Reports from the project

Individual Development and Adaptation

WOMEN'S HEALTH, WORK, AND EDUCATION IN A LIFE-SPAN PERSPECTIVE

Technical report 2: The coding of work biographies

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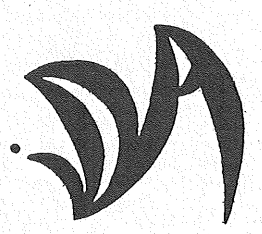

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The research program Individual Development and Adaptation (IDA) was initiated by David Magnusson in 1964 and was led by him until 1996 when Lars R. Bergman became the principal investigator.

Reports from the project Individual Development and Adaptation published from 2000 and onwards:

No. 70 Bergman, L.R. Women's health, work, and education in a life-span perspective. Technical report 1: Theoretical background and overview of the data collection.

No. 71 Isaksson, K., Johansson, G., Lindroth, S., & Sverke, M. Women's health, work, and education in a life-span perspective. Technical report 2: The coding of work biographies.

Foreword

This technical report concerns the coding of occupational biographies and it has been written by Kerstin Isaksson, Gunn Johansson, Siv Lindroth, and Magnus Sverke. The data used for the coding were collected in personal interviews with the women at age 43 within the IDA-program. The work conducted here has been carried out within the project *Women's Career Patterns: A Longitudinal Study of Women born in Sweden in the 1950s*, led by Gunn Johansson. The data collection has taken the effort of many people. Foremost I want to thank David Magnusson and Magnus Sverke. David initiated and led the IDA-program for over 30 years until 1996 and laid a solid foundation to the new data collection. The unique strength of the new data only emerges when they are combined with the old data going back to age 10. Magnus Sverke was my right-hand man and project coordinator through the whole data collection. He carried the heavy burden of the responsibility for the day-to-day work of a complex data collection organization. His dedicated effort and skillful work has kept the data collection running on the right track.

The data collection was mainly supported through the committee of longitudinal research at the Swedish Council for the Planning and Coordination of Research and the Swedish Council for Social Research (main grant holder: Lars R. Bergman). The coding work has been supported by the Swedish Council for Work Life Research.

Last but not least we want to thank our wonderful reference group consisting of four participants in the study: Lena Kuremyr, Helli Malers, Kerstin Monks, and Maria Åvall. During several discussions they generously gave us good advice on the design of the data collection, advice which has been extremely useful to the IDA-program.

Stockholm, October 10, 2000

Lars R. Bergman
professor

1. INTRODUCTION

The research of which the present report forms part has several motives. Among those relevant for this report are (1) the need for a multidisciplinary approach to life-span development, (2) the lack of established theoretical models for the explanation of career development, and (3) the need for better understanding of complex interactions between societal, family and individual factors in career patterns, especially those of women. Few opportunities for empirical research exist where two or more such purposes may be combined. One of them is offered by the IDA program (presented below), initiated by David Magnusson in the 1960s and led by him until 1996 when Lars R. Bergman became the principal investigator. When a new data collection was being prepared for this data base under the title of *Women's health, work, and education in a life-span perspective*, the career patterns of the IDA women became a natural theme of study.

The present report forms part of a sub-study within the IDA program, *Women's career patterns: A longitudinal study of Swedish women born in the 1950s.* The primary purpose of the present report is to give a thorough account of the coding of work histories, using information retrieved from the women of the IDA sample by interviews and questionnaires at the age of 43.

It is not within the scope of the present report to provide an overview of the theoretical background. The existence of the IDA database itself makes it obvious that the issues mentioned above should be approached. However, there are also a few special features that should be emphasized.

First, the women of the IDA sample are all the same age. Thus, they have been exposed to the same national policies and changes of policies related to education, family support and labor market conditions at the same age. *Secondly*, most of the individuals in the IDA sample have remained in the geographical region where they grew up, which means that in general terms they have been exposed also to similar environmental conditions and community characteristics. *Thirdly*, they grew up and became adults at a time when the society in which they lived underwent an interesting development towards general welfare and equality between men and women. In our opinion, these factors compensate for the risk that certain results to be presented in future reports may reflect cohort effects.

1.1 The IDA program

The IDA program was initiated in the early 1960s by Professor David Magnusson. The first data collection was carried out in 1965 and was directed to three complete school-grade cohorts aged about 10 (the main group), 13 (pilot group 1), and 15 (pilot group 2), respectively. The two younger cohorts have been followed into adult age, the main group more extensively. Each cohort includes around 1,400 individuals. Information has been collected from the children themselves (e.g., school performance, adjustment, vocational preferences, vocation, health, and family), from teachers (e.g., aggression,

concentration problems), parents (e.g., living conditions, family situation, problems with the child), peers (e.g., social relations), tests (e.g., intelligence), and registers (e.g., school marks). The main cohort also includes a biomedical sub-sample of around 240 individuals for which additional data have been collected (e.g., stress hormone secretion, EEG, vocational preferences, and self-reported criminality). For detailed information on the previous data collections, see Magnusson, Dunér and Zetterblom (1975), Magnusson (1988), and Magnusson and Bergman (1997).

