directed by an eight-member Steering Committee, chosen to represent important distinct fields of study. Disciplinary perspectives represented on the Steering Committee include economics, sociology, demography, psychology, medicine, public health, child development, and survey methods. The members of the Committee are Charles Brown, P. Lindsay Chase-Lansdale, Mick Couper, Ana Diez-Roux, Erik Hurst, Robert Moffitt, Robert Schoeni, and Judith

Seltzer. The project also benefitted from the insights of Karen Dynan and Suzanne Bianchi, who participated on the Steering Committee during the first several months of the project.

The Steering Committee identified 15 topical domains that might be covered by a new national household survey if it were created. For each domain, leading scholars in the field were commissioned to prepare a manuscript that would be presented in a two-day conference June 5-6, 2014, in Washington, DC. The list of topical domains and the complete agenda for the conference is contained in Appendix A.

The topical domains and organization of the conference were heavily influenced by many of the 252 White Papers submitted to NSF as part of its SBE2020 initiative. Moffitt (2010) specifically proposed a pressing need for a new household panel study. Kapteyn (2010) proposed a new panel study that would rely on collection of data using Internet technology. Several White Papers identified a need for scientific advances in human capital measurement and modeling, including new data (e.g., Altonji, 2010; Hanushek, 2010; Heckman, 2010). Other White Papers identified the value of capitalizing on administrative data (Card et al, 2010), noting that the United States lags far behind other countries in developing these resources into datasets that can be used for scientific purposes. Additional themes identified in the White Papers that intersect with our proposed efforts include identifying biological mechanisms underlying social behavior (Cacioppo, 2010), technological change (Autor, 2010), consumer financial behavior (Collins, 2010), time use (Hofferth, 2010), social networks (Jackson, 2010), and migration and geospatial issues (Hoeksema, 2010; Smith, 2010). More generally, our planning was consistent with the report based on those White Papers, *Rebuilding the Mosaic*, which forecast that future research will be interdisciplinary, data-intensive, and collaborative. Divisions among some of the topical domains were arbitrary, but overlaps in coverage were addressed when Committee members reviewed preliminary outlines.

Authors of the 15 commissioned manuscripts were instructed to address the following issues:

1. What are the most important scientific and policy issues within this topical domain now and in the coming years?
2. Does the nation need a new national household survey to address these issues?
3. If the opportunity arises to establish a new survey, what information, specifically, needs to be collected and for whom?

4. What information from other topical domains, e.g., covariates, needs to be included in the survey to address the scientific questions you have identified?
5. If you believe a new survey is not warranted, please describe your rationale. For example, do the necessary data already exist or could existing surveys or data collection efforts be augmented effectively to address limitations in the existing national data infrastructure?

The manuscripts were distributed prior to the conference, and at the conference each manuscript was discussed by an expert in the topical domain who typically represented a perspective or discipline distinct from the author. Ample time was included on the agenda for open discussion among all participants. The 85 participants included authors, discussants, other academic researchers, and representatives from numerous federal agencies.

The last session of the conference included presentations by three senior scholars who provided a broad perspective on the entire set of manuscripts presented at the conference: James House, Shelly Lundberg, and Kelly Raley. These three highly respected experts represent different disciplines – social psychology, economics, and sociology, respectively. They identified a broad array of social, behavioral, and health outcomes that a new survey would address and approaches that should be taken if a new survey is created.

The challenges in designing a survey to satisfy needs across all of the various topical domains are numerous and complex. To assess these issues, Kristen Olsen and Mike Brick were commissioned to review all 15 manuscripts prior to the conference and then provide their perspective on various challenges and opportunities. Their presentation at the conference covered all the salient methodological issues including sampling (e.g., appropriate sampling frames, selection methods including oversampling, panel refreshment), mode of data collection, frequency of measurement, and questionnaire design (e.g., managing competing demands for content). After the conference, Olson and Brick prepared a manuscript based on their assessments, and their article is included in this Issue.

## **V. OVERVIEW OF THE PAPERS AND CONFERENCE DISCUSSION**

All of the papers and conference discussion identified significant findings from past research

using data from existing household surveys and other data. Taken together these findings are the point of departure for important new questions that new data would address. A near-universal theme was the interlocking and interacting nature of the questions in the different areas and domains. Economic and labor market issues interact with the nature of the family as well as intergenerational family relationships; health has major effects on economic and social outcomes as well as vice versa; child and adolescent development affect adult economic well-being and health; and neighborhoods are both a cause and effect of disparities in socioeconomic characteristics. The questions cannot be treated separately and piecemeal but must be studied fully jointly.

