Focus on middle age within SLS

One of the unique features of the SLS is the study of adult development from young adulthood (age 22) through old age. Spanning all of adulthood has permitted us not only to study change across a wide age range but also to focus on particular age periods. In 2005, we began a more intensive study of middle age, defined roughly between age 40 and 60 years, although it is suggested that midlife is extending as life expectancy increases and retirement is delayed. There were a number of reasons to focus more intensively on midlife. Most of the Baby Boomers, the largest generation in US history, are in midlife with the earliest cohorts recently entering the 60’s; research on maintenance of cognitive and physical health in this cohort is an important public policy issue. For many individuals midlife is the period when peaks are reached – income, health. 

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Neuroimaging: New Addition to SLS

Since its beginning in 1956, a major focus of the SLS has been on understanding changes in cognitive abilities as one ages and how factors such as lifestyle, health and personality influence cognitive functioning. Now, understanding changes in the brain with age and the relationship between neural functioning and behavior is an important complement to cognitive studies. During the past 5 years, we have added a neuroimaging component to the SLS, facilitated by the return of Drs. Schaie and Willis to Seattle and affiliation with UW. Fortuitously, a new Integrated Brain Imaging Center (IBIC) was created at the UW about the time our neuroimaging work began and has enhanced our efforts. Three types of neuroimaging procedures are included in our research: structural MRI (studying brain volume), diffusion tensor imaging (studying white matter integrity), and functional fMRI (studying activity in the brain when at rest or involved in a task). Our imaging research is conducted at the South Lake Union UW campus. Given the expense and time required in neuroimaging, only approximately 200 SLS members have participated and were selected from those who have been in the SLS during both midlife and old age.

Findings remain at an early stage. Our early work has focused on identifying brain areas associated with cognitive abilities studied in the SLS (see article on page 3). We plan to share findings and references to journal publications as research progresses.

Schaie—continued from page 1

Geneva.

He has contributed over 300 articles and authored or edited 60 books on research and research methods in the psychology of aging and gerontology. He has received many honors, including honorary doctorates from the West Virginia University and the Friedrich Schiller University of Jena, Germany. He also received the Distinguished Scientific Contributions award from the American Psychological Association, the Kleemeyer Award for Distinguished Research from the Gerontological Society of America, and the Lifetime Distinguished Career Award from the Mensa Society.

Dr. Schaie recently completed a revised version of his book Developmental Influences on Adult Intelligence: The Seattle Longitudinal Study. This book will summarize results from the SLS through our 2005 data collection, and will be published by Oxford University Press in 2012.

Read the 2008 Seattle Times interview with Dr. Schaie, Study on aging still going strong some 50 years later, at http://seattletimes.nwsource.com/html/health/2008426924_nwaging24.html.

The staff at SLS Nickerson Street office. From left to right: Dr. Willis, Dr. Schaie, Robin Dunlap, Teresa Osborn, Elaine Hardin, Holly Overman, Roger Colisson, Sara Rosen.

Staff Update

We sadly say goodbye to two long time staff members who have tested many of you over the years: Nanci Freeman Browning (2003-2010) and Chuck Fick (1997-2011). We wish them all the best in the future.

In 2008 Teresa Osborn joined the SLS office staff in conjunction with the study’s return to the UW.

SLS Testing Timeline

Wave 10 Testing
Nov 2011 - Dec 2013

Midlife Neuro
Jan 2012 – Feb 2013
Midlife memory predicts brain volume in old age

Most research in aging has focused on normal versus pathological aging but little research has focused on optimal aging.

The SLS has found that some individuals during midlife appear to improve or decline on the cognitive measure of episodic memory (memory for time-related events and experiences). We sought to determine if memory performance in midlife or if change (stability, improvement, or decline) in midlife memory predicts hippocampus volumes in non-demented adults in middle and old age.

84 SLS participants whose episodic memories had improved, declined or remained stable during midlife were selected for structural MRIs to equally represent two birth cohorts: Midlife and Old Age. We analyzed the MRIs by comparing three measures of brain volume 1) hippocampus 2) total brain 3) hippocampus to total brain ratio.

Analyses revealed: 1) Hippocampus volume was greater for the Midlife cohort; Midlifers had 6% greater total brain volume than the Old Age cohort; 2) Those in Old Age with improving memory change had greater hippocampus volume than those with stable or declining memory within the same cohort; Old Age memory improvers had a greater hippocampus to total brain ratio than those with stable or declining memories in Old Age.

Results showed that midlife memory change predicts hippocampus volume in Old Age. Although Old Age improvers have relatively equal hippocampus volume to those in Midlife, total brain volume for Old Age is less than total brain volume for Midlife. Episodic memory scores in Midlife did not predict hippocampus volume.

This study illustrates the significance of midlife memory change on future memory function and hippocampus volume. It is the first to examine the impact of midlife memory improvement on cognitive and brain aging. Implications of this suggest that early interventions in midlife can improve brain health in old age.


Spousal levels of happiness correspond over time

The SLS examined the relationship between happiness and marriage of 178 married couples using 35-year longitudinal data. On average, ages ranged from 40-70 years old, couples were married 25+ years and had 2+ children. These individual factors and broad sociocultural contexts influence relationships and contribute to shaping levels of happiness between couples across time.

Using a question from our cognitive testing, “Would you describe your life as being...”: “very happy” to “very unhappy,” (on a 5 point scale), we measured levels of happiness from both members of married couples.

Analysis revealed significant spousal similarities both in reports of happiness and in how happiness changed over time. Randomly paired women and men from the same birth cohort were compared to married couples, and results showed spousal happiness trajectories exceeded in size that of random couples. Spousal levels of happiness wax and wane in relation to their respective partner over time and individual levels of happiness across middle and old age are related to their spouse’s levels of happiness.

This is the first study to demonstrate associations in happiness trajectories between couples across midlife and old age using longitudinal data spanning across three decades.

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occupational status, professional knowledge and skills, leadership roles, etc. Of particular interest was how life experiences and cognition in midlife influenced how well one functioned in old age. Social scientists and more recently neuroscientists are studying a concept called cognitive reserve – how cognition, personality, and life experiences facilitate one’s ability to function when disabilities and pathologies arise. An example is the impact of cognitive reserve on maintenance of functioning in early dementia. On the other hand, there is growing awareness that cognitive impairment and dementia begin much earlier than previously thought, for some beginning in midlife. New guidelines for diagnosis of Alzheimer’s disease now include a preclinical phase, occurring many years before clinical symptoms or diagnosis. Some questions on midlife being addressed in the SLS study include: Does one’s mental ability performance in midlife predict cognitive functioning in old age? Does change in certain abilities in midlife influence subsequent change in other abilities? What health and lifestyle factors in midlife influence cognition in old age? What neural changes occur in midlife, and does neural structure and function in midlife impact neural integrity in old age?

We have published two edited volumes on various topics related to midlife, with some chapters focusing on SLS findings and others written by colleagues conducting research on midlife topics. In this and in forthcoming newsletters, we will be sharing findings from our research on midlife.