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Age and Time Population Differences: Young Adults, Gen Xers, and Millennials

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Abstract: Age and Time disparities in young adult research populations are common because young adults are defined by varying age spans; members of Generation X and Millennial generations may both be considered young adults; study years vary, affecting populations; and qualitative methods with limited age/year samples are frequently utilized. The current theoretical analysis brings population differences to the forefront by a) identifying Age and Time differences among Young Adults, Gen Xers, and Millennials, b) demonstrating associations vary by Age and Time, and c) directly comparing findings for several commonly researched measures (i.e., Race, Education, Marriage, Parenthood, Employment, Income, Computer Use, Social Trust, and Prayer). Information presented advances the perspicacious assessment of young adult studies.

Population Differences: Young Adults, Gen Xers, and Millennials

Literature offers an abundance of resplendent young adult descriptions and characterizations. The less loyal, computer literate, more pessimistic, attention-seeking young adults of Generation X (Gen Xers) were described in *Generation X: What They Think and What They Plan to Do* (Losyk, 1997). Howe, Strauss, and Matson (2000) painted a picture of trusting, cooperative, better educated, and more affluent young adult Millennials. Arnett and Schwab (2012) enlightened understandings of striving, struggling, and hopeful emerging adults.

According to Arnett (2012), the “humorous, poignant, and mortifying” (p.45) experiences of *lady-children*, situations of common sitcom fodder, accurately portray young adult female realities.

Young Americans have traditionally been researched in age groups and in generational cohorts (Howe & Strauss, 2007; Strauss & Howe, 1991), and emerging adulthood (Arnett, 2004) is a growing area of research. (The terms emerging adults and young adults were used interchangeably in the present article.) Reliable pathways towards independent adulthood are built on a foundation of better understandings of who young adults today are demographically and psychosocially. Research-based descriptions of young adults hold individual and societal interest in the development of adult transitioning Americans. Decisions and directions chosen in emerging adulthood shape individual futures and can last lifetimes. As America grays (Taskforce on the Aging of the American Workforce, 2008), promoting independent adulthood through young adult research has potential for informing America’s largest government programs and social policies (Tishman, Looy, and Bruyère, 2012). The accuracy of young adult characteristics and features, then, is vitally important.

Age and Time disparities in young adult research populations are common because a) young adults are defined by different age spans, b) members of Generation X and Millennial generations are both identified as young adults, c) studies use different years of data, and d) qualitative methods with limited age/year samples are frequently utilized. Age and Time population differences are overlooked or marginalized in broad generalizations. Characteristics and defining features may be painted with broad-brush strokes over a vaguely defined population of today’s young adults or the latest generation of Americans. Kowske, Rasch, and Wiley (2010) observed, “There is a dearth of empirical generational research in which results have been both

complementary and contradictory” (p. 3). Comparing findings and replicating results are challenging when studies with limited age/year samples were generalized to all young adults or an entire *new* generation.

Interpretations vary according to theoretical lens, and viewpoints are sometimes ardently debated. Hendry and Kloep (2007), for example, depicted Arnett (the modern developmental theorist who has postulated Emerging Adulthood Theory) as a researcher failing to see the obvious— an emperor without clothes in need of redressing. Arnett (2007), with seemingly more restraint, evoked the maxim of John Godfrey Saxe’s (1873) legendary 19th century poem in his comparison of theorists with varying interpretations to three blind men grasping “different parts of the same beast” (Arnett, 2007, p.80).

Young Adults, Gen Xers, and Millennials may share commonalities, but a purpose of the work at hand was to identify Age and Time distinctions among young adult groups and explore the effects of Age and Time on young adult research findings. An overarching proposition was study ages (birth years) and study year(s) influence the research-based characteristics and traits of young adults, in recent data with ages 18 to 29 years. Empirical methods with national social survey data were utilized to verify that young adult research findings varied according to Age and Time population differences. A goal was not to establish young adult trends or predict the effects of particular Ages and Times, for specific measures. Three research questions guided the theoretical inquiry:

- a) How do Young Adult (18 to 29-year-olds), Gen Xer, and Millennial populations differ by Age (birth year) and Time (survey year)?

- b) Do Age and Time differences in young adult (18 to 29 years) populations affect associations with a demographic measure (i.e., Income) and a psychosocial measure (i.e., Prayer) in recent data (2000-2012)?
- c) How do findings for several commonly researched measures (i.e., Race, Education, Marriage, Parenthood, Employment, Income, Computer Use, Social Trust, and Prayer) vary among Young Adult, Gen Xer, and Millennial populations in recent data?

A review of literature was woven throughout a study framework. Age, Generation, and Age and Time Hypotheses were discussed in the Conceptual Review section. Age and Time differences in 18 to 29-year-old Young Adult, Gen Xer, and Millennial populations were diagramed on Table 1. Prayer Means were charted by each age of emerging adulthood (Figure 1), and Income Means for 18 to 29-year-olds were charted by each year (2000-2012) (Figure 2). Dependent measures were compared by young adult groups on Table 2. The Results section was followed by a conclusion.