1.2 The IDA-II data collection

The new data collection, which took place in 1998 at the age of 43, focused on women's work, health, and education in a life-span perspective. It was directed to all women in the main cohort (N=639) and comprised four different parts (for an introduction to the data collection, see Bergman, 2000).

1.2.1. Part I. Personal interview

The first part was a comprehensive personal interview covering, among other things, family conditions, education, career history, work experiences, work values, life satisfaction, health, and leisure-time activities. In terms of retrospective work history data, activities were recorded if they lasted 6 months or more. In the context of the interview, five hand-out questionnaires and nine leave-after questionnaires were distributed. Of the 639 eligible respondents, altogether 569 women participated in the interview and most of them completed all questionnaires.

1.2.2. Part II. Psychological-medical examination

The second part was made up by an intensive psychological-medical examination. This part was directed only to women still living in the Örebro county and to women living elsewhere but who were included in the biomedical sub-sample (N=369 participants). This part included a thorough health examination by a physician and a nurse, blood samples, three medical questionnaires filled in by the medical staff, memory tests, and nine health-related questionnaires filled in by the subjects. In addition, a psychiatric interview based on the SCID protocol was conducted with every second woman (N=205 participants).

1.2.3. Part III. Investigation of stress hormone secretion

The third part was a study of stress hormone secretion. For practical reasons this part involved only women living in the Örebro city area (N=218 participants). The excretion of stress hormones (in urine and saliva) was measured during a work day (or similar activity for the unemployed) and at the corresponding time of day during a work-free day at home.

1.2.4. Part IV. Osteoporosis study

The fourth part concerned a study of bone density (osteoporosis) and was carried out at the county hospital of Örebro (RSÖ). This study was restricted to IDA women living in the Örebro county area (N=339 participants).

1.3 A study on women's career patterns

1.3.1. Research on career patterns

Research on career patterns has presented a number of theoretical models, each of which highlights slightly different aspects. One of the more influential models was suggested by Driver (1988) and describes career-pattern categories as "stable", "linear", "spiral", "transitory" or as a mix of these. Super (see e.g., Super & Hall, 1990) assumes career development to pass through phases defined by theories on psychological human development in adult life. Derr (1986) has suggested a minimum number of dimensions for description of career orientation: "getting ahead", "getting secure", "getting high", "getting free", and "getting balanced".

Although these models are implicitly assumed to be of general validity, they are usually colored by their cultural, ethnical and historical background and by a lack of gender perspective. They are based extensively on the living and working conditions of white American males in the middle and latter half of the 20th century. Only tentative efforts have been made to grasp the dynamic interaction between the individual's involvement in working life and other aspects of her life course although it has been repeatedly emphasized that existing models are ill suited for the analysis of women's living conditions (see e.g., Burke & McKeen, 1993; Driver, 1988; Gustafson & Magnusson, 1991). Larwood and Gutek (1987) are among those who have brought attention to the need for more suitable models, and they point to five dimensions that need to be recognized: (a) career preparations, (b) women's opportunities on the labor market, (c) the impact of marriage, (d) pregnancies and children, and (e) time courses and age.

1.3.2. Purpose of the study

The aim of the career-pattern project is (1) to identify career patterns of women born in Sweden in the 1950s, and (2) to analyze the relation between the career pattern and its various characteristics on the one hand, and the woman's working and living conditions, quality of life, and health in her middle age, on the other.

1.3.3. Concepts

Work refers to paid as well as unpaid work. Whenever needed it will be specified in terms of occupational work, voluntary work, homework, etc.

Career is defined as a sequence of work-related experiences stretching over a person's life, in this case until the age of 43.

Career pattern includes cyclicity as well as contents, and content includes employment as well as unemployment.

Career choice refers to more or less voluntary work-related choices that the individual makes at different times over a life span.

Work biography is the documentation of a sequence of work-related activities. The word *work* - rather than *occupational* - points to the fact that it refers to paid and unpaid work as well as study.

1.3.4. Representativeness of the IDA women

Table 1 presents demographic characteristics of the IDA women at age 43 and corresponding information on Swedish women in the age group 35-44 years.

About two thirds of both groups were married. The IDA group had a slightly higher percentage cohabiting and fewer single women. No apparent differences were observed with regard to education; the proportion obtaining each level seems to be similar with about 30% having third level education. Employment data, finally, showed a somewhat higher proportion of IDA women being economically active (full time, part time, self-employed, and work in family-owned firm). Thus, on the whole, the IDA group resembled other Swedish women of similar age. Considering the fact that the age of the IDA women approached the upper extreme of the interval represented by the population cohort, the few deviations may be considered moderate.

2.1. Assumptions, principles, and criteria

Limitations in time and resources did not permit detailed data to be collected for all aspects of life. Furthermore, occasional cases of incomplete or unclear recordings were noted, and therefore certain assumptions had to be made. Deliberate attempts were then made to make approximations in a systematic way. The following rules were applied.

