
**Part III**

**Potential Contribution of Life History Approaches**

14 Design of a Comprehensive Life History Interview Schedule

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A long-term follow-up of senescent twins uncovered an intriguing relationship between survival and intellectual stability (Jarvik et al., 1957), a relationship which has also been reported by a number of investigators working with single-born subjects. While findings indicate an inverse association between cognitive decline and survival, the impact of other variables (e.g., biomedical, sociological, and psychological) upon life extension remains to be further explored. A major reason for this hiatus has been the unavailability of a comprehensive life history interview schedule. Our own data, for example, were recorded in anamnestic form at the time of the original contact, as well as during the two decades of subsequent interviews (Jarvik, 1969; Jarvik et al., 1962; Kallmann and Sander, 1948). The richness of such information is decrepitated by the sisyphian labor required for its statistical utilization.

In order to test hypotheses concerning some many factors contributing to longevity and maintenance of intellectual abilities, a codifiable geriatric life history schedule became essential. The basic design problems involved tedious decisions regarding the inclusion or exclusion of specific items covering the
entire life span of an aged individual and the selection of a propitious method of obtaining the desired information. Two general approaches guided the construction of the schedule: (1) subjective record keeping, as suggested by Daily (1958), who chronicled significant episodes and reactions to them, and (2) the more objective and dynamic one suggested by Bayley (1963), who stressed collecting data on patterns of growth and change by means of longitudinal studies.

Our life history schedule* was conceived as a standard comprehensive, structured, and codifiable interview to provide information on life experiences during childhood, adulthood, and senescence as elicited from the subject, his co-twin, physicians, and other informants. The following areas were covered: health, nutrition, critical maturation events, residential settings, activities and habits, sociability, education, work, and retirement, as well as demographic, familial, and genetic variables in addition to parental, marital, offspring, and sibling relationships.

The interview schedule was administered to the survivors of the original sample of senescent twins, collected between 1946 and 1949 by the late Franz Kallmann and associates (Jarvik, 1967; Jarvik et al., 1960; Kallmann and Sander, 1948), with a view toward defining the biological, sociological, and psychological correlates of longevity and successful aging. In addition, four criteria (independent of the life history) for judging successful aging were formulated: (1) physical health rated by physicians following thorough evaluation of medical records and physical examination; (2) psychiatric status assessed by psychiatrists using the customary psychiatric evaluation together with the Mental Status Schedule revised by Spitzer and colleagues (1967), including the Geriatric Supplement (Spitzer et al., 1969); (3) intellectual functioning as measured by psychological test scores (Blum, 1969; Jarvik, 1967); and (4) overall appearance as judged by a trained observer, in relation to subject’s chronological age (younger, norm, older).

A case history of the “C” twins (A1014) will serve to illustrate what is meant by longevity and successful aging. Eighty-two-year-old N. and T., dizygotic twins, were first seen thirty years ago. At that time they were 62 years old; the disparity in their physical appearance may be seen in Figure 1. One of the twins, N., was about four inches taller than his brother, weighed 25 pounds more, had barely begun to gray, and looked at least ten years younger than his age. His brother age. Figure 2 illustrates the main in physical appearance, but will exemplified successful aging. They good health. There was no eviden:

* Dr. L. Erlenmeyer Kimling, together with two of the present authors (LFJ and RB), was responsible for the design and construction of the interview schedule. Many others assisted in its development, including S. Goldman, F. Goldstein, E. Knell, V. Klodin, A. Kupperman, B. Novak, D. Pescor, and C. Weinstock.
DESIGN OF A COMPREHENSIVE LIFE HISTORY INTERVIEW SCHEDULE

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... provided information on life experiences and ... as elicited from the subject, parents. The following areas were covariables: educational events, residential settings, migration, work, and retirement, as well as education in addition to parental, marital, ... to the survivors of the original twin study between 1946 and 1949 by the late Franz ... and colleagues (1967), Spitzer et al., 1969); and intellectual test scores (Blum, 1969; ... 1014) will serve to illustrate what is occurring. Eighty-two-year-old N. and T. were ... years ago. At that time they were 62 years of age. Figure 1 shows the twins at age 8 and 62. Figure 2 illustrates the maintenance of their differential aging pattern in physical appearance, but with respect to other dimensions they both exemplified successful aging. They were both spry and active, and enjoyed good health. There was no evidence of psychiatric disorder. In general, their...
abilities as measured by the psychological test battery remained essentially unchanged over the years of the study.

