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A Cohort Study in Switzerland"

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# AGING AND COHORT CHANGES IN SPORTS AND PHYSICAL TRAINING FROM THE GOLDEN DECADES ONWARD: A COHORT STUDY IN SWITZERLAND

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## 1. Introduction

If the main concern of gerontology is the individual aging process, the main contribution of sociology lies in its attempt to articulate secular changes – environmental and sociohistorical changes – with the aging process and to study their impact on human attitudes and behaviors along the life course (Riley, Foner and Waring, 1988).

In most Western European countries, the Golden Decades (roughly 1950-1980) were a period of fast and sustained economic growth associated with structural and cultural changes, a period described by analysts as a transition from industrial to post-industrial (or advanced industrial) societies. In Switzerland, economic growth started during the postwar years, around 1950, and the cultural changes in terms of way of life, behavior and values (Tocqueville's *mores*) followed from the 1960s onward.

This study deals with the consequences of the macro transformation at the individual (micro) level, focusing on a specific and significant field, that of participation in sports and physical training. It examines the differential impact of the changes on mature adults from two cohorts, the first (C1) born from 1905 to 1914, and the second (C2) between 1920 and 1929.

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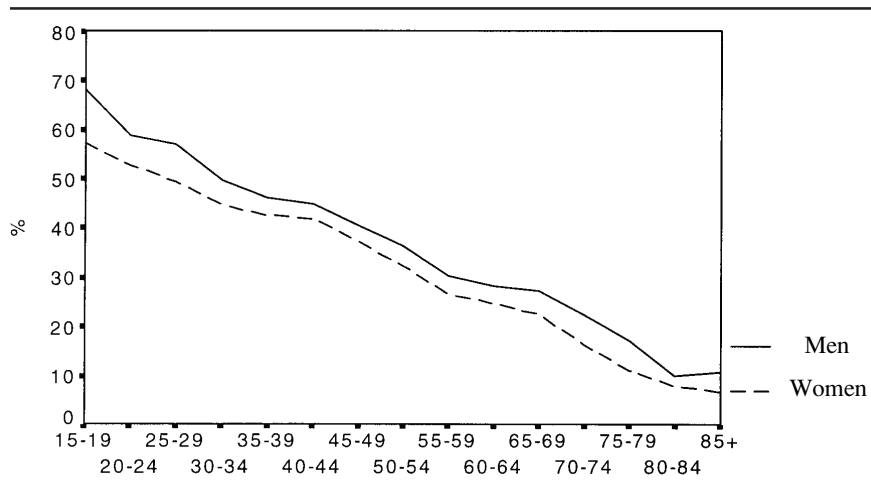
Based on a secondary analysis of data from two cross-sectional surveys, it analyses both the cohort (time lag) differences in participation in physical training and sports at two stages of the adult life course (mid-life and young-old age), and the longitudinal changes in both cohorts between these two stages.

## 2. Sports Activities and the Adult Life Course: The State of Research

### *The age-related-decline paradigm*

Scientific thinking about the relationship between participation in sports and aging is currently evolving and is subject to revision. The traditional position holds that there is a decline in participation throughout the adult life course. This view is sustained by the usual display of cross-sectional data showing that the older the age group, the lower the rate of participation (Figure 1; see also Heikkinen, Waters and Brezinski, 1985, p. 52-56; Pronovost, 1993, p. 109-111). Although this last conclusion is correct, strictly speaking, it strongly suggests a simplified interpretation, namely, that with aging, participation decreases. Such a deduction is fallacious because a comparison based on cross-sectional data (as in Figure 1) deals with discrete age groups at a given point in time, not with individuals observed at different ages.

**FIGURE 1**  
**Participants\* (%) in sports and physical training activities,**  
**by age group and gender (Switzerland, 1988)**



\* At least once a week.

However, among studies based on longitudinal data, some have also found a decrease in physical training and sports along the adult life course (Pohjolainen and Heikkinen, 1989). Arguments for the age-related decline are of common sense nature and are founded on strong evidence: with aging, energy levels drop, physical and functional capacity declines lower and participation therefore falls.

### *The context-and-cohort-change paradigm*

Other studies, most of them very recent, suggest a context and cohort related hypothesis: over the past few decades, there has been a general trend toward more leisure activities and among them, more physical calisthenics, exercises and sports. Most studies based on iterative cross-sectional surveys show an increasing rate of participation across the cohorts in a broad set of activities, at almost all ages (for France: Garrigues, 1989; Paillat, Delbès, Gaymu and Sammartino, 1993; for the former West Germany: Elkeles, 1997; for Quebec: Pronovost, 1993). Results based on multiple-cohort longitudinal panels are congruent with the former (for Finland: Pohjolainen, 1997; Hirvensalo, Lampinen and Rantenen, 1998; for the U.S.A.: Verbrugge, Grubber-Baldini and Fozard, 1996).

How is the growing participation in leisure activities, particularly of aging people in physical training and sports, explained in the scientific literature? In gerontological research, the most frequently mentioned factors are better health or functional capacities and improved levels of education and income (Bokovoy and Blair, 1994; Dishman, 1990). From the sociology of leisure comes the argument of increasing amounts of free time in all the main time cycles – day, week, year and life cycle. In Europe at least, mandatory retirement occurs at age 65 or 60, and de facto retirement often occurs earlier (Kohli, *et al.*, 1991; Markides and Cooper, 1987). This latter fact is seen as one reason for the broad trend toward general involvement of senior citizens in a large range of leisure activities (Parker, 1985, Pronovost, 1993). Leisure and consumption specialists also point out the development of public policies for leisure and sports and of a corresponding industry: a wide range of possibilities and commodities are now available, not only in the main cities but all around the country. But studies still show a lower involvement in sports and physical training among less educated people, among residents of small towns and rural areas, and also among blue-collar workers (Heikkinen, Karhu and Jokela, 1987; McPherson, Curtis and Loy, 1989).