Table 1. Background information on women participating in the IDA-II study and population data on Swedish women in 1998 (Statistics Sweden)

	Statistics Sweden women 35-44 years	IDA women 43 years
Family		
Married	65%	63%
Cohabiting	9%	19%
Single	26%	18%
Children 0-6 years	16%	18%
Highest educational level		
< 9-year compulsory school	3%	2%
9-year compulsory school	15%	17%
Upper secondary school, 2-year	38%	34%
Upper secondary school, 3-4-year	10%	15%
Third level education	32%	34%
Employment		
Economically active	79%	84%
Study	8%	5%
Unemployed	6%	5%
Other (e.g., retired, parental leave)	7%	6%

Source: SCB (1998b, 1998c)

2.1.1. The time of shifts between activities

The participants were asked to give the times for shifts between employment, parental leave, study, etc., as precisely as possible, but information on the exact time for shifts between activities was not available, and therefore an arbitrary but standardized procedure was adopted. All codings were made in 6-month periods. Whenever activity A was reported to have ended the year before activity B started, the shift was assumed to have taken place at the turn of the year. If, however, activity A was reported to have ended the same year as activity B started, the shift was assumed to have taken place in the middle of that year. This principle is illustrated by Figure 1.

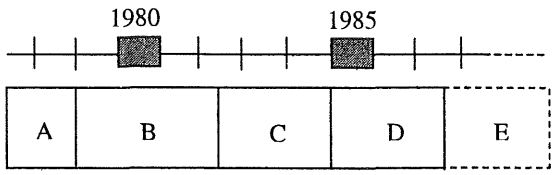


Figure 1. Illustration of the standardized procedure for determining shifts between activities based on information from the interview protocol: Activity a 1977-1978, Activity B 1979-1982, Activity C 1982-1984, Activity D 1985-1987, and Activity E 1987-.

2.1.2. Childbirth and adoptions

Throughout the period studied, the Swedish social security system entitled adopting parents to paid parental leave on the same terms as biological parents, i.e., 450 days before the child reaches the age of 9. Foster parents are entitled to parental leave only if they intend to adopt the child. Thus, if not otherwise stated, the arrival of a foster child or an adopted child was coded as followed by one year of parental leave if:

- the child still lived with the family at the time of the data collection
- the child was "relatively young" on arrival to the family.

If a child died, but the time of death was not stated, parental leave was not coded.

In those cases where the interviewer did not code parental leave, parental leave has been coded for one year from the birth date of the child. For children born January to March parental leave was coded for the entire same year. For children born October to December, parental leave was coded only for the next year. If the year, but not the month, of a child's birth is known, parental leave has been coded for the second half of the year of birth and the first half of the following year. When the year of birth of a child was not stated, no parental leave has been recorded.

2.2. IDA-II Graphic occupational displays

One of several methods of graphic representation of the women's careers was inspired by Bjerén and Elgqvist-Salzman (1994). According to their method, each individual life sequence is represented by a "bar" on which activities are indicated by the half-year (see Figure 1). The information on activities was taken from the interviewer notations in the interview protocol.

These graphic displays were used primarily for illustrative purposes, but they may also be used for rough estimates of the relative amounts of time spent by each individual in various major activities. Thus, the great variation between individual women stands out clearly in Figure 2. Whereas the total amount of study varies only between 20 and 27 per cent, full-time employment varies between 21 and 46 per cent and parental leave/homework between 4 and 33 per cent.

2.3. Coding of occupational category and level

2.3.1. The SSYK96 coding system

Occupational categories and levels were coded according to the Swedish Standard Classification of Occupations 1996 (SSYK96). This is a national adaptation combining the International Standard Classification of Occupations (ISCO-88), published by the International Labour Office in Geneva in 1990 and the closely related ISCO-88(COM), which is used for the compilation of statistics in the European Union. The classification organizes occupations into a hierarchical framework based on two concepts: kind of work performed and skill level (SCB, 1998a). A list of categories and examples is presented in Table 2.

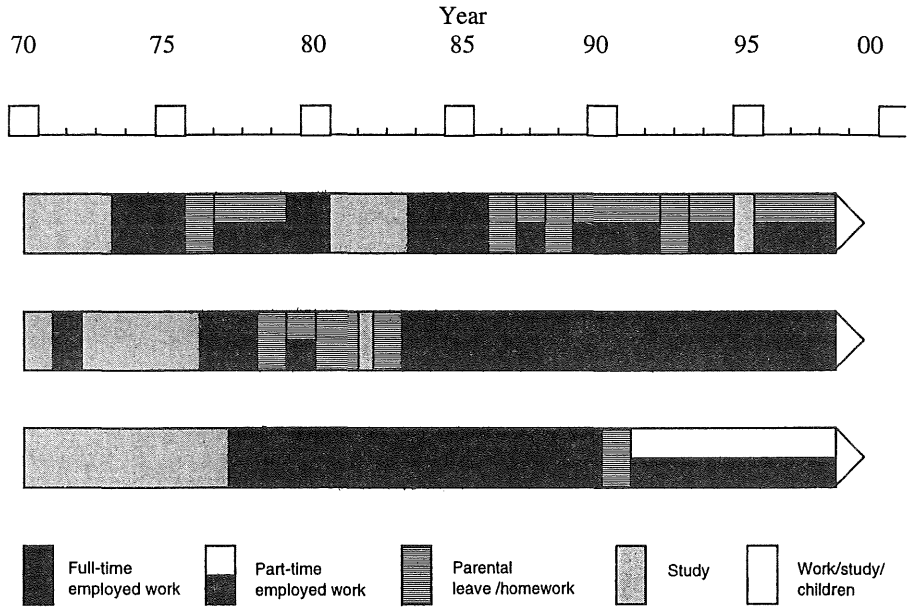


Figure 2. Graphic representation of work-related activities, study, and parental leave. Each horizontal bar represents one individual. In all three examples the women left secondary school in the beginning of June 1970, and all women were interviewed during the first half of 1998.

