Design of the Maine-Syracuse Longitudinal Study

Many longitudinal studies are designed like a "snake." They have a beginning and an end. The study starts at some point in time, data are repeatedly collected over time and data collection ends when the study is completed or there are no more surviving participants.

In contrast, the Maine-Syracuse Longitudinal Study (MSLS) uses a design that was very popular in life-span aging research in 1960 and for many years after. The study design is shown in the figure below. Starting with baseline the original cohort is followed over many years. Outcome measures are obtained at distinct time intervals, but new cohorts of individuals join the study at each specific period. The MSLS was designed to measure outcomes every five years and to add cohorts ever five years.

C in the diagram refers to "cohort." Comparison of cohorts provides us with information on secular changes over time. Comparisons among age groups (cross-sectional analyses) are possible if one employs data within waves, especially the later waves. Time-of-measurement (longitudinal) data are available for each cohort or one may average data across cohorts.

The letter W in the design diagram refers to "waves of testing." The Maine Syracuse Study was conducted for 7 waves. The dates specify when each wave of testing began.

The letter E refers to exams. In a perfect world, exams would equal waves because every person would come back to participate in every wave of testing. But in the imperfect world of longitudinal designs, participants drop out after a number of examinations or skip examinations.

The older two-stage growth curve models can be used to analyze data with missing examinations. These have been replaced with latent growth curve models employing structural equation modeling methods.

The design is fully described by Elias, Merrill F., Elias, Penelope Kelly Elias, and Jeffrey W. Elias, *Adult Development and Aging* (chapter 3} The C. V. Mosby Company New, St Louis, 1977.

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	1975		1981		1986		1991		1996		2001		2006
	W1		W2		W3		W4		W5		W6		W7
C1	E1	→	E2	→	E3	→	E4	→	E5	→	E6	→	E7
C2			E1	→	E2	→	E3	→	E4	→	E5	→	E6
C3					E1	→	E2	→	E3	→	E4	→	E5
C4							E1	→	E2	→	E3	→	E4
C5									E1	→	E2	→	E3

Key: Cohort (C); Exam (E); Wave (W)