Another line of explanation is found in changing cultural models and lifestyles (McPherson and Yamaguchi, 1995). As early as 1988, Marin observed a strong change in women's attitudes toward sports (Marin, 1988); in France and in Finland, the increasing participation is said to occur mainly among women (Garrigues, 1989; Paillat *et al.*, 1993, Pohjolainen, 1997). In the past, it is argued, sports were almost solely a male field; except for gymnastics, women were supposed to find their exercise in housework (see also Garrigues, 1989). Interestingly

enough, O'Brien Cousins (1995) introduces a socialization theory: gender, age and class behaviors are shaped during the socialization process: "being old in the 1990's is the present identity of a particular social group who has experienced a certain social orientation to life and look upon retirement as 'a well earned rest'" (p. 260).

The same rationale could be extended to social classes: up to the middle of this century, for the members of the working classes (rural and "blue-collar" urban workers), athletics was part of the mandatory school program (*mens sana in corpore sano*), but once in active life, work was seen as providing sufficient physical exercise: "Work keeps fit!" (Elkeles, 1997; Heller, 1983; Lalive d'Epinay, Manidi and Stuckelberger, 1997; Vigarello, 1978, 1988). But at the same time, sports were seen as highly recommendable for the elite (Elias and Dunning, 1986). "Watch out, the Empire doesn't belong to the brilliant intellectuals, but to the willful; ... for them, sport is a character building, a school for endurance and will, the art of boxing is the 'struggle for life'" proclaimed Baron P. de Coubertin in 1890<sup>1</sup>. Thus, during adult life, sports were at that time mainly the privilege of upper-middle and upper-class males.

With reference to age-related behaviors, it has been argued that "seeing old age as an active phase of life is becoming more accepted in present-day society" (Hirvensalo *et al.*, 1998; see also Pohjolainen, 1997). It is suggested that Western societies moved from a "rest in old age" paradigm (O'Brien Cousins, 1995) typical of industrial society to a "sport and activity for healthy aging" paradigm well exemplified by such biennial scientific conferences as the "Physical Activity, Aging and Sports" conference sponsored by the WHO. Kirk, a historian of medicine from the Danish Institute of Gerontology, points out that during the 19th century and the first part of the 20th century, human life was seen in the medical discourse as the spending of a fixed amount of heat energy localized in the heart. This "energy consumption hypothesis" was also related to the image of the incurvation of the body with aging. This explained differences in longevity and health between social classes. Thus, typical advice given to old people in the health literature was that "rest is a virtue in old age" (Kirk, 1997, p. 63). During the industrial period, the body was mainly seen as a factor of production, a strong body and good health as a matter of good fate (like beauty) on the other; now the body is seen as a part of the self, not fated but a project which must be worked on (Lalive d'Epinay, 1991; Le Breton, 1990).

But even those who underline the changes also point out the current persistence of "society's image of the elderly, which indeed presents a stereotype of passivity and restriction" (Lehr, 1992, p. 57; see also McPherson, 1994; McPherson and Yamaguchi, 1995). According to Lehr, this image is associated with the classic "deficit model" of aging, whose logical consequence is the age-related-decline paradigm.

Put together, these studies underline the trend toward increasing and socially more egalitarian participation in leisure activities, including sports and physical training, at all ages, during the last decades of the 20th century. As seen before, some authors related this trend to the expansion of free time all along the life cycle, others to better income and health, or to the development of infrastructure and commodities, and still others to the diffusion of new values and images, some of them referring to the body.

***The macro-micro link: 1950-1990 as the transition from industrial to post-industrial societies***

From a macro sociological point of view, the context-and-cohort-change paradigm, with its set of observations, fits the main rationales of theories on the transition from industrial societies to the post-industrial world (Bell, 1973; Touraine, 1969). Some current analysts choose to term the new period “advanced modernity” (Giddens, 1990), or “postmodern” (Bauman, 1991). The wording may change, but among the theorists of contemporary Western society, there is general agreement that after the Second World War, a period of sustained economic growth – the so-called Golden Decades (1950-1980) – together with the development of the welfare state, pushed Western countries into a process of sweeping change. This process led to the upsurge of a new societal model which was given different but always significant names: “affluent society” (Galbraith, 1958), which stresses the economic improvement; “consumption society” (Baudrillard, 1970), which points to the changes in the way of life, “leisure society” (Kaplan, 1960; Dumazedier, 1962, 1988), which draws attention to the expansion of free time and the new orientation of life. In terms of social structure, the move was from a class system with a strong blue-collar working class and peasantry, to a stratified system largely dominated by middle class white-collar workers; from a gender division of work to a two-income household; from a life course pattern in which work was human destiny until incapacity or death occurred, to the institutionalization of retirement, with the rise of a third and a fourth age (Kohli, 1985; Laslett, 1989). In his analysis of the French case, Mendras (1988) shows how the transformations, from structural became cultural. As from the second of the Golden Decades, the 1960s, formidable changes in ways of life, values and world-views, led analysts to talk about a “world turned upside down” (Yankelovich, 1981); the classic ethos of work and duty (Weber, 1920/1964), in which the individual is subordinated to society and its collective project of progress and world transformation, gave way to a new cultural model where the individual and his self-fulfillment are the core (Yankelovich, 1981; Bellah *et al.*, 1985; Zoll, 1992; Lalive d’Epinay, 1994; Inglehart, 1990, 1999). In this cultural context, the body is seen as the locus of self-expression and self-fulfillment (Featherstone, Hepworth and Turner, 1991; Le Breton, 1985, 1990); hence the new emphasis on sports and physical training all along the life course.