Kind of work is defined by a set of tasks or duties to be executed and is grouped into ten major-group occupational fields. Each such field is divided into sub-major groups as shown in Table 2. Further classification can be made using a three-digit code resulting in minor groups and, finally, in unit groups represented by four digits.

Skill level is defined in terms of level of qualification and specialization. Four skill levels have been operationalized in terms of educational categories (International Standard Classification of Education). The use of the educational categories does not imply that the skills required for a given job can be acquired only through formal education. The four levels are:

1. Elementary occupations
2. Upper secondary school education
3. College or shorter university education
4. University, three years or more

Table 2. Occupational classification according to the Swedish Standard Classification of Occupations (SSYK 96): Major and sub-major categories with examples.

Category		Skill level	Examples
1	***Legislators, senior officers and managers***	*4*	
11	Legislators and senior government officials		1110 Ambassador
12	Corporate managers		1228 Personnel manager
13	Managers of small enterprises		1314 Restaurant manager
2	***Professionals***	*3*	
21	Physical, mathematical and engineering science professionals		2113 Chemist 2141 Architect
22	Life science and health professionals		2221 Surgeon 2231 Midwife
23	Teaching professionals		2322 Second.-school teacher
24	Other professionals		2432 Librarian
3	***Technicians and associate professionals***	*2*	
31	Physical and engineering science associate professionals		3112 Construction engineer 3131 Photographer
32	Life science and health associate professionals		3224 Licensed optician 3239 Nurse
33	Teaching associate professionals		3310 Pre-school teacher
34	Other associate professionals		3450 Police
4	***Clerks***	*2*	
41	Office clerks		4112 Secretary 4150 Postman
42	Customer service clerks		4212 Bank clerk
5	***Service workers and shop sales workers***	*2*	
51	Personal and protective services workers		5123 Waitress 5152 Body guard
52	Models, salespersons and demonstrators		5132 Assistant nurse
6	***Skilled agricultural and fishery workers***	*2*	
61	Skilled agricultural and fishery workers		6112 Gardner 6140 Lumberjack

(cont'd)

Table 2. (continued)

Category		Skill level	Examples
7	***Craft and related trades workers***	*2*	
71	Extraction and building trades workers		7111 Miner 7123 Carpenter
72	Metal, machinery and related trades workers		7241 Repairman
73	Precision, handicraft, craft printing and related trades workers		7311 Locksmith 7330 Craftsperson
74	Other craft and related trades workers		7411 Butcher 7431 Dressmaker
8	***Plant and machine operators and assemblers***	*2*	
81	Stationary-plant and related operators		8111 Mechanic
82	Machine operators and assemblers		8278 Brewery worker
83	Drivers and mobile-plant operators		8322 Bus driver
9	***Elementary occupations***	*1*	
91	Sales and services elementary occupations		9121 Au-pair 9142 Doorman
92	Agricultural, fishery and related laborers		9210 Harvester
93	Laborers in mining, construction, manufacturing and transport		9310 Unskilled laborer
0	***Armed forces***	-	
01	Armed forces		0110 Army officer

2.3.2. Reliability

Great care was taken to correctly code participants' occupational experiences according to the SSYK96. In a first step, a research assistant made all occupational codings. In a second step, another assistant cross-coded the total material. Discrepancies were solved in discussions and guidelines were written so as to document the decisions in principle necessary to supplement the instructions of the SSYK96 manual. As a result of this preparatory procedure, the following amendments were made to the instructions of SSYK96:

1 Foremen and supervisors with responsibility for at least 15 persons were coded as administrative associate professionals (level 343) to separate them from colleagues in non-supervisory positions.

2 Self-employed individuals were coded as small business managers (level 13) in the actual field of work.

3 Trainees/apprentices were coded according to the actual occupation unless that occupation demanded at least upper secondary school graduation (then they were coded as messengers).

4 Participants who stated that they worked as office clerks in younger ages (below 18) were coded as messengers.

5 SSYK96 does not make a distinction between assistant nurses (2-3 years of education required) and nurses aids (6 months of education required). Therefore, the original category 5132 was saved for nurses aids while a new category (5136) was made for assistant nurses.

6 Shop managers did not have a category and were coded 1314 (managers of small enterprises in wholesale and retail trade, hotels, and restaurants).