Conceptual Review

Is age group, life stage, or generation the best theoretical lens to study young adults? The best approach for studying young adults is methods best tailored to answers specific research questions and a theoretical framework that most firmly grounds findings and expands scholarship. Demographic studies on differences over time in young adult transitioning age groups, generational comparisons, and qualities studies on the essential features of emerging adults all make substantial contributions to the field of young adult research. A generational approach may be best suited to a longitudinal examination of spanking beliefs in young parents, for example. Examining changes over time in 17 and 18-year-old high school senior is also informative. For other purposes, such as helping parents better understand differences between

themselves at age 20 something and their 20 something year-old today, emerging adult theory offers substantial benefit because it encompasses recognition of economic and social changes.

A systematic review of Age and Time differences in young adult populations advances an informed assessment of young adult research from varying theoretical lens. Kowske, Rasch, and Wiley's (2010) study of generational differences in work values is the only young adult research study known to directly consider "age and period effects" (p. 1). Putnam (1996) considered Life Cycle, Period, and Generational effects on civic engagement, but not enough years of data was available in 1996 to compare young adult Gen Xers and Millennials or capture the unprecedented social and economic changes associated with emerging adulthood (Arnett, 2004). A three-fold purpose of the current study purpose was as follows: a) Identify age, birth year, and study year differences among 18 to 29-year-old Young Adults, Gen Xers, and Millennials; b) empirically demonstrate the effects of Age and Time on two selected measures (i.e., Income and Prayer); and c) observe and compare findings evident in 2000-2012 American social survey data among Young Adults, Gen Xers, and Millennials on nine measures (i.e., Race, Education, Marriage, Parenthood, Employment, Income, Computer Use, Social Trust, and Prayer).

Age

Age ranges used in Young Adult studies have varied. Rumbaut (2008) and Rumbaut and Komaie (September 1, 2007) observed differences by adult transitioning stage— early transition (18 to 24 years), middle transition (25 to 29 years), and late transition (30 to 34 years). Arnett (2000) defined emerging adults as 21 to 28-year-olds. Arnett (2013) defined ages for the emerging adult life stage as 18 to 25 years. Arnett has defined emerging adults as 18 to 29-year-olds in *Young Adulthood: The Winding Road From the Late Teens Through the Twenties*

(Arnett, 2004), the Cosmo Question (Arnett, 2012), and the Clark University Poll (Arnett & Schwab, 2012).

Young Adults were defined as 18 to 29-year-olds in the current study. Many social policies establish 18 as the first age of adulthood (i.e., driving, seeing an R rated movie). The upper age boundary was 29 years. According to Arnett (2004), “The lives of most 20-year-olds are vastly different from the lives of most 30- or 35-year-olds, and it is not fruitful to lump them all together into one stage” (p. 80-81). Rindfuss (1991) supported this sentiment with the observation of an overwhelming feeling that 30 “marks the end of something” (p. 494).

Generation

Comparing research findings among generational studies of young Americans is nebulous because generational birth years are not standard, and populations studied change according to selected generational birth years. A Google Scholar search by relevance for Millennials yielded the following top three sources: Millennials Rising: The Next Great Generation (Howe, Strauss, & Matson, 2000) with 1,588 citations, Boomers Gen-Xers Millennials (Oblinger, 2003) with 757 citations, and Millennials go to College (Howe & Strauss, 2007) with 333 citations. Oblinger (2003) defined Millennials as those born in 1982 or after. Birth years for generations used in the current study were the same as those used by Howe, Strauss, and Matson (2000) and Howe and Strauss (2007): 1974 through 1981 for Gen Xers and 1982 through 1998 for Millennials.

It is important to note year(s) of research when generational groups are referred to by age ranges, rather than birth years. One edifying example is the Stress in America report from the American Psychological Association (APA). The 2007 Stress in America report observed stress levels in 18 to 34-year-old *young people*, while also referring to 35 to 54-year-olds as the sandwich *generation*. The term generation was used loosely, and stress levels were compared by

age cohorts in the 2007 report. The interpretive lens of the report changed from age groups to generational groups in 2008. The 2008 Stress in America report compared stress levels between 30 to 43-year-old Gen Xers and 18 to 29-year-old Millennials. Using the same birth years as in 2008, the 2012 report compared stress levels of 34 to 47-year-old Gen Xers and 18 to 33-year-old Millennials. Age ranges for Gen Xers in the 2012 report overlapped with ages used for the sandwich generation in 2007. Millennials in the 2012 report may better represent trends for young Americans; however, this requires conceptualizing 30 to 33 year-olds as young Americans. According to definitions in the current study, young adult Gen Xers were 27 to 29-year-olds in 2008 and there were no young adult Gen Xers in 2012. Young adult Millennials in the current study were 18 to 26-year-olds in 2008 and 18 to 29-year-olds in 2012 (Table 1).