### *Summary and Hypotheses*

The age-related-decline paradigm is based on the biological assumption that the physical strength and capacities of human beings decline. However, this overlooks the fact that the process is not linear all along the course of adult life and, more importantly, it does not take into account how societies shape biological constraints like gender differences and aging processes. At the empirical level, the evidence for this paradigm is at present mainly cross-sectional.

The context-and-cohort-change paradigm takes into account the basic human constraints, but considers how societies work on them with the passage of time. At the empirical level, this paradigm is documented by a range of longitudinal and iterative cross-sectional studies. At the theoretical level, it takes the form of a logical deduction in the domain of individual behavior, from macro sociological theories on the transformation of Western societies during the second half of the 20th century. Surprisingly enough, with few exceptions (Pronovost, 1998), this link between the macro and the micro level has not been mentioned by the authors of the empirical studies quoted.

Our working hypotheses are thus derived from the context-and-cohort-change paradigm. Empirically, it is a three-sided one. First, the argument refers to changes from one cohort to the other (cohort changes *stricto sensu*), related to sociohistorical trends. Second, the same sociohistorical trends may also provoke behavioral and attitudinal changes in individuals belonging to specific cohorts, during the course of their adult life (longitudinal - intracohort changes). Third, it also suggests a change in the sociodemographic composition of the participants.

These three aspects will be explored here. We seek to grasp the impact of the new possibilities and values coming from the environment on individual behaviour at specific stages of the life of two different cohorts. This first point raises another issue: accepting the hypothesis that sociohistorical changes have increased individual participation in physical activities, but that at the same time aging *per se* tends to reduce the activity potential of the individual, what then is the result of these two opposing forces? Lastly, if the hypothesized increase in participation is attested, which are the main social categories involved in this process?

In the context of Switzerland and on the basis of data collected from two 10-year birth cohorts (see below), this study investigates (1) intercohort (time lag) changes in participation in physical and sports activities at two times in the life course: mid-life and young-old age; (2) intracohort (longitudinal) changes between these two points; (3) time lag and longitudinal changes in the sociodemographic composition of the participants.

*Hypothesis 1:* Participation in sports and physical training increased during the time lag from the first to the second cohort, both at mid-life and when young-old (cohort changes).

*Hypothesis 2:* Contrary to the age-related-decline paradigm, no acute decline in the rate of exercisers is expected to be observed at young-old age compared to mid-life, at least among the most recent cohort (longitudinal changes).

*Hypothesis 3:* Changes in the sociodemographic structure of exercisers from the first to the second cohort, but also longitudinal compositional changes within each cohort, should indicate the move from an elitist pattern of participation (mostly upper-middle and upper class, male and urban), to a more open, democratic one.

### 3. Method

#### *Selection of the two cohorts*

In this article, we proceed to a secondary analysis of part of the material drawn from two cross-sectional surveys of the aging population, the first having been carried out in 1979 and the second fifteen years later, in 1994. The main goal of the 1979 project was to arrive at a comprehensive description of the aging population in a wide range of domains: health, income and housing, households, family, social networks, activities, attitudes and beliefs (Lalive d'Épinay *et al.*, 1983). The 1994 survey reproduced the general pattern of the first, one of its goals being a comparison with the 1979 study and a systematic study of the changes that had occurred in the elderly population during the lag of fifteen years (Lalive d'Épinay, *et al.*, 2000). Thus both studies have a similar design and follow the same methodological and practical rules. Both are based on random samples, stratified by gender, five-year age groups, and regions: one peculiarity of the design was to make possible a comparison between the aging population in a metropolitan area (the canton of Geneva), and a semi-rural area (the Alpine region of Central Valais), both located in the western, French-speaking part of Switzerland. The 1979 survey dealt with elders aged 65 and over, the age of 65 being in Switzerland, for males, the qualifying age for the old-age pension and most retirement pensions<sup>2</sup>. Because of a trend toward earlier retirement, the 1994 survey started with the age of 60<sup>3</sup>.

As is usually the case, the questionnaire included biographical questions, about the respondent's youth, family composition and trajectory, education, professional career, time of retirement. A peculiarity was to insert also a specific set of questions about the subject's activities (religious, commitment toward the community, leisure) "when close to 50 years old". The use of reminiscence will be discussed further, but let us mention here that because it relies on the memory of the respondents, this set of questions was only put to the community-living (and not home-resident) elders younger than 75 years.