Research Questions. Consistent with the list of emerging social issues discussed above, the authors of the conference papers identified many critical social science questions that are facing researchers and policy-makers as they confront those issues. In the area of income, poverty, and public programs, more progress is needed to understand the nature and definition of poverty and material hardship and its dynamics as well as the causes and consequences of rising income inequality for individuals and families. More understanding of the effects of government programs and how they can be redesigned to promote better outcomes is also needed. In the area of human capital, education, and skills, important questions remain on how skills are accumulated, at home as well as during school and after completing schooling, and how the many dimensions of personality and traits affect individual outcomes. More knowledge is needed at all phases, including childhood, young and middle adulthood, and for older individuals. As for labor markets, recent trends in labor force participation of men and women, instability in employment and earnings, and the persistence of gender and racial inequality in labor market outcomes have been well documented, but understanding the causes of these patterns and how they interact with family organization need more data and study.

Family well-being depends on wealth as well as income. Determining how families accumulate assets or fail to do so, how they manage debt and deal with short-term financial crises, and the role of important assets like housing and the role of liabilities like student debt are increasingly realized as key to understanding families' economic status. Relatedly, much more needs to be known about family consumption and how it should be measured, how consumption is affected by instability and uncertainty, and how low-income families meet basic consumption

needs.

Four of the papers examined the research questions concerning dimensions of health or health care. There are large gaps in our knowledge of the reasons for health disparities by race/ethnicity, socioeconomic position or geography, how factors at various levels (including features of neighborhoods, families and individuals) affect health, and the impact of a range of life course processes on health and socioeconomic outcomes in later life. Many emerging questions are arising regarding how health is affected by interactions between environmental factors and individual characteristics (including genetic make-up) as well as how biology and social circumstances jointly affect behaviors and other health-related processes. There is also an important need to understand how policies outside the health care system (including social policy and economic policy) affect health over the life course. Important questions remain on the reciprocal influences between health and educational, labor, and economic outcomes.

In the area of health care, many policy issues will need to be studied in the next decade, including the effects of recent legislation on health insurance, medical care utilization, and, ultimately, health status. Reforms and policy changes in the Medicare and Medicaid programs will generate important questions as well. Many important questions are currently being asked concerning physical and mental function, including how to maximize functioning and participation, the effects of those behaviors on earnings and employment and other economic outcomes, the role of safety net programs in assisting those with barriers to physical functioning and participation, and the role of the family in assisting those individuals.

Changes in the types of families that individuals form and maintain throughout life have raised many research questions and policy concerns. The family is the key source for adult and child well-being, yet new forms of family are emerging with increasing degrees of complexity and instability. Individuals who live together may not all be in the same family, for instance when a single parent has a cohabiting partner, and family members who have significant ties to each other may live apart. Disparities by education, income, race, and gender across the population in the form and stability of families are increasing, but the causes and consequences of these changes are not well understood. Relatedly, increasing complexity in interfamily and intergenerational relationships is occurring with added diversity in biological and step or quasi-step (through cohabitation) relationships. These changes in families appear to affect time and

resource transfers across generations, but the explanations for different degrees of investment in younger and older generations need more study to be understood. The division of labor within the family is reflected in research on time use. Gender and marital status differences in time allocation at home are associated with women's labor market and economic disadvantages, compared to men's. Cohort trends toward women's increased labor force attachment may reduce grandmothers' involvement in providing unpaid childcare, a major transfer to adult offspring.

Child and adolescent development is one of the most important social science research areas in the last decade. Evidence is accruing regarding the nature and extent of developmental change over time, especially regarding the extraordinary significance of the early years for wellbeing, health and disease in adulthood. Recent studies also highlight the potential of the adolescent years for shaping adult functioning, yet the causes of different pathways over time are not well understood, much less the causes and the effects of policy interventions aimed at improving development outcomes. Academic achievement, socio-emotional well-being, executive functioning, language, and physical and mental health are all important dimensions of development, and they should be studied together. Equally important, families are the drivers of child and adolescent development, and more sophisticated studies are essential for understanding not only the complexity and roles of families, but also the influence of institutional, cultural, and policy contexts.

Research on housing and neighborhoods has been a growth area in the last two decades because of the increasing realization of its importance. More needs to be known on the distribution of temporal exposures to important housing conditions, how much residential mobility exists and whether it is too much or too little, the nature and causes of accumulation of social capital, and the factors that cause racial and income segregation. Social networks is another growing area of research, where the effects of networks and the information conduits through which they occur are poorly understood, as are the effects of trust, support, and social relationships on important individual outcomes like crime, delinquency, academic performance, and substance abuse, to name only a few.