Gen X and Millennial populations in the current investigation of Age and Time differences in young adult populations were also controlled for ages 18 to 29. Controlling generational cohorts with age ranges may be considered a study limitation, however, it is more accurately a study justification. From the changes Millennials bring with them to universities (Howe & Strauss, 2007) to parenthood for Gen Xers (Shelton & Shelton, 2005), literature is replete with Young Adult characterizations interpreted from a generational framework that was qualified by age. Understanding differences between a 5-year-old Gen Xer and a 5-year-old Millennial may hold some research value, for example, but the greater relevance, the one with societal implications, is understanding how generation shades the traits of *adult* birth year cohorts. When research reports on Millennials in college, for example, the general understanding is that 12-year-old Millennials were not included in the study population. Maturation, as well as the standardized adult ages of social policies, limits generational groups when studying differences in young adults. For example, when observing characteristics of Gen X parents, study

populations most likely included more cases from those Gen X birth years corresponding to common childbearing ages during the years of the study, rather than 47-year-old Gen Xers. The current investigation directly confronts age differences in *young adult* Gen X and Millennial populations.

Age and Time Hypotheses

When defining a young adult study population there is more to consider than simply including or excluding ages (or birth years). A study of 18 to 22 year-old young mothers, characteristics of high school seniors, or disaster preparedness in 25 to 29 year-olds in 2006 are all valid young adult studies. However, a few to several age/year samples of 18 to 29-year-old young adults are excluded by birth year and survey year limitations (Table 1). These exclusions not only affect population size, but also set proportions of younger and older 18 to 29-year-olds and proportions by survey year(s) in the study population.

Age and Time disparities in young adult populations connect to young adult *generational* differences because generations are defined by birth years. Changing traits and characteristics over time is an underpinning of Generational Theory. Millennials, for example, are younger and from more recent survey years than Gen Xers. According to Kowske, Rasch, and Wiley (2010), “The relationship between age, period and generation makes isolating the effect of a single variable, such as generation, difficult” (p.3). A hurdle to cross when interpreting Young Adult findings from a generational framework is to discern to what degree findings for particular measures by generation capture the effects of more dominate Age or Time patterns.

An intention of the current work was not to criticize Age and Time limitations of young adult studies, but to bring Age and Time population disparities to the forefront. Age and Time differences are not considerations only for young adult qualitative studies. Although, for

example, young adult populations of case studies may have limited age/year representation, the essential features of emerging adulthood were repeatedly observed through numerous qualitative studies over a decade. Selected ages and limited study years are only research flaws if they are kept hidden in generalizations to broader populations. The effects of Age and Time disparities in young adult populations can be substantial and more easily overlooked when data from reputable, national surveys are utilized, such as General Social Survey (GSS), Integrated Public Use Microdata Series (IPUMS), and the American National Election Survey (ANES). For example, the proportion of 18 to 25-year-olds who believed people were trustworthy in GSS data was 28%, compared to a 16% trusting proportion of 18 to 25-year-olds in ANES data. Central to practical implications of the current study, young adult research findings are expected to differ when proportions in a population differ by ages and study years, even in current years of research and ages limited to young adult ages.

Age Hypothesis

Differences by age were expected. Older young Americans (25 to 29-year-olds) have more years of schooling, for example, than 18 to 24-year-olds, not because they hold a higher value for education, but because they have had more years of living available to them in which to gain more years of schooling (Author & Author, 2011). Rumbaut and Komaie (2007) observed a host of differences (i.e., economic status, educational attainment, ethnicity, marital status, and parenthood) by adult transitioning age groups (i.e., early, middle, and late). Whether the 18 to 22-year-old sample was 10% of an 18 to 29-year-old survey population, such as with Integrated Public Use Microdata (IPUMS), or the 18 to 22-year-old sample was 36% of the population, as with GSS data, is expected to exert some degree of effect on results.

It follows, a hypothesis of the current study was population age indirectly affects young adult research findings. In Kowske, Rasch, and Wiley's 2010 study, for example, the younger Millennial sample was only four percent of the study population, compared to thirty-five percent for Gen Xers. Ages of young adults are limited to high school seniors in studies utilizing Monitoring the Future data (e.g., Trzesniewski & Donnellan, 2010; Syvertsen, Wray-Lake, Flanagan, Wayne Osgood & Briddell, 2011). The issue of generalizing to an 18 to 25 or 29-year-old young adult population aside, Putnam (1996) noted, "individuals change as they age" (p. 10). Kowske, Rasch, and Wiley (2010) observed, "An age effect is variation due to physiological growth, progression through developmental stages, and accumulation of experience" (p.3). Representing young adults with data from 17 and 18-year-olds, even with repeated measures over time, presumes maturation changes during young adulthood are similar for emerging adults as they were for older adults when they were younger (life stage comparisons). In generational comparisons with age group proportion disparities, such as a 2008 study where the proportion of 18 to 25 year-olds were larger for Millennials than Gen Xers, the assumption is Gen Xers and Millennials change similarly between ages 18 and 29 years.