The observation above is indicative of the fact that marked differences in degree of aging, when they occur in twins, are seen in dizygotic (two-egg) rather than in monozygotic (one-egg) pairs and can be taken as a reflection of the genetic components of aging and longevity. Other genetic components are the high familial correlations for natural life span and the small intrapair differences in intellectual functioning exhibited by monozygotic twin partners, even when far advanced in age (Jarvik and Blum, 1971; Jarvik et al., in press; Kallmann and Jarvik, 1959). While the correlations are high concerning genetic components of aging, the interaction of hereditary and environmental factors in the production of age changes is still poorly understood. Therefore, in assembling the geriatric life history schedule, an effort has been made to isolate and document these interacting factors in order to clarify their role in successful aging and prolonged survival or, conversely, in morbidity and mortality.

DESCRIPTION OF INTERVIEW SCHEDULE

A. Biomedical Aspects

1. Nutrition. An attempt was made to incorporate detailed information on lifelong weight changes and dietary habits, including intake of carbohydrates, proteins, vitamins, sugar, salt, spices, and alcoholic beverages. Particular emphasis has been placed on saturated and unsaturated fats because of their association with arteriosclerosis and heart disease, as well as on caffeine and sugar substitutes in the light of their reported chromosome-breaking actions and the possibility that such breaks predispose to cancer.

2. Health and Medication. Questions in this section concern health during childhood and adulthood including current health and medications, taken for a year or more, whether prescribed by a physician or self-prescribed. To aid in recall of information often neglected, specific questions are concerned with such medications as sleeping pills, tranquilizers, tonics, vitamins, laxatives and birth control pills, as well as with prescriptions taken for diverse symptoms like headaches, backaches, nasal congestion, and “stomach trouble.” Also, smoking habits are examined intensively (because of their role in cardiovascular, pulmonary, and neoplastic diseases), as are changes in sleep patterns and in auditory and visual acuity. The latter commonly present problems in advanced age. With reference to specific illness, a list has been compiled including not only the diseases of old age, but also psycho-

physiological and a variety of other tuberculosis). Information is being for his relatives to detect genetic pre-the health history of the entire family registered for first-degree relatives and, when possible, are further decedental records. Any hospitalizations, or in order to obtain primary medical files and hospital records. This detail in understanding the etiology of disease in the dynamic processes among the interaction of heredity and twins offer a unique research opportunity in that, but age, sex, ethnic origin, childhood have been controlled as any instrument that relies on retrospective respondents. With certain retrospective may not even be aware that they are hospital and physicians’ records, test and laboratory tests, compensates for.

3. Activities. Included are the quality of activities as well as interactivity throughout the respondent’s lifetime into (a) physical activities, as illustrative activities, such as cooking, television and card playing; (c) creative instruments; and (e) group activities. The questions have been phrased from the passive, sedentary activities are also elicited to affect activity, adulthood, including senescence, activities and longevity.

B. Sociological Aspects

The sociological factors include broken down into three key areas: social isolation factors, life stress. Isolation has been obtained for.

1. Social Isolation Factors. It is precluded by a history of social
The design of a comprehensive life history interview schedule incorporates detailed information, including intake of carbohydrates, alcohol, and fat-soluble fats and unsaturated fats because of their role in heart disease, as well as in caffeine intake and chromosome-breaking agents that predispose to cancer.

This section concerns health during and after illness, and includes questions about health and medications, taken according to the written or self-prescribed prescriptions. To specific concerns are addressed, including duration of illness, therapeutic response, and minor episodes, as well as changes in health and life-style. The latter commonly requires a specific analysis of the individual's health, including the incidence of specific illnesses, a list has been made of old age, but also psycho- and social factors, and the role of heredity and environment in determining the long-term survival.

3. Activities. Included are questions concerning the quantity and quality of activities as well as interests, hobbies, and community participation throughout the respondent's lifetime. The activities have been broken down into (a) physical activities, as illustrated by sports participation and gardening; (b) household activities, such as cooking and cleaning; (c) passive activities, such as television and playing cards; (d) creative activities, such as writing and playing instruments; and (e) group activities, such as group membership. The questions have been arranged to distinguish the active, energetic person from the passive, sedentary one. Changes in types and amount of activity are also elicited to afford comparisons between various phases of adulthood, including senescence, and to explore the relationship between activities and longevity.

B. Sociological Aspects

The sociological factors included in the interview schedule have been broken down into three key areas that are by no means mutually exclusive: social isolation factors, life stresses, and familial variables. Ancillary corroborations have been obtained for some of the sociological information.

1. Social Isolation Factors. It has been hypothesized that successful aging is precluded by a history of social isolation. Some empirical investigations of
the aged population found that loss of contact among the aged negatively affects their adjustment. Others (Bennett, 1968; Granick and Nahemow, 1961) implicated reduced social interaction in the etiology of mental illness in old age. To test these ideas, the adulthood and current isolation indices of Bennett and Nahemow (1965) were incorporated into the schedule. The adulthood isolation index takes into account the number of interpersonal experiences during adulthood, assessing role relationships to the following: children, siblings, friends, relatives, parents, spouse, work, and voluntary organizations. In addition, the following role dimensions measured are: number, frequency of activation, and duration.