Adequacy of Existing Household Panels. The authors of the papers identified many deficiencies in existing surveys to address this multidimensional set of emerging research questions. Most surveys have weaknesses in their measures of income and poverty and a high

priority should be linking to administrative data on earnings and program participation. The best survey for long-term investigation is the PSID but it has gaps in design and content. Further, neither the PSID nor the various NLSY data sets, which have probably the best panel labor market content, ask the needed questions on skill and skill formation in the right way. Innovative measures of cognitive and socioemotional skills should be included and more data on local labor markets and possibly matched firm level data need to be appended..

Wealth data are one of the most poorly reported variables on existing surveys, and assets at the top of the wealth distribution are notoriously undercounted. Consumption is measured in relatively few surveys and, when measured, tends to be underreported relative to national control totals. Expenditure data from the PSID suffer from small sample sizes and it only recently covered nearly all consumption items. The Consumer Expenditure Survey is too short a panel for capturing both important consumption dynamics and the income processes that lead to changing consumption.

Most surveys with detailed health measurements are either limited in age range or in their coverage of health determinants. Few health studies collect information at multiple levels simultaneously from the macro policy level, to neighborhoods, to family environments, to behaviors and psychological processes, to biology. Life course studies that bridge these domains or that link to high quality social, economic or family data are rare. Many surveys are now collecting genotype data but lack social and environmental data or heterogeneity in social and environmental exposures. As for physical and mental functioning, the United States has no single, coordinated disability surveillance system although a growing number of surveys ask some measures such as the 6-item ACS disability measure. Many existing surveys collect information on health insurance and health care utilization, but most lack linkages to administrative data, state identifiers, and data on consumption and wealth measures.

Most existing surveys do not adequately capture the complexity of family structure and lack a full accounting of partners, including non-coresidential partners, and of parents and children who do not live with the survey respondent. Whether or not an individual has a partner and the type of partner, when the couple is not married, are often unmeasured aspects of relationships. Surveys typically lack information on relationship histories and quality. Most surveys also do not roster all parents and children both inside and outside the household and thus have insufficient



information on the quality of parent-child relationships and the intergenerational linkages that may be important sources of economic inequality or access to unpaid family care. Small sample sizes often hinder assessments of race and ethnic differences in family structures and their consequences. Many surveys also have little or no information on time use (apart from time spent working), and even fewer surveys tie time use measures to data on household expenditures, including on an individual-specific level.

Many countries have more expansive infrastructure than the United States to assess how societal changes are affecting children and adolescents. Survey projects in the United States that focus on child development are most commonly not national in scope, are focused on a relatively narrow set of outcomes and do not contain extensive measures of social, economic, and household factors that are known to influence development. Furthermore, many existing adult-oriented household surveys include detailed measurement of social and economic dynamics, but they typically lack in-depth measurement of child and adolescent development.

Existing panels are too infrequent to capture rapid housing mobility and lack important content such as job location and school codes. Geographic clustering occasionally is sufficient to do neighborhood-level measurement but often is not, and initial clustering is gradually undone by migration. Many more questions about housing and neighborhoods are needed for most surveys. Most surveys also have a few egocentric questions about networks but few have whole network questions. Other panels do not allow the determination of how networks change over time. Positions within the network are often poorly measured.

Whether a New Panel is Needed. Most paper authors recognized that whether a new household panel is needed is a complex question and involves tradeoffs. That said, several authors believed that there was a strong scientific case (that is, independent of cost considerations) for a new household panel survey in their domains of interest and that existing panels have serious limitations for examining many important research questions. This includes Robinson on human capital, skills, and education; Conley on genotyping (although he stressed that adding biomeasures to existing surveys would also represent a major improvement); Manning on family formation processes; Seltzer on family support processes; Raley on family change; Sabol et al. on child and adolescent development; and Tach and Cornwell on social networks. Most of these authors did make clear that their favorable views of a new household