Time Hypothesis

A recurrent theme of young adult research is things are different for young adults today. Furstenberg, Rumbaut, and Settersten (2004) observed a "cultural and economic shifts that are forcing youth to adapt in new ways" (¶ 4). According to Arnett (2004), "Today, the life of a typical 21-year-old could hardly be more different" (p. 3). The indication for research is time exerts an influence, to some degree, on young adult beliefs and behaviors, traits and characteristics. A second hypothesis was research findings for young adults are indirectly affected by Time (operationalized as years of survey). Kowske, Rasch, and Wiley (2010) defined

period effects as “variation due to historical events that occur at a specific point in time (e.g., war, technological advances)” (p. 3-4). Whether a 1970’s sample was five percent of a 1970’s through 2000’s survey year population, such as with IPUMS, or the 1970’s sample was nineteen percent of the population, as with GSS data, is expected to affect results.

The effects of Time can be gradual or intense, and can differ by measure. There may be little difference between one study year and the preceding or following year for a particular measure, or there may be considerable difference. For example, young adult trust levels have dwindled over time (Author, 2010), but upswings in trust for young adults were observed following September 11, 2001 (Author, 2011). According to Putnam (1996), “Period effects can produce both individual and aggregate change, often quickly and enduringly” (p. 10). Many young adult studies, such as the Clark University Poll (Arnett & Schwab, 2012), utilize one year of data. Using the most recent year to track current characteristics and behaviors can be enlightening. The problem with using one year of data in identifying enduring young adult characteristics or trends is the imprecision in determining whether period effects are linear (i.e., just another year of more different), the beginning of a difference (perhaps, the beginning of a new generation), or an isolated period effect.

Age and Time Effects

The “the linear relationship between age, period, and generation” (Kowske, Rasch, & Wiley, 2010, p. 3), is not strictly linear for all measures. For example, an expectation may be that 20-year-olds have more years of schooling than 18-year-olds, but would the prediction of 29-year-olds having more years of schooling than 27-year-olds be as confident? Another example, American educational attainment levels may have risen in each decade, but considering the

effects of a 2001 recession, educational attainment may not have risen as sharply between 2000 and 2002.

It is not only varying proportions of young and older ages or varying proportions by study years that influence findings. The “the linear relationship between age, period, and generation” (Kowske, Rasch, & Wiley, 2010, p. 3) is intertwined. Period effects may differ by age group, and the influence of particular age/year effects are difficult to predict. For example, college tuition may have been a greater financial hardship for all Americans in the 2000’s because of a recessed economy, but 18 to 24-year-olds may have been more vulnerable to the effects of economic downturn on college attendance. Another example, will the upswings in trust observed for young Americans post 9/11 remain with the age cohort of 9/11 young Americans— perhaps signaling the rise of more civically engaged Millennials?

Methods

As a first step in the investigation, Age and Time differences in Young Adult, Gen X, and Millennial populations were diagramed (Table 1). Next, the effects of Age and Time were empirically established. In other words, the notion that Age and Time population differences, as diagramed on Table 1, could affect young adult research findings was confirmed. A final step was to directly observe and compare findings for commonly studied measures among Young Adult, Gen Xer, and Millennial populations.

Data Source

General Social Survey (GSS) (Smith, et al., 1972-2012) was the data source utilized. Quantitative methods, in particular secondary analysis of national social survey data, may not give as rich descriptions of or voice to emerging adults as would qualitative methods, but GSS data held significant advantages. General Social Survey data is ideally suited for identifying

American trends, such as changing attitudes and behaviors of young adults over time or the emergence of a new life stage. The GSS has adequate four-decade samples (frequency ranges between 34 and 406) for each young adult age (i.e., 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, and 29 years). Age groups, birth year cohorts, and survey year groups were efficiently controlled for comparisons. Age and Time effects were investigated in several measures because of the availability of numerous survey variables.

The GSS is second only to the United States census (Current Population Survey) as the most popular data set in top sociology journals (National Science Foundation, 2007). English speaking Americans (excluding Alaska and Hawaii) between ages 18 and 89 years (or older) were surveyed every two years in the standard GSS replicating core and topic modules, with Spanish speaking Americans included since 2006 (Smith, Marsden, Hout, & Kim, 2011). Full probability sampling on the United States population was utilized in survey years 2000-2012. Probability sampling promotes generalization to the American population. A survey weight was applied throughout, and .05 was the threshold of statistical significance.

