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TITLE: The Lifespan Intellectual Continuity Project in the Louisville Twin Study

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ABSTRACT:

Over a span of forty years, the Louisville Twin Study (LTS) collected longitudinal intellectual ability data from twin children between the ages of three months and fifteen years, as well as from their siblings and parents. Full in person Wechsler intelligence tests were obtained starting at age seven. The data structure of the LTS is complex but rich, comprising an intersection of cohort, age, and three different versions of the WISC. Many crucial questions about the development of intellectual ability require assumptions about the measurement equivalence of ability across cohort, age and test version; to the best of our knowledge there is no existing dataset that allows all such equivalence to be modeled and tested in a single sample. In addition, the currently funded Louisville Twin Study is following up the original twins, who are now middle-aged. Issues of continuity between Wechsler adult and childhood scales are even more difficult, because the subscales do not share items. We will describe the goals and procedures of the current project, including: 1) Entering the item data from the original WISC data from the LTS; 2) Development of vertical linking models that will allow WISC scores to be measured on an invariant IRT-based scale; 3) Tracing the development of cognitive ability in childhood on an interval scale that is not age-standardized; 4) Design of additional items to be added to the WAIS providing continuity between childhood and adulthood; 5) Models of the Flynn Effect

and detection of early cognitive decline in midlife.

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