panel depended on its having good design and content features. In addition, a common concern in several of the calls for a new household panel study was the focus on relationships among individuals that must be measured, in part, by self-reports and perhaps observations, rather than assessed through formal records. However, several other authors felt that a new household panel was either not appropriate at this time or that enhancements to existing surveys would be more fruitful. Ziliak, for example, felt that improving the PSID in the ways he described would be his preferred option. Bucks and Pence, Pistaferri, and Hurst believe that, in their areas of examination –wealth, consumption, and time use, respectively – we still do not know how to ask questions to elicit sufficiently accurate content and that this is the major barrier rather than having a new panel survey per se. Levy also felt that major enhancements to existing surveys in the measurement of health insurance and health care utilization deserve the higher priority. For advancing understanding of physical and cognitive functioning over the life course, Mendes de Leon and Freedman concluded that enhancements and extensions of existing surveys would be preferable to a new study. Quillian and Ludwig stressed that better measures of housing and neighborhoods are needed and that a new household survey was not necessarily the answer. Black et al. did not take an explicit position but stressed several ways that existing surveys could be improved to better understand U.S. labor markets. Adler et al. argued that there would be substantial scientific payoffs for research on the connection between socioeconomic factors and health to a new household survey and to enhancements of existing surveys. Lundberg does not state a preference for a new survey versus enhancements of existing surveys, but she rightly emphasizes the need to determine the sample size required to successfully examine the subgroups of interest and apply the desired methods described by the authors. House endorsed the creation of a new household panel study under three conditions: (1) it would enable integrative scientific and policy contributions; (2) it would cost-effectively meet scientific and logistical challenges; and (3) it would foster scientific and methodological innovation within and across the social sciences and related scientific and policy areas.

Enhancements to Existing Surveys. In addition to those authors who put a higher priority on improvements and enhancements in existing survey, the other authors, even those who emphasized the value of a new panel, described several types of data needs, many of which would be of value when added to existing surveys. Table 1 provides a list of potential

enhancements. While we did not rank these enhancements by their scientific value, we highlight a few enhancements in each of three major domains -- health; economics; children, family, and social networks -- that were mentioned by multiple authors.

**Health.** Researchers in several domains stated the need for better data on cognition and mental health. Mental health is important in its own right and is strongly associated with economic outcomes. Cognition influences human capital accumulation, labor market outcomes, and other outcomes throughout the life course. Personality traits have been shown to be important determinants of social, health, and economic outcomes, but extensive personality measures are not included in many of our national social and economic surveys. Scientific understanding of the role of genetic factors will continue to improve, including the role of gene-environment interactions. Some surveys have begun to collect genetic material and this effort should continue.

**Economics.** Household wealth is measured with substantial error, and continued experimentation and innovation in measurement is needed. How workers use their time throughout the workday is not well understood, with time diaries lumping all time spent at work into one “work” category. Measures assessing acute material hardship – bankruptcy, utility cutoffs, homelessness, etc. – and food security need to be assessed on a regular basis within longitudinal surveys. As commuting, telecommuting, and attachment to particular employers continue to evolve, location of work and commuting should be measured. Measures of human capital in much greater depth than years of schooling are needed, as described by Robinson.

**Children, families, and social networks.** The quantity and quality of various relationships – e.g., family, friends, coworkers – are important for social and economic outcomes. Social relationships are a centerpiece of the National Longitudinal Study of Adolescent to Adult Health, and these data have been valuable. Peer relations in childhood and adolescence are key predictors of mental health over time. Other surveys should consider adopting some of the ideas proposed by Tach and Cornwell in this Issue, such as the significance of social capital for educational and employment success. As family structure has become more complex, it has become increasingly important to know about the existence of and how to measure the influence of non-biological kin. Furthermore, most national surveys are either individual- or, at most, household-based. Systematic, regular information about non-co-resident family members is

rarely assessed even though these cross-household relationships can be highly influential. Obtaining information about who is in a survey respondent's family (parents, offspring) and the characteristics of these family members would provide valuable information that could explain why some individuals receive (or give) assistance to others and some individuals do not. The 2013 Roster and Transfer Module to the PSID is an example of how an existing survey could be modified to provide valuable information about step and biological family members and the extent to which they help each other with time and money. Yet this augmentation lacks questions about the socio-emotional ties among family members.

*Enhancements cutting across domains.* In recent years there has been an explosion of “big data” of various types, often generated through administrative processes. It is becoming increasingly common for researchers to utilize these data, typically as freestanding data sources. There is tremendous value to linking such data to survey data, combining the detailed and unique information obtained through administrative data with the broad information obtained through nationally representative surveys. Survey producers are encouraged to exploit the availability of these data, perhaps in a coordinated fashion across survey programs and in conjunction with the Census Research Data Centers to reduce cost to any particular survey and develop best practices for linking and accessing such data. External data that should be assessed include: Social Security earnings and benefit data, employer-level data, healthcare records (available through Medicare, Medicaid, and expanding state exchanges), birth records, bankruptcy filings, home values through sources such as Zillow, historical census data, home and neighborhood characteristics via satellite and street images from sources such as Google Street View, use of and amounts received from assistance programs such as food stamps and TANF, and social networking sources.