On that basis, we decided to select among the two surveys both age groups of 65 to 74 year-old persons when interviewed, because they provide reliable and

comparable information about their involvement in sports and physical training at two points in time of their life course: when interviewed, i.e. at 65 to 74 years old, an age category termed “young-old” in North American gerontology, “third age” in European; and at “mid-life”, a period corresponding to the peak of a professional carrier, and also the turning point before the second part of life. These two groups of the same age belong to two well differentiated cohorts, the members of the first (C1, interviewed in 1979, n = 1012) having been born between 1905 and 1914, and those of the second (C2, interviewed in 1994, n = 661) having been born between 1920 and 1929. The sociohistorical embedding of each will be described in the next section.

### *Indicators*

Among the set of questions dealing with activities, two refer to sports and physical training and were asked in the following way:

“Currently, do you:

1. Practice physical training: gymnastics of all kinds, aerobics, etc. (but other than strolling)?
2. Practice a sport (other than physical training or strolling)?”

The possible answers were: no/yes, at least once a year/yes, at least once a month/yes, at least once a week/yes, almost every day.

The same battery of questions about activities was submitted to the subjects younger than 75 years in the following form:

“When you were close to 50 years old – let’s say, between 45 and 50 – did you practice ... (etc.)?”

Two measures were then included: firstly comparative regarding current practice (more, equal, less than now); and secondly with the same scale of frequency as indicated before.

*Regularly active (active)* refers here to people practicing *once a week or more*, which means that the activity is part of the agenda, that time in the week is set aside for it and that exercise has come to be part of the weekly routine. In other words, exercising has become part of the way of life (Lamprecht and Stamm, 1994; Paillat, *et al.*, 1993; Pronovost, 1993).

Based on both indicators, an index of sport and physical training participation was constructed. We designated as *exercisers*, those who practice at least one of the two categories of activity, at least once a week.

### *Note on the use of reminiscence*

The recourse to biographical material requires some discussion. The biographical approach makes possible the exploration of an individual's past life and trajectory. Therefore, it provides a very valuable insight into the dynamic, biographical study of individuals and cohorts. In the case of this article, it provides a way of comparing the behaviors of the members of two cohorts at two points of their life, and thus to study intercohort (time lag) and intracohort (longitudinal) changes.

The critical methodological point in using reminiscence concerns the reliability of memory. Panel data would be more reliable, when available! For the purpose of this paper, data going back to 1950 would be necessary, but such data set does not exist in Switzerland and neither, to our knowledge, in any other European country.

Is the use of reminiscence really critical? According to Blossfeld and Götz (1995, p. 17s) "the disadvantages of retrospection are only a matter of degree": the use of a questionnaire is based on the assumption that questions will be answered in a reliable way by the interviewee, who may have plenty of reasons, other than memory deficiency, not to do so. Thus we agree with Campbell (1992, p. 1148), who says that retrospective questions will "provide accurate and detailed information" when "carefully used". The constraints are: (a) that the population studied must have a normal mnemonic functioning; this is why questions based on reminiscence were not put to persons aged over 75; (b) that questions on past opinions and beliefs must be avoided because they could result from "autobiographical reconstruction" (Plumer, 1983; Lalive d'Épinay, 1985); and (c) that the reminiscence of facts or events may be subject to a phenomenon of "time/space telescoping", i.e. confusion in the spatial-temporal location of the event (Menard, 1991, p. 42). In our case, reminiscence deals only with fact and period: ego-activity and its intensity close to mid-life, 50 years old being a very memorable age from a subjective point of view. Finally, the comparative frame ('at that time, did I practice more or less than now?') makes the answer easy.

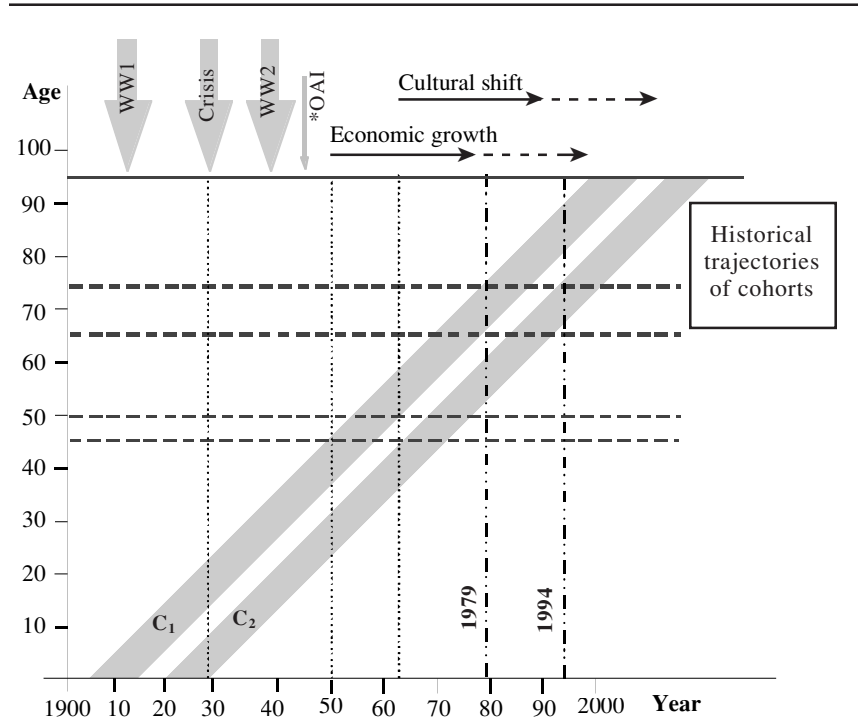
## **4. Sociohistorical embedding and characteristics of the cohorts**

### *Historical embedding<sup>4</sup>*

Dealing with time lag and longitudinal changes is dealing with the development of human life in a historical context, with sociohistorical subjects in the double sense that they were making history and at the same time being subjected to it (Elder, 1974, 1994).