Variables

Birth years were displayed by age for 18 to 29-year-olds in survey years 2000-2012 to observe differences among groups (Table 1). Young Adults, Gen Xers, and Millennials were defined for analyses with independent and filter variables for survey year, age, and birth year cohort. Defining Young Adult populations as Gen Xers and Millennials limited ages and years of cases analyzed, as shown by shading on Table 1. Ages and years were frequently controlled for specific ages and years, depending on analyses (e.g., 18-29 years, 2000-2012). The following nine dependent measures were utilized in cross-tabulations: Race, Education, Marriage,

Parenthood, Employment, Income, Computer Use, Social Trust, and Prayer. Measures, descriptions, and dichotomizing techniques (if any) were noted on Table 2.

Level of income (Income) and frequency of prayer (Prayer) were two dependent measures selected for multiple regression analyses to demonstrate changing association with Age and Time. Income was a demographic measure, and Prayer connected to psychosocial traits. The 12 categories of Income ranged from less than \$1,000 to \$25,000 or more. Prayer was recoded so that frequency of prayer rose in each category. The six categories of Prayer were 1) Never, 2) Less than once a week, 3) Once a week, 4) Several times a week, 5) Once a day, and 6) Several times a day. Survey year (Time) spanned 1972-2012, but Prayer was only in survey years 1983-2012.

Analysis

Multiple regressions were utilized because controls for varying Ages and Times could be applied and changes in the strengths and directions of associations observed. Income, Prayer, Age, and Year were continuous variables, and standardized Beta coefficients were observable. Independent regressions were repeated for age and year categories. A regression model was utilized to observe changes in strengths and directions of associations with Age and Time. The Beta coefficient (B) measured the predictive value of independent measures (i.e., Age or Time) on the dependent measure (i.e., School or Prayer). Beta coefficients, Standard Errors, and significance levels were noted in discussions.

A Comparison of Means procedure was utilized to observe changing Means and Confidence Intervals. Prayer Means were charted on Figure 1, and Income Means were charted on Figure 2.

The Means of nine dependent measures were compared by cross-tabulations in Young Adult, Gen Xer, and Millennial groups on Table 2. The independent measure was Age (18 to 29 years). An analysis filter was Time (survey years 2000-2012). A second filter in analyses for Gen X (1974-1981) and Millennials (1982-1998) was birth year cohorts. To improve significance levels, birth year cohort was the independent measure, and Age and Time were filters in some analyses. Means and Standard Deviations (or proportions= 1) were noted on Table 2. See appendix for additional statistics.

Results

Insert Table 1

Age, Birth Year, and Study Year Differences in Young Adult Populations

Gen Xers had more 25 to 29-year-old young adults, and Millennials had more 18 to 24 year-olds. Gen Xers included more cases from 2000-2004 (seven to eight birth years), and Millennials included more cases from 2006-2012 (seven to twelve birth years). It is not correct to assume Young Adults (18 to 29-year-olds) are the same as Millennials in 2000-2012 because 19 to 29-year-olds born between 1971 and 1981 are excluded in the Millennials population.

Young Adults

Defining Young Americans as those between ages 18 and 29 years and filtering for 2000-2012 limited birth years to 1971-1994. A 29-year-old in 2000 (born in 1971) was at the lowest birth year boundary for Young Adults, and an 18-year-old in 2012 (born in 1994) was the upper birth year boundary (Table 1). The Young Adult population was largest, with a total sample size of 3,428. Young Adults represented 18% of the survey population in 2000-2012. The average age of Young Adults was 23.92 years.

Gen Xers

Gen Xers were defined as those born between 1974 and 1981. Age ranges for Generation X in 2000-2012 were 19-38 years, but the study focus was young Americans between ages 18 and 29. Defining Young Adults from Gen X as those between ages 18 and 29 years born between 1974 and 1981 in 2000-2012 data limited survey years to 2000-2010 and reduced survey years for several ages (Table 1). The population size for Gen Xers in the current study was 1,727—about half the number of Young Adults. Average age for young adults from Generation X was 25.19 years.

Millennials

Millennials were defined as those born between 1982 and 1998. Age ranges for Millennials in 2000-2012 were 12 to 30 years. Survey years of the current study were not more limited for Millennials than for Young Adults, but available age groups for survey years were restricted (Table 1). Analyses for young adult Millennials in 2000-2012 GSS data included 1,510 cases, fewer than that of Young Adults and Gen Xers. Average age for young adult Millennials was 22.15 years.