In part because of the explosion in big data, contextual data are becoming more abundant and accessible. Most national surveys do not assemble and distribute extensive contextual data. Instead, they provide – under restricted use contract – access to geographic identifiers such as tract or block group of each respondent's residence, with individual researchers responsible for assembling the contextual data necessary for their individual project. This approach is not cost effective, as many researchers will construct the same contextual databases. Furthermore, the time and money costs of constructing such data will prohibit some researchers from

incorporating these factors into their analyses. Therefore, funders should support efforts to create a contextual database that includes variables from a wide set of domains – pollution, healthcare infrastructure, labor market factors, public policies, income and poverty, housing conditions, etc. – that could be linked to any survey. Furthermore, staff from all major survey projects should be closely involved with the construction of the contextual data to ensure that it can be easily linked to each survey’s data and contains the content demanded by users of each survey.

## **VI. RECOMMENDATIONS FOR NEXT STEPS**

The papers from the conference and which appear in this Issue provide thoughtful and concise summaries of the research questions in the different domains, the limitations of existing surveys, and the tradeoffs in thinking about a possible new household survey as well as possible enhancements to existing surveys. The authors of the papers and conference participants have done a public service in pushing the discussion forward in a coherent and informed fashion and, as a whole, they constitute a strong and solid basis upon which to continue the discussion and to consider next steps. The authors and conference discussion emphasized that all decisions about new data collection, whether as a new household panel survey or as modifications to existing surveys, would require hard decisions about content and design. No single study or augmentation of existing studies would be able to address the breadth and depth of data the authors identified as important for new questions in their domains.

As we have noted, several authors made a strong case for the value of a new household survey. There are at least four major arguments for this approach. One is that a new survey could take advantage of everything we have learned about how to ask questions in various domains, what questions should be asked, and who should be asked the questions. More generally, the content of a new study could be targeted on the emerging research questions over the next several years more effectively than it is in existing surveys. A second argument for a new survey is that a new, comprehensive household panel could bring multiple important domains together. As emphasized in many of the papers and in the discussion at the conference, individual, family, and household behaviors have to be considered holistically for a complete understanding (e.g., family processes and labor market behaviors are interdependent), and a survey which only had a subset of the major domains would therefore necessarily be incomplete and inadequate. A third

argument is that a new survey could take advantage of everything that has been learned about the collection of biomarkers, setting up linkages for administrative data, maintaining and assessing the representativeness of the survey's respondents, incorporation of mixed modes and Internet surveying, and interviews of multiple persons within the household. A fourth rationale for a new survey is the need to situate a national sample within the current changing policy and demographic landscape, especially with regard to the emergence of the new minority/majority in the United States.

Against these major advantages of a new survey are limitations, many of which also apply to potential modifications to existing studies (or what we call "enhancements" below). First, ensuring sufficient sample size to fulfill the goal of a single, comprehensive, general-population survey which attempted to cover all major segments of U.S. society, with sufficient sample sizes to study important subgroups, is a central challenge that a new survey would face. Getting cooperation from each adult or near-adult member of the included household (as several authors recommend for data collection in their domains) only adds to this challenge.

Second, the breadth and depth of measurement of the key interlocking domains would require a lengthy instrument. Any new study must be concerned with limiting respondent burden. Existing surveys have worked hard to limit interview length because of that concern. A new multi-domain survey would face the same problem. Some of the barriers to a new survey could be addressed by restricting the core modules of a survey to the most critical items and reserving many of the other areas to periodic topical modules. However, that would mean that information on many important domains might be gathered relatively infrequently. Other barriers could be addressed by oversampling either on particular geographic areas or on particular demographic subgroups, but such oversampling necessarily weakens statistical power for general population inferences and requires a strong prior that some areas and groups will be of lesser interest than others going forward. These concerns required compromises in the design of existing panel studies, just as they would require compromises in the design of a new household panel study.

An alternative approach to a new general-population household panel survey would be one targeted on one or two specific domains, with coverage of the other domains in less detail. The Steering Committee believes that at least two areas might be considered for such a new survey. One is in the area of child and adolescent development, and the other is in the area of health and

health care throughout life. Both of these subject areas have been the subject of intense and rapidly developing research over the last decade. The importance of child and adolescent development for adult outcomes has been repeatedly demonstrated and yet much more needs to be known to fully understand the mechanisms, pathways, and dimensions of development and its linkages to adult outcomes. The importance of physical and mental health to both child development and to adult functioning has never been as recognized as it is today, for it permeates all aspects of individual and family behavior and at all levels of the socioeconomic status distribution (but especially at lower levels of that distribution). Moreover, understanding the key drivers of health is an important social and policy goal. Providing answers to this question will necessitate integrating health with other domains.