Graph 2 displays the trajectory of each cohort, coordinating the age of the cohort's members (y-axis) with the historical time (x-axis).

**FIGURE 2**  
**Historical context of the cohorts' life trajectory**



\* OAI: mandatory Old Age Insurance

The members of the first cohort (C1) were born before the First World War, between 1905 and 1914, and those of the second between 1920 and 1929, during the decade following that war. Members of both grew up during a period when life was harsh: Switzerland was not yet the wealthy country it is known to be now. But already at that time their social embedding differentiates our two cohorts. The schooling system improved fast and the second cohort received a better education (see Table 2). The Great Depression had just started when the members of C1 were reaching adulthood, making the transition harder, and the first part of their active life was spent before the advent of the Golden Decades around 1950, by which time they were about 40 years of age. They were approaching mid-life at the end of the first Golden Decade, but before the beginning of the revolution in values and lifestyles, changes they experienced from then on to 1979, the year of the interview.

Although the members of the second cohort, born between 1920 and 1929, shared with the members of C1 some memories of the “hard time” during which

they had spent a good part of their youth before the Second World War, they had in general a much easier life. After the war, they benefited from a very open and expanding labor market. Most of their active life paralleled the development of the Golden Decades and they were on the verge of mid-life around 1970, when the revolution in lifestyles was well under way, a fact that should differentiate them from C1.

In Switzerland, as in most of Western Europe (with some time lag depending on the country), the Golden Decades were a period of quasi-constant economic growth and full employment, which generated profound changes in ways of living, lifestyles and culture. In the case of Switzerland, the GNP per capita grew steadily from 1950 (when it amounted to 13,000 constant-1980 Swiss francs) to 1974 (27,000 francs). The wage index of manual workers and employees doubled during this quarter century. The consequences on household spending were very visible. Between 1950 and 1975, spending shifted from a structure dominated by basic needs to a new one comprising three main domains: first, basic needs (food, clothing, housing and related costs), which nowadays only consumes about one-third of financial resources (compared with about two-thirds of the average budget up to 1950); second, taxes and insurance, representing about one-quarter of the total expenses (as against 12% up to 1950); and third, transportation, leisure, travel and education, which amounts to another quarter of the expenses (compared with only 8% in 1950). This new structure has been stable since 1975.

The impact of economic growth on the way of life was felt during the 1960s, which were not only the decade of the French students' revolution in 1968, but also the decade of the automobile and television boom, and of the spreading use of chemical contraception. The 40-hour working week with a two-day weekend became the norm, as did four-week summer holidays.

Since the 1974 oil crisis, economic performance has been more erratic, but the GNP per capita still grew up to the peak of 1990 (32,000 constant-1980 Swiss francs). Only then did Switzerland enter a period of stagnation and (albeit low) unemployment. Up to 1996, this had little impact on the structure of household expenditure.

Regarding old age, old age insurance was adopted by national referendum in 1947 in order to secure a basic income for the elderly. This is a universal pension, the age of eligibility being 65 for men, and 62 for women. It is the first pillar of the Swiss "three pillars" doctrine, the second pillar being the retirement pension, made mandatory for wage earners by a federal law in 1982, and the third individual savings. Improvement in the economic situation of elderly people came more slowly than it did for the active population, but has been regular up to now (Lalivé d'Épinay, Bolzman and Sultan, 1987).

### *Cohort characteristics*

Table 1 presents a selection of social, cultural and health characteristics of each cohort. The mean age of each group when interviewed (in 1979 and 1994 respectively) is very close, which makes them fairly comparable.

Improvements in the school system during the second quarter of this century quickly raised the mean level of education: only one-third of the members of C1 passed the basic level, whereas 60% of C2 did. As far as the occupational base is concerned, C1 is characterized by a strong working class combined, in the Alpine area, with the peasantry (mainly small farm owners). The changes from C1 to C2 are very typical of the move toward a social structure dominated by middle-class 'white collars' during the third-quarter of this century, accompanied by a sharp decline in number of the peasantry. In 1979, one-third of C1 males were still active when interviewed but only one-quarter of C2 in 1994, reflecting both the decline of the self-employed categories and the trend toward retirement at legal age. Economic growth and social security led to a fast increase in the number of elders with a retirement pension, and a decrease in the number having a low income.

Compared to C1, members of C2 enjoyed significantly better health, as measured by all three indicators: functional status, depressive symptoms, and subjective health.

Religious affiliation and church attendance remained largely stable (with a slight decrease in the latter), but huge attitudinal intercohort changes were observed: members of C2 adopted a more progressive world-view (a majority disagreeing with the traditional social stance on women), and disengagement attitudes related to aging waned.

During the "third age", sharing life with a partner was by far the most common situation and, thanks to the increasing life expectancy, this is still consolidating. Meanwhile, at that life stage, the rate of widows declined sharply. The mean number of children was the same from one cohort to the other, but the mean number of siblings was lower in the second cohort. Furthermore, the fact that the number of children was lower than that of siblings indicates that the members of each cohort had a more restrictive procreation behavior than their parents.

The sociohistorical dynamic thus had a wide-ranging impact on the cohorts, from social status, health and material conditions of living to attitudes and values.