In order to assess the reliability of the coding procedure, four research-staff members coded the same sample of 30 interview protocols to supplement the original coding. Altogether, these protocols contained 174 occupations to be coded. We compared four levels of coding: (1) major group level (first digit in the code – professional group), (2) sub-major group level (first two digits – occupational category), (3) minor group level (first three digits – occupational group), and (4) unit group level (all four digits – exact occupation). Table 3 presents the results of this inter-rater agreement examination.

Table 3. Inter-rater agreement in occupational codes: Major (1 digit), sub-major (2 digits), minor (3 digits), and unit (4 digits) group levels (%)

	Group level			
Level of agreement	**Major**	**Sub-major**	**Minor**	**Unit**
All 5 coders agree	83	82	81	71
4 coders agree	8	8	7	14
3 coders agree	7	8	9	10
2 coders agree	2	2	2	4
All coders different	0	0	1	1
Total	100	100	100	100

2.4. IDA-II Career Codes

In order to describe the women's activities and responsibilities over time, a career coding system was designed. This system makes it possible to document each woman's major activity for each 6-month period and was inspired by a procedure applied in a previous study based on IDA I data (Wångby & Bergman, 1998). The career codes covered:

1 Main activity, including work, studies, parental leave, etc.

2 Sideline activity, if any

3 Occupational field and level

4 Number and age of children

5 Level of current studies

Finally, as a summary of the career state during each six-month period:

6 *A reduced code*, which is a combination of 1-5

All information was taken from the personal interview, including the work biography, birth of children, time for studies and educational level. When coding any change in activity the standardized rules, described above in section 2.2, were used (see also Figure 1).

Activities for every half-year were coded into one of ten categories:

01 Full-time work
02 Part-time work
03 Self-employed or Farmer
04 Work on family firm or farm
05 Spare-time occupation/side-line (secondary work) activity
06 Unemployed
07 Disablement pension
08 Study
09 Parental leave
00 Other

Occupational categories and levels were coded according to the Swedish Standard Classification of Occupations, SSYK96 (described above, section 2.2).

The number and ages of children aged 0-17 was coded into six categories:

0 No children
1 1 child, 0-6 years
2 2 or more children, 0-6 years
3 At least one child aged 0-6 and one child aged 7-17 years
4 1 child, 7-17 years
5 2 or more children, 7-17 years

The level of current studies was coded into one of four categories:

1 Compulsory school ("grundskola")
2 Upper secondary school ("gymnasium")
3 University
4 Other

Finally, the reduced codes were used as a summary of the career state during each six-month period. The categories were:

01 Unemployed
02 Parental leave
03 Part-time work
04 Part-time work + children
05 Full-time work
06 Full-time work + children
07 Study
08 Study + children
09 Work + study
10 Work + study + children
00 Other

A graphic trajectory displayed in terms of these reduced codes is presented in Figure 3. The original codes (career codes and reduced code) for the same woman are visualized in Figure 4.

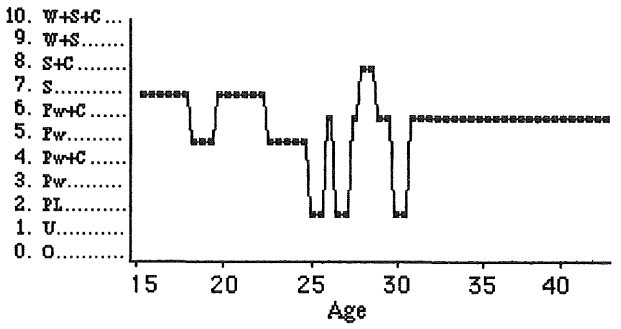


Figure 3. Illustration of a life trajectory for one woman based on reduced codes.

Code	70a	70b	71a	71b	72a	72b	73a	73b	74a	74b	75a	75b	76a
Act. 1	8	8	8	8	8	8	8	1	1	1	8	8	8
SSYK	0	0	0	0	0	0	0	5222	5222	5222	0	0	0
Children	0	0	0	0	0	0	0	0	0	0	0	0	0
Act. 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Study	1	1	1	2	2	2	2	0	0	0	3	3	3
Red.code	7	7	7	7	7	7	7	5	5	5	7	7	7

Code	76b	77a	77b	78a	78b	79a	79b	80a	80b	81a	81b	82a	82b
Act. 1	8	8	8	1	1	1	1	1	9	9	1	1	9
SSYK	0	0	0	3310	3310	3310	3310	3310	0	0	2340	2340	0
Children	0	0	0	0	0	0	0	0	1	1	1	1	2
Act. 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Study	3	3	3	0	0	0	0	0	0	0	0	0	0
Red.code	7	7	7	5	5	5	5	5	2	2	6	6	2

Code	83a	83b	84a	84b	85a	85b	86a	86b	87a	87b	88a	88b	89a
Act. 1	9	8	8	1	1	9	9	1	1	1	1	1	1
SSYK	0	0	0	2340	2340	0	0	2340	2340	2340	2340	2340	2340
Children	2	2	2	2	2	2	2	2	3	3	3	3	3
Act. 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Study	0	3	3	0	0	0	0	0	0	0	0	0	0
Red.code	2	8	8	6	6	2	2	6	6	6	6	6	6