In addition to the relatively recent and increasing scientific recognition of these two domains, policy makers have been actively addressing them both. Improvements in preschool education, in K-12 education, and in postsecondary educational offerings have been the subject of many policy proposals both in Washington and in the states and cities, and this policy discussion shows no signs of slowing down. Recent health care legislation has focused on the long-standing problem of lack of health insurance coverage and there are important questions on the impact of these changes on health status. Growing interest in understanding how a range of policies, including social, economic and family policies, may have important effects on health status adds to the significance of new research in these domains. The Steering Committee believes that these subject areas deserve special attention.

Finally, however, as stressed above, the authors of the papers offered dozens of important and valuable enhancements and improvements to existing surveys. Implementing a significant fraction of those changes would result in major improvements in our knowledge of the various domains and in our ability to address many of the critical research questions going forward. Virtually all the proposals for improvement, most of which are listed in Table 1, would be worthy of support and the implementation of all of these would constitute a transformation of the landscape of existing panels in the U.S. Implementation of these enhancements would still require considerable investment, but probably less than the cost of launching a new panel study and with a more immediate return on the investment. The Steering Committee therefore recommends that enhancements and improvements in existing surveys be given an especially

high priority.

In summary, the Steering Committee identified three broad options:

- 1) Developing a new household panel with a broad focus
- 2) Developing a new household panel focused on one or more specific domains
- 3) Enhancing and extending existing panels

The first two options require major investments at a time of shrinking funding for research, and require time for the panel to mature before many of the payoffs are realized. However, as described above, a new panel may offer the opportunity for new scientific discovery. The first option represents the greatest potential for such new discovery as well as the opportunity to transform the way panel surveys are conducted but also presents the biggest challenge in terms of the breadth and depth of content. For such an ambitious design to work, researchers interested in specific domains must sacrifice much of the detailed information they would like to collect in order to cover a variety of domains for cross-domain discovery. This trade-off of breadth versus depth is a critical challenge for managing any such panel. James House articulates this trade-off well in his paper: “If all we want to do is further research in each of [the research areas], we can probably do so more cost-effectively by refining and selectively expanding existing infrastructures for data collection and analysis in each area. However, if we want to understand the crucial, potentially reciprocal and/or interactive, effects that operate across areas, we need a mechanism that generates data on all areas on the same set of individuals and their social contexts, ideally longitudinally and for a nationally representative population.” While the Steering Committee concluded that the third option of enhancing and extending existing panels deserved especially high priority, particularly in light of the current funding climate, the first option potentially represents the biggest opportunity for scientific discovery and to transform the design and execution of panel surveys. In regards to the latter, household panels around the world (e.g., Understanding Society and the German Socioeconomic Panel) are struggling with the challenge of adapting the existing designs to take advantage of new methods of data collection (most notably the Internet). Starting from scratch could lead to a panel survey design that is well positioned to take advantage of these developments from the outset. In summary, while the Steering Committee thinks the third option deserves especially high priority, NSF is



encouraged to think about ways that the first option could be explored further.

We should note that the authors of the papers from the conference were intentionally not asked to take cost into consideration in their recommendations in order to focus exclusively on the scientific issues involved in thinking about existing U.S. panels, possible enhancements to them, or new panels. However, during the conference many of the attendees emphasized the high value of existing panels in the United States. Those panels have yielded, and are continuing to yield, invaluable scientific knowledge about American society in ways that inform public policy debates. For that reason, any new data collection efforts, whether for a new panel or enhancements to existing panels, should come from additional resources rather than from resources committed to existing panels.

APPENDIX A  
**Assessing the Need for a New Nationally  
 Representative Household Panel Survey in the United States  
 June 5-6, 2014  
 Renaissance Hotel, DuPont Circle**

**Thursday, June 5**

7: 30-8:00	Continental breakfast
8:00-8:30	Welcome and objectives of conference, Robert Moffitt
8:30-9:30	<i>Family support processes from young adulthood through later life</i> Judith Seltzer Discussant: Merril Silverstein
9:30-10:30	<i>Social networks and social capital: New directions for a household panel survey</i> Ben Cornwell and Laura Tach Discussant: Barbara Entwisle
10:30-10:40	Break
10:40-11:40	<i>Income, program participation, poverty, and financial vulnerability: Research and data needs</i> James Ziliak Discussant: David Grusky
11:40-11:45	Move to concurrent sessions
11:45-12:45	Concurrent sessions: <ol style="list-style-type: none"> <li>1. <i>Genotyping a new national household panel study</i> Dalton Conley Discussant: Dan Benjamin</li> <li>2. <i>Measuring time use in household surveys</i> Erik Hurst Discussant: John Robinson</li> </ol>
12:45-1:15	Lunch
1:15-2:15	Concurrent sessions: <ol style="list-style-type: none"> <li>1. <i>Family formation processes: assessing the need for a new nationally representative household panel survey in the United States</i> Wendy Manning Discussant: Kelly Musick</li> <li>2. <i>Household consumption: Research questions, measurement issues, &amp; data collection strategies</i> Luigi Pistaferri Discussant: David Johnson</li> </ol>
2:15-2:20	Move into plenary session
2:20-3:20	<i>Human capital, education, achievement, and learning</i> Chris Robinson