## 5. Results

### *Intercohort (time lag) changes*

At mid-life, the rate of **exercisers** among C1 was 30.2%. Fifteen years later, during the 1970s, the same rate among C2 was 44.5%, a relative increase of 50%. Thus,

**TABLE 1**  
**Social, economic and cultural profile of the cohorts**

	<b>C1 (1979)</b>	<b>C2 (1994)</b>	<b>% C2 – % C1</b>
Mean age ( <i>SD</i> )	69.3 (2.8)	69.0 (2.8)	-0.3 *
Education (%):			
Compulsory schooling (or less)	65	40	-25
Secondary	24	40	+16
Higher	11	20	+ 9
	100	100	***
Socioeconomic status (%):			
Farmers	14	4	-10
Blue-collar workers	31	15	-16
Small owners, artisans	16	13	- 3
White-collar employees	21	28	+ 7
Low service class	12	24	+12
Higher service class	6	16	+10
	100	100	***
Currently employed (% among males):	33	24	- 9 ***
Income:			
% low income	45	32	-13 ***
% with retirement pension	32	55	+23 ***
Health (%):			
Functional health frail or impaired <sup>a</sup>	22	12	-10 ***
Depressive symptoms: 4+ <sup>b</sup>	21	9	-12 ***
Self-rated health: bad or rather bad	19	4	-15 ***
Marital status (%):			
single	10	8	- 2
married	60	68	+ 8
divorced	6	8	+ 2
widowed	24	16	- 8
	100	100	***
Family network:			
Current mean number of children ( <i>SD</i> )	2.2 (2.0)	2.2 (1.6)	0
Mean number of siblings when 20 y.o. ( <i>SD</i> )	3.8 (2.6)	3.2 (3.0)	- 0.6 ***
Religion (%):			
Catholic	68	68	0
Protestant	28	24	- 4
Other	2	3	+ 1
No religion	2	5	+ 3
	100	100	**
Church attendance (once a month or more)	70	64	- 6 **
Beliefs toward society and self (% of agreement):			
“The proper place for a woman is the home”	67	42	-25 ***
“For people like me, it is better to stay home”	47	20	-27 ***
“For people like me, it is not important to be concerned about clothing and personal appearance”	23	14	- 9 ***

<sup>a</sup> Scale constructed on 5 basic and 3 mobility (I)ADL or (Instrumental) Activities of Daily Living. (Katz *et al.*, 1970; Lawton and Browdy, 1969.

<sup>b</sup> Cf. Wang, Trub and Alverno, 1975.

C1: N = 1012; C2: N = 660. Significance (c2 test or T test, when applicable): \**p* < 0.05.  
 \*\*\**p* < 0.01. \*\*\*\**p* < 0.001.

during that lapse of time, a very significant push toward exercising occurred among people close to the middle of life. A detailed look at table 2 shows that the increase is divided in equal parts between sports and physical training.

**TABLE 2**  
**Participation rate\* in physical training and sports**  
**in two cohorts at mid-life (I) and when young-old (II),**  
**with indication of intercohort changes (III)**

	I. At mid-life		II. When young-old		III. Intercohort changes (% C2 - % C1)	
	C1 (1950-1959)	C2 (1965-1974)	C1 1979	C2 1994	Mid-life	Young-old
Activities:						
Physical training	19.0	26.3	26.9	31.4	+ 7.3 ***	+ 4.5 *
Sports	20.8	28.5	10.6	20.5	+ 7.7 ***	+ 9.9 ***
Total exercisers	30.2	44.5	32.6	44.0	+14.3 ***	+11.4 ***

\* At least once a week.

C1: N = 1012; C2: N = 660. Significance (c2 test): \*p < 0.05. \*\*p < 0.01. \*\*\*p < 0.001.

The same trend is observed at the second point of time in the life course, young-old age: from C1 to C2, between 1979 and 1994, the rate of exercisers jumped from about 33 to 44%. At that stage of life, the increase owes more to sports than to physical training: the rate of elders active in sports was low in 1974 (10.6%) but it doubled among C2 in 1994 (20.5%).

Thus, these first results show a consistent intercohort increase in the rate of exercisers, at both points in time of the life course. Noteworthy also is the fact that the practice of a sport (disregarding physical training) on a regular basis was very uncommon for an aging person until 1980, but had become the habit of one "third age" person in five by the middle of the 1990s.

### *Longitudinal changes from mid-life to third age*

At the aggregate level, in both cohorts, the level of participation at young-old age remains as high as it was at mid-life. This longitudinal profile of stability shared by both cohorts is very different from the descending slope shown by cross-sectional data (compare Figure 3 with Figure 1) and invalidates the age-related-decline hypothesis, at least up to the third age period. A more detailed look at Table 3 and Figure 1 shows that this stability is the result of two conflicting trends: a decrease in sports participation, and an increase in physical exercise, which suggests a strategy of adaptation on the part of aging individuals, with a tendency to choose softer forms of training, involving no risk of physical interpersonal contacts.