Age and Time Effects on Income and Prayer

Age Effects

A weak association between Age and Income was revealed for Americans (18 to 89 years and older) in 1972-2012 data ($B = .204$, $SE = .005$, $p \leq .001$). As Americans aged one year their income level increased minimally, in general, from 1972-2012. Age filters were applied. The association between Income and Age was stronger with a filter for 18 to 29-year-olds ($B = .439$, $SE = .010$, $p \leq .001$). The effects of aging on rising income, then, were greater between ages 18 and 29 years. The association between 18 to 24-year-olds and Income ($B = .404$, $SE = .015$, $p \leq$

.001) was stronger than that of 25 to 29-year-olds and Income ($B = .100$, $SE = .015$, $p \leq .001$). An interpretation of findings is associations reflect the steeper rise from lower levels for younger adults.

Prayer was the dependent measure for the next set of multiple regressions with Age. A weak association was found between Age and Prayer for Americans (18 to 89 years and older) in 1972-2012 data ($B = .203$, $SE = .006$, $p \leq .001$). The association was weaker with a filter for ages 18 to 29 years ($B = .028$, $SE = .013$, $p = .036$), and slightly stronger when ages were limited to 25 to 29 years ($B = .040$, $SE = .018$, $p = .030$). The relationship was not significant with a filter for 18 to 24-year-olds. Associations revealed in data suggested age related patterns.

A Comparison of Means confirmed age patterns for Prayer, but it was not an absolute linear pattern (Figure 1). Prayer Means varied by *each age* of Emerging Adulthood. The oldest age group (30 to 89 years and older) had the highest Prayer Mean ($M = 4.37$, $SE = .042$). The age between 18 and 29 years with a Prayer Mean nearest that of Older Americans was 18 year-olds ($M = 4.28$, $SE = .254$). If the association between Prayer and Age were strictly linear, 29-year-olds would be the emerging adult age of highest Prayer Mean. Standard Error was also highest for 18 year-olds than any other Young Adult age (Figure 1).

Insert Figure One

Time Effects

A weak association between Time and Income was found for Americans (18 to 89 years and older) in 1972-2012 data ($B = .332$, $SE = .005$, $p \leq .001$). A filter was applied for year spans. The association between Time and Income, in comparison to 1972 to 2012, was weaker with filters for 1972 to 1979 ($B = .047$, $SE = .015$, $p = .002$), 1980 to 1989 ($B = .108$, $SE = .011$, $p \leq .001$), and 1990-1999 ($B = .069$, $SE = .011$, $p \leq .001$). The association between Time and Income was not

significant with a filter for 2000 to 2012. Economic recession likely affected the association in more recent data. Income Means for 18 to 29-year-olds was observed in 2000-2012 data in Figure 2.

Time was not a significant predictor for Prayer in Americans 18 to 89 years and older. When filters for Time spans were applied, the association (inverse) between Time and Prayer was only significant in 2000-2012 data ($B = -.021$, $SE = .009$, $p = .016$).

Age and Time Effects

Time ($B = -.018$, $SE = .006$, $p = .002$) and Age ($B = .204$, $SE = .006$, $p \leq .001$) were both significant predictors for Prayer in a regression model. Associations between Prayer and Time ($B = -.028$, $SE = .009$, $p \leq .001$) and Age and Prayer ($B = .178$, $SE = .009$, $p \leq .001$) changed minimally with a filter for years 2000-2012. When years 2000-2012 and ages 18 to 29 years were filters, the association between Prayer and Time ($B = -.069$, $SE = .020$, $p \leq .001$) was slightly more inverse, and the association between Prayer and Age was not significant.

Time ($B = .318$, $SE = .005$, $p \leq .001$) and Age ($B = .179$, $SE = .005$, $p \leq .001$) were significant predictors for Income in a regression model. The association between Time and Income was not significant in a model with Age when an analysis filter for years 2000-2012 was applied. The association between Age and Income ($B = .206$, $SE = .009$, $p \leq .001$) was significant in the model with 2000-2012 data. Age ($B = .476$, $SE = .018$, $p \leq .001$) was the strongest predictor of Income in a model with Time when filters for ages 18 to 29 years and years 2000-2012 were applied, and the association between Time and Income ($B = -.048$, $SE = .018$, $p = .008$) became inverse.

A Comparison of Means was employed to observe Income Mean in 18 to 29-year-olds across 2000-2012 data (Figure 2). Income Means for 18 to 29-year-olds varied in each year

between 2000 and 2012. Income Means for 18 to 29-year-olds were higher in each year (2000-2012), compared to a 1972-1999 average. However, Income Means for Young Adults has fallen steadily each year from a 2004 high.

Insert Figure One

Nine Dependent Measures

The chi-square procedure produced statistically significant associations between all dependent and independent measures (Table 2). Findings demonstrated a pattern of Means of 18 to 29-year-olds falling between that of 18 to 24-year-olds and 25 to 29-year-olds. Considering Millennials had the youngest age Mean (22.15 years), Gen Xers (25.19 years) the oldest, and the age Mean for Young Adults (23.92 years) fell between the two, age related patterns were evident in data for all but two measures. Despite having lowest Income Means, Millennials were more satisfied with their Income than Gen Xers and Young Adults. As expected because they were younger, Millennials had fewer children, but *ideal* number of children was highest for Millennials than for all other groups, including Older Adults. An interpretation is generational effects were stronger than age or time effects for the measures of Satisfied with Finances and Ideal Number of Children.