Discussant: Sue Dynarski

3:20-3:30 Break

3:30-4:30 *Physical health and health behavior*  
Nancy Adler, Chris Bachrach, & Aric Prather  
Discussant: Bob Wallace

4:30-5:30 *Measuring physical function and cognitive abilities of adults:  
Survey enhancements and options for a new panel study*  
Carlos Mendes de Leon and Vicki Freedman  
Discussant: Linda Martin

7:00 Dinner at *Grillfish*, for presenters & discussants (1200 New Hampshire Ave)

**Friday, June 6**

7:30-8:00 Continental breakfast

8:00-9:00 *Empirical evidence in the study of labor markets:  
Opportunities and challenges for a new household survey*  
Dan Black, Lowell Taylor, and Melanie Zilora  
Discussant: John Abowd

9:00-10:00 *Wealth, pensions, debt, and savings: considerations for a panel survey*  
Brian Bucks and Karen Pence  
Discussant: Matthew Shapiro

10:00-10:15 Break

10:15-11:15 Concurrent sessions:

1. *Advancing the science of child and adolescent development:  
Do we need a new household survey?*  
Terri Sabol, Lindsay Chase-Lansdale & Jeanne Brooks-Gunn  
Discussant: Tim Smeeding

2. *Assessing the need for a new household panel study:  
health and healthcare*  
Helen Levy  
Discussant: Sherry Glied

11: 15-11:20 Move into plenary session

11:20-12:20 *Housing and neighborhoods and a new national household panel*  
Lincoln Quillian and Jens Ludwig  
Discussant: Tama Leventhal

12:20-12:50 Lunch

12:50-2:05 Challenges and considerations in designing a national survey to meet the scientific objectives  
Mike Brick; Kristen Olson

2:05-2:20 Break

2:20-3:50 Should the US create a new household panel survey?  
James House; Shelly Lundberg; Kelly Raley

Table 1. Enhancements that existing surveys should consider.

Design feature/content	Authors who recommended design/content
<b><u>SAMPLE</u></b>	
For PSID, immigrant refresher & larger sample of Hispanics & 1 Asians	Adler et al.; Quillian & Ludwig; Ziliak
<b><u>COLLECTION &amp; PROCESSING METHODS</u></b>	
2 Encourage respondents to use financial records	Bucks & Pence
3 Dependent interviewing for wealth	Bucks & Pence
4 Invest more in data editing for wealth	Bucks & Pence
5 Real-time edit checks for wealth	Bucks & Pence
Screens that translate dollar amounts to text that is read back to the 6 respondent for confirmation	Bucks & Pence
More accurate measures of income, including development of best 7 practices for measurement.	Ziliak
<b><u>CONTENT</u></b>	
<b><u>Health, cognition</u></b>	
8 Mental health	Adler et al.

9 Health events, injuries, hospitalizations	Adler et al.; Mendes de Leon & Freedman
10 Measures of participation and participation restrictions in work, school, social, and civic life	Mendes de Leon & Freedman
11 Home environment	Mendes de Leon & Freedman, Sabol et al
12 Work environment (e.g., built environment, control, safety, stress)	Mendes de Leon & Freedman; Adler et al
13 Macro-environmental measures	Adler et al.; Quillian & Ludwig
14 Meso-environmental factors such as subjective perceptions of neighborhood safety and collective efficacy, conditions at school	Adler et al.; Sabol et al
15 Cognitive ability	Adler et al.; Black & Taylor; Levy; Mendes de Leon & Freedman; Sabol et al
16 Perceived social status, psychological stress, and discrimination, self-regulation, conscientiousness, risk aversion, discount rates, positive and negative affect, control and mastery, positive or negative expectations, resilience or reserve capacity	Adler et al.; Black & Taylor; Pistaferri
17 Link to external data including health insurance exchange	Levy
18 Health behaviors like diet, drug use, and sleep.	Adler et al.
19 Drug and alcohol addiction	Ziliak

20 Subjective life expectancy	Levy; Pistaferri
21 Health care service utilization and barriers, usual provider of care	Adler et al.; Levy Mendes de Leon & Freedman
22 Sensory limitations	Mendes de Leon & Freedman
23 Self-reported pain	Freedman
24 Actigraphy for measurement of activity and sleep	Adler et al. Mendes de Leon & Freedman
25 Physical performance	Freedman
26 Biological measures of disease and health	Adler et al.; Levy
27 Genotyping	Conley; Adler et al
28 Neuroimaging a small, strategically select subset of respondents	Adler et al.