Code	89b	90a	90b	91a	91b	92a	92b	93a	93b	94a	94b	95a	95b
Act. 1	1	1	1	1	1	1	1	1	1	1	1	1	1
SSYK	2340	2340	2340	2340	2340	2340	2340	2340	2340	2340	2470	2470	2470
Children	3	3	3	3	3	3	5	5	5	5	5	5	5
Act. 2	0	0	0	0	0	0	0	0	0	0	0	0	0
Study	0	0	0	0	0	0	0	0	0	0	0	0	0
Red.code	6	6	6	6	6	6	6	6	6	6	6	6	6

Code	96a	96b	97a	97b	98a
Act. 1	1	1	1	1	1
SSYK	2340	2340	2340	2340	2340
Children	5	5	5	5	5
Act. 2	5	5	5	5	5
Study	0	0	0	0	0
Red.code	6	6	6	6	6

Figure 4. Career codes and reduced codes for every half-year period

2.5 IDA-II life-event history

This analysis attempts to identify life events and to locate them in time, in order to facilitate a later analysis of how these events might have influenced the careers of middle-aged women. Events related to work, family and education between 1970 and 1998 were included. An effort was also made to identify *turning points* , i.e.. conditions under which working life took a new or changed direction which was not part of a deliberate plan. Finally, the content of work and career level as indicated by the SSYK96 code was integrated in this type of display (see Figure 5).

2.5.1. Data used for this analysis

For the interview data of 1998 the following information was retrieved: Occupational history, education biography, current and past family conditions in terms of number of children and present family status. Finally, a "life line" and life goals as recorded by the women themselves were retrieved from the questionnaires (Figure 5).

2.5.2. Plotting careers

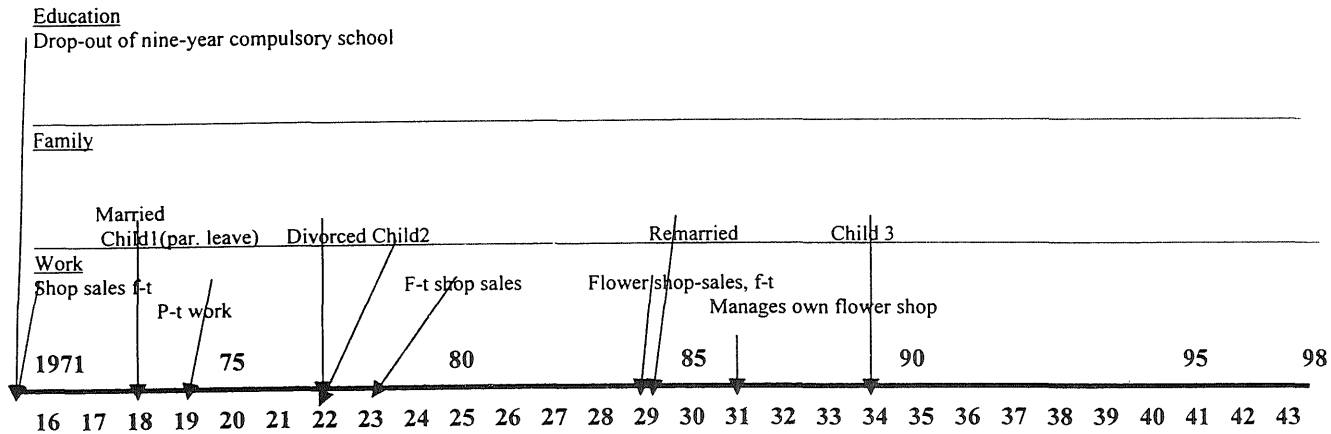
Starting at the age of 16 (i.e., in 1970), the end of the women's primary education, events were marked along a time axis reaching to the age of 43. Events in three life areas were indicated on the age line, using simple arrows to indicate the age at which each event occurred (see Figure 5).

1. *Educational events* were marked if the individual pursued a course or education longer than six months. Duration of the course and exams were also noted.
2. *Family-related events.* Marriage, divorce, and child births were indicated on the time axis together with other events, such as the death of a family member, family crisis, etc.
3. *Work-related events.* Acquiring new employment, the type of work, working hours (full time/part time), unemployment.

2.5 The coding of life satisfaction

This coding procedure provides a graphic illustration of the women's level of satisfaction over time. Two aspects of satisfaction were coded: satisfaction with life in general and a satisfaction with specific periods in the career history.

All women who participated in the medical examination were given a leave-after questionnaire to fill in at home and send back to the research team. As part of this questionnaire, they were asked to draw a line that corresponded to their level of satisfaction at each point in from birth to the time of the data collection (age was indicated on the horizontal axis). The vertical axis ranged from negative to positive and had a neutral midpoint which was indicated as a horizontal line. In order to transform these drawings into electronic input to the computer, a matrix was printed on a transparency film. The horizontal axis was split in half-year periods, while a numerical scale ranging from –10 to +10 was applied to the vertical axis. Placing the transparency over the original drawing enabled us to code a specific life satisfaction value for each half-year period. An example of a satisfaction graph is displayed in Figure 6.