Conclusion

Finding the highest Prayer Mean of all Emerging Adult ages in 18-year-olds was unexpected. A similar finding was previously reported for Trust levels: The proportion of trusting 18-year-olds was higher or equal to trusting proportions of any other Young Adult age (18-29-years) in 1980s through 2000s data (Author, 2011). The large Standard Error for 18-year-olds (Figure 1) suggests more variance in beliefs for 18-year-olds than for other Young Adult ages. These findings fit the interpretation that 18-year-olds are less like 19 to 29-year-olds for

some measures because 18-year-olds are more likely to rely on adolescent support systems.

Eighteen year-olds may still be in high school, having yet begun independent adult transitioning.

Differences among Young Adult, Gen Xer, and Millennial populations were found in the same data source for nine commonly researched measures (Table 2). Age and Time differences in populations, as diagramed on Table 2, were expected to affect findings. Multiple regressions and Comparisons of Means confirmed these hypotheses. Patterns found in data, such as stronger associations between 25 to 29-year-olds and Income, suggest findings will vary according to whether a study population has a larger proportion of 18 to 24-year-olds or a larger proportion of 25 to 29-year-olds, for example. Prayer means varied by each young adult age, and was not strictly linear (Figure 1). Patterns, such as more strongly inverse association between young adults and Prayer in 2000-2012 data, suggest young adult findings will vary according to differences in population study year(s) (or data collection). Income for 18 to 29-year-olds varied by each year in 2000-2012 data, and was not strictly linear (Figure 2).

Findings from the current study demonstrated variations in research findings when young adult study populations differed by Age and Time. When a young adult research finding is viewed as out of step with current scholarship or is contradictory to a previous study, especially when previous studies generalized results to a vaguely defined young adult or most recent generation group, peeling away Age and Time effects by identifying age and year population differences may reveal the common ground, the “different parts of the same beast” (Arnett, 2007, p.80).

Study findings hold practical implications for interpretations, generalizations, and replications of young adult research. The current study uniquely contributes to the field of adult transitioning by promoting the perspicacious assessment of young adult research.

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Table 1. Age by Birth Year in Survey Year

Survey year	Age											
	18	19	20	21	22	23	24	25	26	27	28	29
Young Adults												
2000	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971
2002	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973
2004	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975
2006	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977
2008	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979
2010	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981
2012	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983
Gen Xers												
2000	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971
2002	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973
2004	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975
2006	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977
2008	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979
2010	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981
2012	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983
Millennials												
2000	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971
2002	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975	1974	1973
2004	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977	1976	1975
2006	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979	1978	1977
2008	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981	1980	1979
2010	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983	1982	1981
2012	1994	1993	1992	1991	1990	1989	1988	1987	1986	1985	1984	1983

Note: $n = 3,428$ (Young Adults); $n = 1,727$ (Young Adult Gen Xers); $n = 1,510$ (Young Adult Millennials).

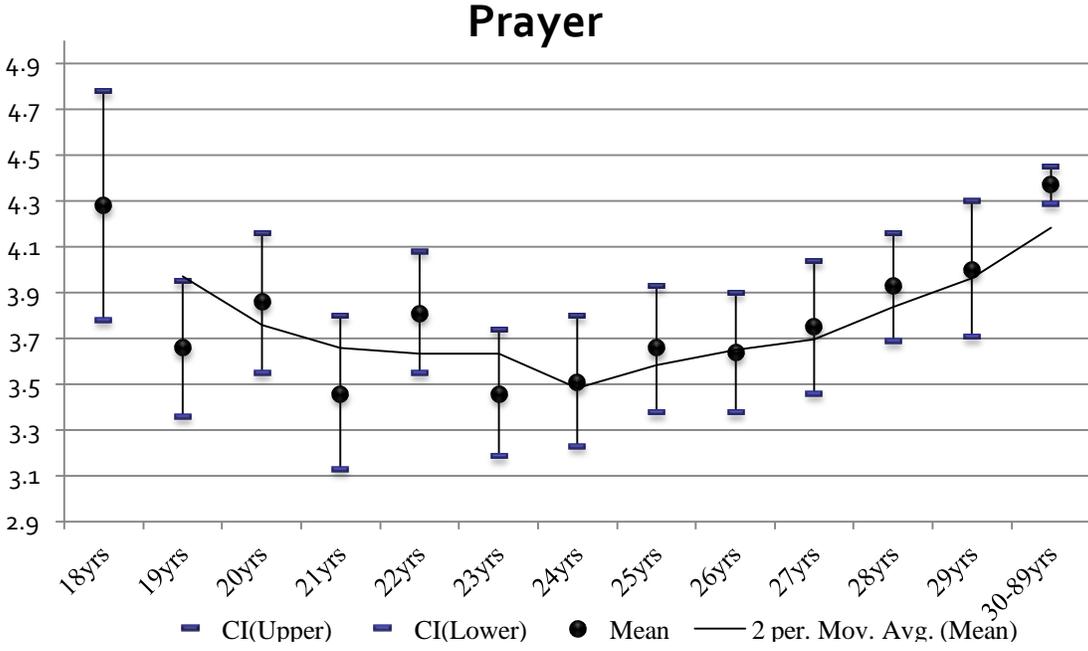
Source: General Social Survey (2000-2012)