**Labor markets**

Links to firm data or survey of respondents' firms to obtain 29 information such as employment practices	Black & Taylor
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**Wealth**

30 Varous enhancements specific to PSID	Bucks & Pence
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**Time use**

Measures of time use from diaries for all household members;  
31 include time use at work

Hurst; Sabol et al

More stylized questions about time use such as childcare,  
32 commuting, elder care

Hurst; Pistaferri; Sabol et  
al

Design feature/content	Authors who recommended content
<b><u>CONTENT, Continued</u></b>	
<b><u>Income &amp; poverty</u></b>	
33 Link to external data including food stamp and TANF data	Levy Quillian & Ludwig
34 Whether housing payments had to be skipped	
35 Expand links to administrative data containing income information such as tax records, Social Security earnings, and benefit programs	Ziliak; Robinson
36 Separately identifying receipt of SSDI from Social Security	Ziliak
37 Identifying who within the household/family receive benefits from various programs	Ziliak
38 USDA 18 item food security module	Ziliak; Adler et al, Sabol et al
39 Acute material hardship (e.g., utility shutoff, eviction, homelessness)	Ziliak, Sabol et al
40 Incarceration	Ziliak
<b><u>Children, families &amp; social networks</u></b>	
41 "Child/relationship pointers" or household relationship matrix instead of or in addition to relationship to head	Manning
42 Sexual and dating relationships	Manning
43 Relationship quality & quantity	Manning; Adler et al, Sabol et al, Seltzer
44 Whether birth was intended	Manning



45 Multi-partner fertility	Manning
46 Nonresident parents/children	Manning, Seltzer
47 Attitudes and expectations of family behavior	Manning, Seltzer
48 Names and attributes of ~5 core confidants	Tach & Cornwell
49 Whether connected to people who occupy certain positions and/or possess certain resources	Tach & Cornwell
50 Mode of communication via technology & use of online networking sites	Tach & Cornwell
51 Obtained access to social media accounts	Tach & Cornwell
52 Roster of coresident & noncoresident biological & nonbiological children, parents, and siblings plus various attributes of each	Seltzer, Tach & Cornwell
53 Frequent measurement of transfers with nonfamily and family - step, adoptive, & biological - both coresident and noncoresident	Seltzer
54 For children: Regular measurement of children's functioning in cognitive/achievement, socio-emotional, motor, language, executive functioning, health, health behaviors, sleep, stress, motivation, school engagement, biomarkers and genetics	Sabol et al

For parents: mental health, stress, personality, executive functioning, motivation/grit, cognitive functioning, healthy behaviors during pregnancy, parent – child relationships, parenting skills, coparenting skills,  
55 biomarkers and genetics Sabol et al

**Neighborhoods & housing**

Residential history between waves (with address)  
56 including even short spells and reason for the move Quillian & Ludwig  
57 Where parents and grandparents were born Quillian & Ludwig  
58 Location of work Quillian & Ludwig  
59 GPS tracking device Quillian & Ludwig  
Housing conditions including crowding, privacy, space,  
60 experiences with discrimination, neighborhood Ludwig; Adler et al  
61 Links to real estate data bases like Zillow Quillian & Ludwig  
62 Whether on the waiting list for subsidized housing Quillian & Ludwig  
Use of Google Street view or other similar technologies  
63 to measure neighborhood characteristics Quillian & Ludwig  
64 Commuting Quillian & Ludwig  
65 Location of relatives and friends. Quillian & Ludwig

**Education, human capital**

College-related questions: Currently enrolled, part-time/full-time, name & type of institution, tuition, financial aid (link to official measures if possible), familial financial support, major, grades, re-payment of	Robinson; Sabol et al;
66 loans/default (link to official measures if possible)	Seltzer
Primary/secondary schooling attributes: Class grades,	Robinson;
67 school and peer quality measures link	Sabol et al
Early childhood investments and outcomes: parental	Robinson;
68 time and goods input, pre-school, daycare, test score	Sabol et al
Beliefs/perceptions/information sets regarding labor	Robinson;
69 market outcomes	Sabol et al
70 Post-school training and skill development	Robinson; Sabol et al
71 Literacy and numeracy measures	Robinson; Sabol et al
72 Links to administrative data on schools	Robinson; Sabol et al

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