Work and family combined, mostly full-time work, divorced twice, happily married at 29 and having her third child at 34
Work important in life-line, functions as a form of support in several life crisis,
Too much homework perceived as an obstacle at 43

Figure 5. Life trajectory displaying the "life line", life events and the contents and level of work as represented by the occupational code.

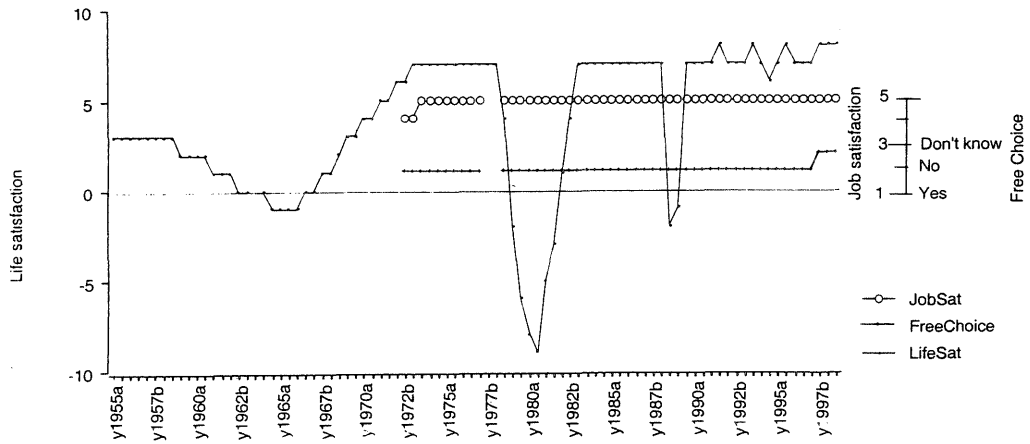


Figure 6. Plot of general life satisfaction, satisfaction with specific activity, and perceived choice of entering the activity.

Each woman's career history was covered retrospectively in the personal interview, gaining information on aspects such as paid work, studies, and parental leaves starting with the first period of paid work after finishing school. For each period that lasted at least six months, the major activity (e.g., full-time employment) was coded along with, where appropriate, a side-line activity (e.g., studies). The woman also rated her satisfaction with this period in general on a five-point scale ranging from 1 (not at all satisfied) to 5 (very satisfied). This information was then split up into half-year intervals such that the value given for a certain period was coded for each half-year interval during that period. In addition, the women reported whether she had herself chosen the major activity of a given period (=1), if circumstances had made her choose the major activity (=2), or that she did not remember the reasons (=3). This information was coded for half-year intervals following the same procedure as for reports on the satisfaction associated with each period.

With these three pieces of information coded for each half-year interval, the data were plotted on a line chart using the three different scales (see Figure 5). The graph makes it possible to put the level of life satisfaction in relation to satisfaction with the actual activity as well as the level of control the woman had reported concerning choice of activity.

2.6 The life-courses of three women - display of the methods

For a better understanding of the methods presented, Figure 7 displays all of them for one woman. The figure thus makes it possible to combine, and compare, the information provided in the occupational display, the reduced career code, the life-event history, and the life satisfaction plot.

3. Concluding remarks: Using the coding systems

It needs to emphasized that no coding system will be better than the raw data to which it is applied. In this case several steps were taken in order to obtain high-quality data (Bergman, 2000). For instance, work-biography data were collected in a personal interview, with opportunities for clarification and correction of errors and misinterpretations, interviewers were experienced and were thoroughly trained for this task, and only activities lasting at least 6 months were included. On the other hand, it is unavoidable that the precision of the data is affected by retrospective reporting.

This having been said, the IDA I and IDA II data bases still offer unique opportunities for the analyses of women's career patterns, and the various systematic coding systems constitute a first step. They may be used for a multitude of purposes, the first of which will be the identification of career or trajectory *patterns*. For the identification we intend to recognize interactions between family-related factors, working opportunities, and further education from the age of 16 until 43. *Turning points* in terms of family-related, work-related, and education-related events will also be recognized in the identification of career patterns. Examples of characteristics which may distinguish career types are:

- career level of first job (low, medium, high)
- upwards/downwards mobility
- timing of marriage and childbirth
- career level as related to age

- stepwise career vs. gradual change
- general orientation: family, work, mixed
- career within one occupation vs. change of occupations.

Once such patterns have been identified the corresponding groups may be characterized in different ways using information available in the two databases. Depending on each research question, career patterns may be regarded as either determinants or consequences. When regarded as determinants, we may ask questions like the following:

- Who is healthy at the age of 43? That is, what is the mental and somatic health condition at middle age of women of different career patterns?
- Who is "successful" in the material sense of the word? That is, what kind of career patterns have lead to favorable vs. unfavorable socioeconomic conditions? This question becomes particularly interesting since occupation and occupational level may be controlled for.
- Who is happy? That is, what kind of career patterns have lead to high vs. low levels of life satisfaction among middle-aged women?