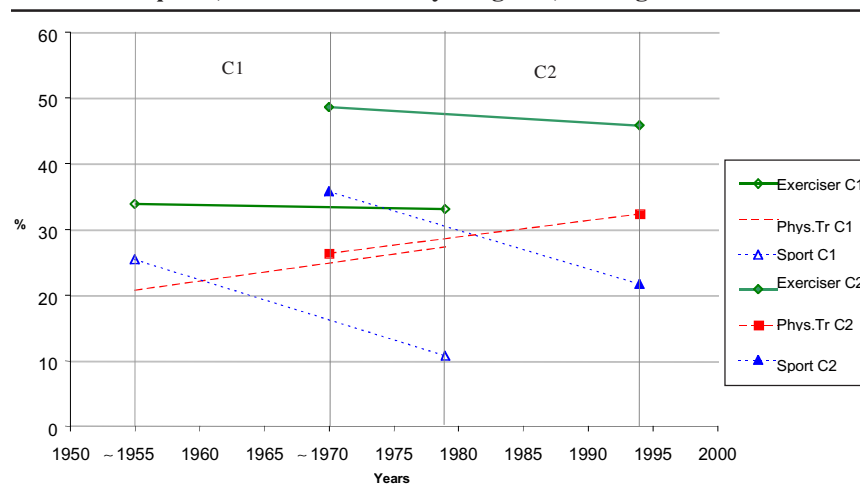
**TABLE 3**  
**Longitudinal differences in participation rate\***  
**in physical training and sports among the cohorts**

	Longitudinal change (% active when young-old – % active at mid-life)	
	C1	C2
Activities:		
Physical training	+ 7.9 ***	+ 5.1 *
Sports	-10.2 ***	- 8.0 ***
Total exercisers	2.4	- 0.5

\* At least once a week.

C1: N 1012; C2: N = 660. Significance (McNemar test): \*p < 0.05. \*\*p < 0.01. \*\*\*p < 0.001.

**FIGURE 3**  
**Longitudinal changes in participation rate\* in physical training**  
**and sports, from mid-life to young-old, among the cohorts**



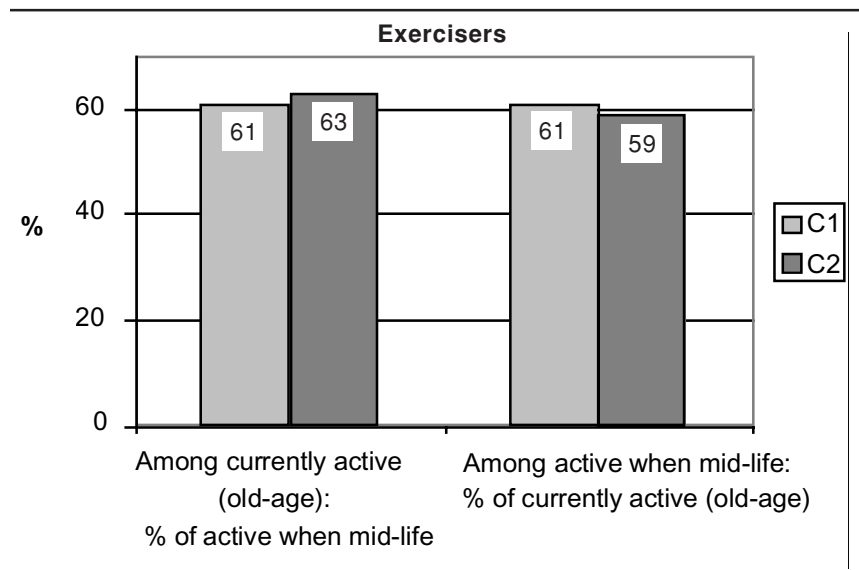
\* At least once a week.

C1: N = 1012; C2: N = 660

The longitudinal stability of the aggregate rate at the two times in adult life raises another question: does it result from a pattern of continuity in individual behavior? In other words, is past physical activity a good predictor of continuing practice in old age, as some authors have pointed out (Hirvensalo *et al.*, 1998)? An alternative argument is that contextual, social and cultural changes may both encourage people to remain active with aging and also incite young retirees to start some training.

Figure 4 shows that among the exercisers at mid-life, around 60% in each cohort continue to do so when young-old; thus four out of ten have given up exercising over that period. Conversely, among third-age exercisers, around 60% in both cohorts are long-term enthusiasts, meaning that 40% are therefore newcomers.

**FIGURE 4**  
**Continuity among exercisers \* between mid-life and young-old age,**  
**C1 versus C2**



\* At least once a week.  
 C1: N = 1012; C2: N = 660

These results show that continuity is a feature in the case of most aging elders. But they also indicate the presence of contradictory trends that lend strength to the context-and-cohort-change hypothesis: during the period under scrutiny, the incentives to start a physical activity are at least as effective as the traditional age-related barriers.

***Sociodemographic changes among exercisers***

Does the increase in participation from C1 to C2 reflect attitudinal changes among specific sociodemographic categories?

Gender and region are given as dummy variables, and the social status has three positions (low, middle, upper-middle and upper) resulting from a combination of occupational, educational and income indicators. Logistic regression analyses are

applied to gauge the influence of each of the three dimensions on the dichotomous dependent variable, exercisers versus non-exercisers, (a) at mid-life (Table 4, col. I) and (b) when young-old (Table 4, col. II). A changing parameter model is used (Firebaugh, 1997). This procedure consists in directly testing if the effect of an independent variable on the dependent variable changes over time, by introducing an interaction term between this variable and the time, or more precisely here the cohorts (see in Table 4 the *Cohort change* lines). Results are expressed as an odds ratio (the coefficients going from 0 to ∞, with 1 meaning equal odds). The statistical significance is calculated through an adjusted Wald test, a procedure suited to analysing data obtained from a complex survey design, which is the case here. The statistical significance of the longitudinal differences between the regression coefficients is estimated using the same test (see Table 4, col. 3).