Table 2. Dependent Measures

M(SD)		18 to 29 years	Gen Xers	Millennials	30+ years
Race	White= 1	70	72	67	78
Education	Bachelor/Graduate degree= 1	18	23	11	28
	Years of schooling (0-20)	13.20 (2.46)	13.42(2.63)	12.88(2.23)	13.44(3.17)
Marriage	Never married=1	70	60	83	13
Parenthood	Number of children (0-8)	.59 (1.00)	.73 (1.08)	.41(.86)	2.19 (1.65)
	Ideal number of children (0-8)	3.03 (1.64)	2.92(1.59)	3.16(1.70)	3.08(1.90)
Employment	Hours worked last week (1-89)	38.77(14.39)	40.44(14.34)	36.34(14.44)	42.35(14.67)
Income	Respondent's income (1-12)	8.43(3.69)	9.12(3.41)	7.34 (3.84)	10.59(2.60)
	Satisfied with finances=1	25	22	28	30
Computer Use	Web hours per week (0-184)*	9.25 (12.56)	8.01(11.13)	11.10(14.13)	7.47(10.86)
Social Trust	Can trust=1	23	25	21	36
Prayer	How often prays(1-6) (Often-Never)	3.72 (1.76)	3.82 (1.67)	3.63 (1.83)	4.37 (1.65)

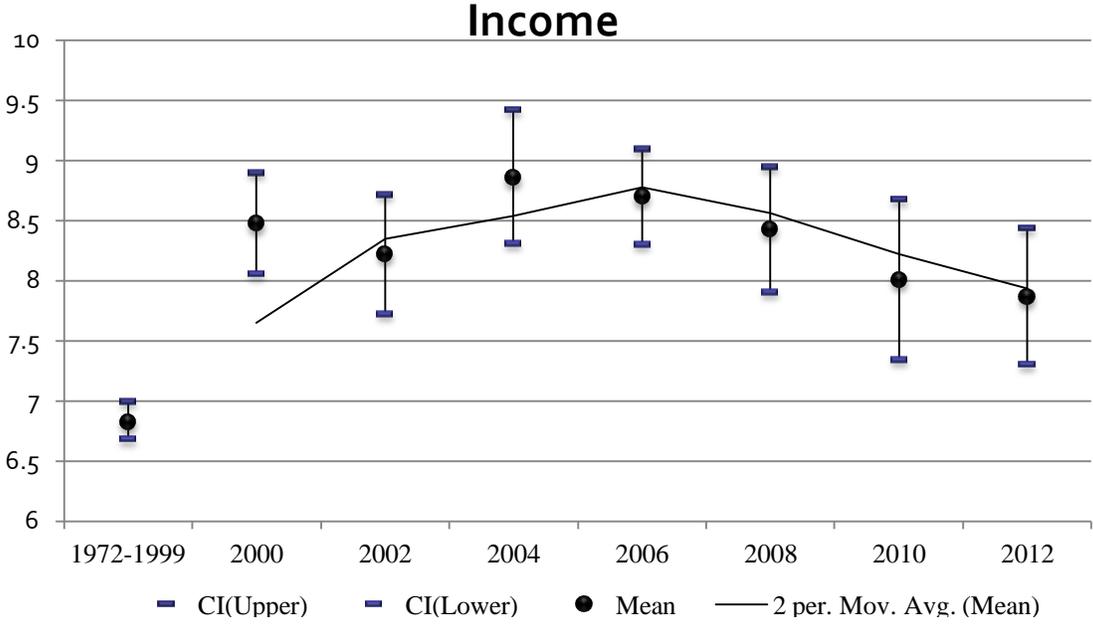
Note: 2000-2012 data. Gen Xers and Millennials filtered for ages 18 to 29-years. Means of dichotomous or dichotomized variables are equal to the percentage coded 1. * Not including email.

Source: General Social Survey



Source: General Social Survey (2000--2012)

Figure 1. Prayer Means by Age: 2000-2012



Source: General Social Survey (2000-2012)

Figure 2. Income Means in 18 to 29-year-olds: 2000-2012