2. Life Stresses. It has also been hypothesized that experiencing numerous environmental changes over time (including change in socioeconomic status and location of residence), or experiencing numerous life stresses, is detrimental to successful aging (Simon, 1969). Life stress items, taken from Langner and Michael (1962), have therefore been included in the geriatric life history schedule.

Some of the childhood stress items concern poor health in childhood, frequent disagreements with parents, parental psychophysiological illnesses, parental “worrying,” broken homes, and death of both parents. Among the adulthood stress items are illnesses of children and/or spouse, death of children and/or spouse, disagreement with spouse, divorce, financial difficulties, and job dissatisfaction. Old age items concern relocations due to institutionalization or multiple hospitalizations. In relation to “stress diseases” such as asthma, diabetes, rheumatoid arthritis, and hypertension (Srole et al., 1962), ascertainment of the hereditary, environmental, and emotional factors pertaining to organ specificity is important. Further, it is an aim of this schedule to delineate the role of the various stress diseases in morbidity, mortality, and longevity.

3. Familial Variables. Questions in this section pertain to the respondents’ their parents’, their siblings’ occupations, education, religion, ages, and causes of death (Cohen, 1954; Jalavisto, 1951). Marital history covers occupation, retirement, education, religion, and income of spouse, as well as details concerning sexual and marital adjustment, birth control methods used, pregnancies, and children (Burgess et al., 1963; Kinsey et al., 1948, 1953).

C. Psychological Aspects

The following psychological hypotheses are being tested with the interview schedule and in conjunction with psychiatric evaluation and psychological tests:

1. Mental breakdown prior to successful aging (Bleuler, 1950; Rcover lifetime hospitalizations or emotional illness, e.g., long ab
2. The ability to adapt to children, siblings, friends, relatives, parents, spouse, work, and voluntary organizations. In addition, the following role dimensions measured are: number, frequency of activation, and duration.
3. Rates of development in persons who mature early show span. The interview elicits information including developmental milestones and procurement of first job.
4. Activities, both physical in research activities to successful aging. In the absence of adequate dalional activities to successful aging. A recent study (DeCarlo, 1971) of cognitive as well as physical positive influence upon the aging of intellectual function and or passive) made DeCarlo’s a.

A brief case history will serve to intellectual functioning and the avocational activities despite chronicity.

Mrs. S. (A 1061) is a vital, senile woman who has maintained a quick wit。

Findings from rered over a 20-year time span of disorder, and capable at levels of person 30 years younger. As my look is much younger then her shi has great difficulty walking, due to anactive woman—seeing friends, crocheting, making rugs and mats and sews into pictures and onto aged with comparable success at heart attack at age 86.
of contact among the aged negatively (Bennett, 1968; Granick and Nahemow, 1969) in the etiology of mental illness and current isolation indices are incorporated into the schedule. The account the number of interpersonal role relationships to the following: parents, spouse, work, and voluntary living role dimensions measured are: satisfaction. It is demonstrated that experiencing numerous life changes in socioeconomic status during numerous life stresses, is detrimental (Simon, 1969). Life stress items, taken from the stress scale, have been included in the geriatric interview schedule. Concern poor health in childhood, parental psychophysiological illnesses, and death of both parents. Among the children a or spouse, death of children, divorce, financial difficulties, and stress, relocation due to institutionalization to “stress diseases” such as coronary and hypertension (Srole et al., 1962), somatic, and emotional factors may contribute to the aging process. Further, it is an aim of this schedule to include stress diseases in morbidity, mortality, and psychological evaluation and psychological testing with the interview schedule. 

DESIGN OF A COMPREHENSIVE LIFE HISTORY INTERVIEW SCHEDULE

1. Mental breakdown prior to senescence interferes with longevity and successful aging (Bleuler, 1950, Roth et al., 1969). Questions are included to cover lifetime hospitalizations and other indicators of prolonged physical or emotional illness, e.g., long absences from school and work.

2. The ability to adapt to change and stress is a requirement for successful aging (Simon, 1969). Thus, subjective “experiencing” and life satisfaction measures are included, as are descriptions of personal reactions to a wide variety of experiences and events over a lifetime—for example, reaction to loss of spouse, separation from children, military service, and retirement.

3. Rates of development influence longevity. It has been suggested that persons who mature early show early decline and possibly a shortened life span. The interview elicits information regarding maturation patterns, including developmental milestones, ages at puberty, onset of dating behavior, and procurement of first job.

4. Activities, both physical and mental, maintained throughout life contribute to successful aging.

In the absence of adequate data, the contribution of physical and recreational activities to successful aging has been the subject of much speculation. A recent study (Decarlo, 1971), utilizing information gathered on the senescence twin described above (see also Chapter 3), suggests that maintenance of cognitive as well as physical activities in middle and later life exerts a positive influence upon the aging pattern. The activity section of the interview schedule elicits lifetime information on avocational pursuits (active and/or passive) made DeCarlo’s study possible.