These are only a few examples of issues that may be approached within the present career-pattern project using data from the IDA II database. In studies to follow, it will be natural also to regard career patterns as consequences of the individuals' early experience represented by the extensive data that were collected during the IDA I phase covering the ages from 10 to 26.

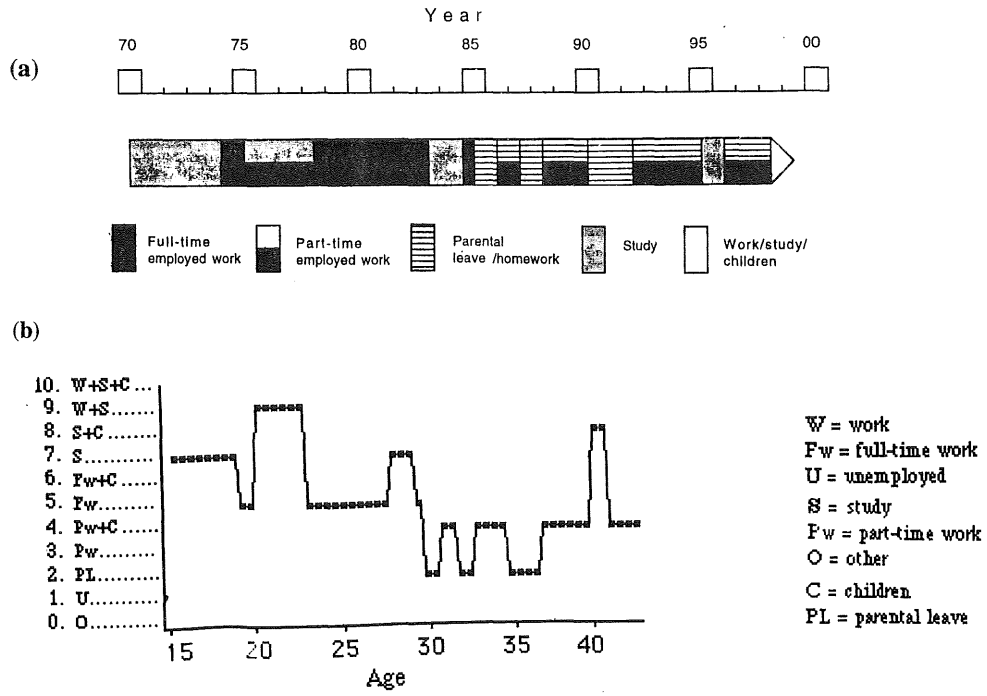
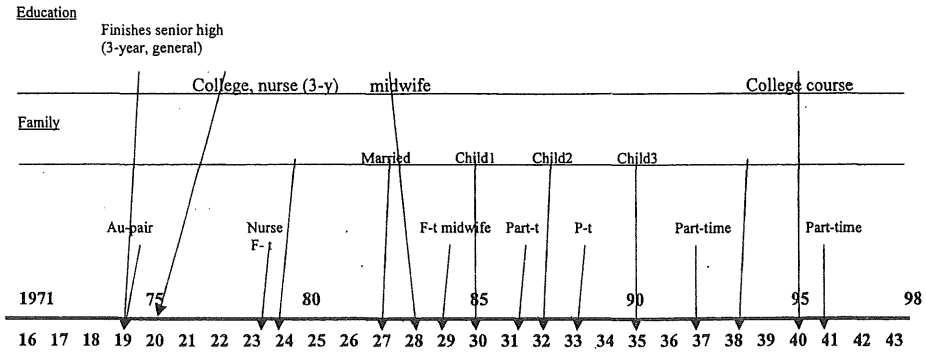


Figure 7. (a) Occupational display, (b) reduced career code, (c) life-event history, and (d) life satisfaction plot for one woman.

(c)



Study and work first and marriage + children later, combination of work and family, happily married for 20 years, satisfied with work and education but finds college studies very stimulating and plans to pursúe further studies.

(d)

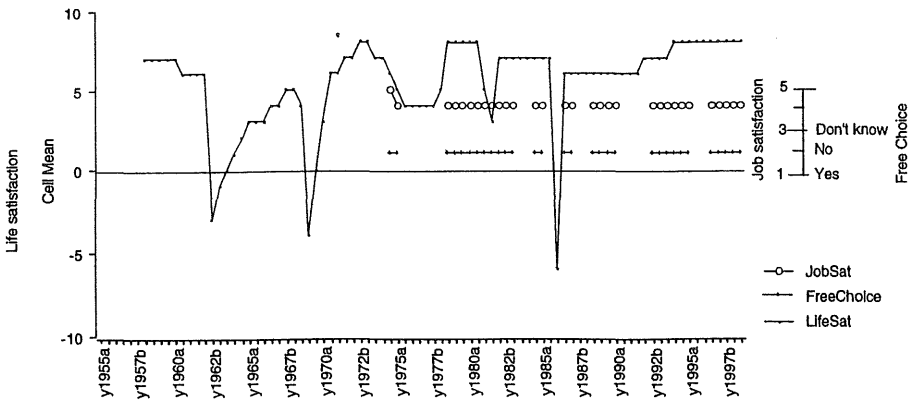


Figure 7. (cont'd)

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