A brief case history will serve to illustrate the coexistence of stability of intellectual functioning and the maintenance of physical, vocational, and avocational activities despite changes in physical health at an advanced age.

Mrs. S. († A1061) is a vital, self-confident, and poised 93-year-old woman who has maintained a quick wit, sharp reasoning abilities, and good motor coordination. Findings from repeated series of psychological tests administered over a 20-year time span show her to be alert, free from psychiatric disorder, and capable at levels considered to be more than adequate for a person 30 years younger. As may be seen in Figure 3, physically, Mrs. S. looks much younger than her chronological age. Despite the fact that she has great difficulty walking, due to senile osteoarthritis, she continues to be an active woman—seeing friends, supplementing the household income by crocheting, making rugs and mats, and collecting buttons which she arranges and sews into pictures and onto baskets. Her twin sister, although dizygotic aged with comparable success and remained self-sufficient until her fatal heart attack at age 86.
The case of M. and L. (A11414) illustrates that concordance for successful aging is not always de rigueur even among monozygotic twin partners who have identical genotypes; differences in life style may extend to differences in lifespan.

Mr. M., the conformist and observer of conventionalities, followed his father's bidding, and upon his marriage adjusted and conformed to his wife's ways and religion (Christian Science). He died at the age of 64, having been in poor health for two years prior to his death, without ever having consulted a physician. L. was more a being the rebellious one, more adventurous life. New with his twin until the latter not preclude the couple's Now at age 87, L. in good intellectual field; he evaluents.

**DISCUSSION**

The New York State Psychiatric Institute's research program has consistently used its instrument extensively, designed primarily to get information about the respondent's feelings about his life style. The data are used to determine whether or not post-prandial interviewers are instructed in the use of a standardized questionnaire, valuable above all for life style. This limitation, open-ended interviews are instructed to obtain personal attitudes, material possessions, the subject's residence and environment, dress, etc., and attitude appended. The respondents' ability are also ranked.

This comprehensive index indicates that the various sections: Personal History; Nutrition; Social History; Mental Milestones; Religious affiliation, etc., used singly or in combination in the relationship between these dimensions in the Activities section alone. Each section is divided into five sections: the Core Questionnaire, approximately two hours in the life history schedule.

It is hoped that through this work it will be possible to isolate the factors that are sociological.
a physician. L. was more aggressive and outgoing. In fact, he took pride in being the rebellious one, and while economically less successful, he led a more adventurous life. Nevertheless, he maintained a very close relationship with his twin until the latter's marriage which strained the association but did not preclude the couple's caring for L.'s four children when his wife died. Now at age 87, L. is in good health and held in high esteem in an exacting intellectual field; he evaluates documents, plays, and books for renowned clients.

**DISCUSSION**

The New York State Psychiatric Institute Life History Interview Schedule consists primarily of close-ended questions that elicit past and present factual information about the respondent's life experiences as well as opinions and feelings about his life style. With a predominantly close-ended and pre-coded questionnaire, valuable anecdotal information is often lost, as are overall lifetime trends that do not readily fit into selected categories. To minimize this limitation, open-ended questions are contained in each section, and interviewers are instructed to write up anecdotal material and to comment on personal attitudes, morale, and outlook on life. A brief description of the subject's residence and life style, appearance (in terms of physical movement, dress, etc.), and attitude toward the interviewer and the interview is appended. The respondent's cooperativeness, lucidity, and seeming reliability are also ranked.

This comprehensive inclusive geriatric life history schedule is so constructed that the various sections (Marriage, Adjustment, and Birth; Family and Personal History; Nutrition; Activities; Health and Medications; Developmental Milestones; Religion, Education, Occupation; and Cottwin) may be used singly or in combination. For example, DeCarlo's (1971) interest was in the relationship between activities and successful aging and he used the Activities section alone. Each section of the interview schedule is very detailed so that it takes about five hours to administer the entire schedule. Since the ascertaining of such highly specific information is not always possible or even desirable, the Core Questionnaire was developed. It can be administered in approximately two hours and contains crucial factors from all sections of the life history schedule.

It is hoped that through the use of such a comprehensive interview schedule it will be possible to isolate and explore those medical, psychological, and sociological factors that are valid predictors of longevity and successful aging.
Moreover, detection of factors conducive to the maintenance of health during the later years of life should lead to the emergence of practical suggestions for optimizing the chances for successful aging.

The life history interview scale for use in a multidisciplinary approach can be the basis for identifying changes in the interrelated expressive domain (aspirations, style) and affective aspects at different time points. The salience of these two parameters can be explored to determine which style is more attributable.

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