**TABLE 4**  
**Exercisers\*: cohorts and longitudinal changes**  
**according to gender, region and social status.**  
**Logistic regression with a changing-parameter model (odds ratio)**

	I. At mid-life	II. When young-old significance of the longitudinal changes	III. Statistical significance of the longitudinal changes
<b>Gender</b> (Women vs men)			
C1	2.67 ***	0.91	***
C2	1.25	0.94	
Diff. C2 vs C1	0.47 ***	1.03	
<b>Region</b> (Semi-rural vs urban)			
C1	3.73 ***	1.41*	***
C2	1.02	0.96	
Diff. C2 vs C1	0.27 ***	0.68	
<b>Social status</b> (Low vs middle)			
C1	1.79 ***	1.53**	
C2	1.12	1.08	
Diff. C2 vs C1	0.62	0.71	
<b>Social status</b> (Low vs upper)			
C1	4.14 ***	2.15**	**
C2	1.62 *	1.01	*
Diff. C2 vs C1	0.39 *	0.47*	
<b>Cohorts</b> (C1 vs C2)	6.72 ***	2.32***	

\* At least once a week.

C1: N = 1012; C2: N = 660. Significance (adjusted Wald test): \* $p \leq 0.05$ . \*\* $p \leq 0.01$ . \*\*\* $p \leq 0.001$ .

The above table shows, for example, that among C1, at mid-life, males have about two and a half times (2.67) more chances of being exercisers than females, a very significant difference, but when young-old, the odds are close to 1 (0.91) and the chance of both genders about the same; this longitudinal change in the gender impact on being an exerciser is very significant.

*Cohort C1*

In about the 1960s, when the members of C1 were reaching mid-life, the socio-demographic profile of exercisers was one of acute social inequalities: the odds of being an exerciser were about two and a half times (2.67) higher for men than for women, and close to four times higher (3.73) for urban residents than for residents in the semi-rural region. Compared with members of the lower class, the odds of being active were about twice as high (1.79) for the middle classes and four times higher (4.12) for upper-middle and upper class members.

Now, when this cohort (C1) reached the third age, in 1979, the profile of the exercisers had altered, due to significant longitudinal changes in each of the three dimensions (Table 4, col.3). Under the impact of a strong increase in participation among women, each gender was now equally represented; regional and social status inequalities still existed but the odds ratios were lower and less significant than before (Table 4, row C1, col. 2).

*Cohort C2*

When C2 members were close to mid-life – during the 1970s – the socio-demographic profile of the exercisers was clearly different from that of the C1 exercisers (Table 4, col.1, row C2). Gender and regional differences were no longer observed, and the discriminatory effect of social status was weaker, differentiating only the low strata from the upper.

Finally, in 1994, at the time when C2 members had passed the age of retirement, one longitudinal change could be observed among the participants: the impact of the social status factor had disappeared. The profile of participants showed a fairly even participation according to gender, region and social status (Table 4, col. 2, row C2: the four odds ratios are close to 1).

*Pattern of cohort changes*

Each cohort showed a distinctive pattern of change. The C1 pattern was *longitudinal*: the sociodemographic composition of exercisers changed greatly between mid-life and third age. At mid-life, during the late 1950s, exercisers were mostly male, upper and middle class, and from the metropolitan area, whereas in 1978, third age participation was more egalitarian, even though social status and regional distributions remained uneven.

Compared to C1, C2 exercisers had, from mid-life on, a different socio-demographic profile, displaying already around 1970 an even participation of both genders and both regions; social status still had some impact, but that would disappear at young-old age. Thus, although a slight longitudinal evolution is observed among C2, its pattern of change is mainly *time-lag* or *comparative* with C1.

## 6. Discussion and conclusion

Our results lend strong support to each of the three hypotheses.

To hypothesis 1: A time-lag comparison reveals a strong increase in the number of exercisers among the second cohort relative to the first. This increase is already recorded at mid-life in the case of C2 members, and is confirmed at the later stage. The higher level of participation among C2 at mid-life, i.e. during the 1970s, than among C1 at the same time of life, i.e. around 1960, is in tune with the chronology of the Golden Decades, with the “cultural revolution” that started during the 1960s. In third age, the lasting higher participation among C2 reflects its longer exposure to the changes.

To hypothesis 2: Longitudinally, no decrease in the rate of exercisers is observed, either in C2 or in C1, a fact that runs counter to the age-related-decline paradigm. If we accept that during the industrial era, a decline in participation with aging was a fact – a hypothesis well documented historically (Heller, 1988; Vigarello, 1988), but not testable with our data – then we can conclude that during the 1960s and 1970s, an attitudinal change toward exercising occurred among C1.

These results are in agreement with the line of current studies on third age populations (e.g. Paillat *et al.*, 1993; Pronovost, 1993; Lalive d' Epinay *et al.*, 2000): profound changes in habits and behaviors are observed, changes which do not fit the concept of adaptation to aging as strength and energy decline, but reflect new behavioral patterns consonant with the “healthy aging” message.

To hypothesis 3: In C1, when its members were on the verge of mid-life, sports and physical training enthusiasts were predominantly male, urban and from the upper-middle and upper social strata: up until the late 1950s, practicing sports and physical training in advanced adult life was the prerogative of a male elite. This situation evolved quickly, with a spinoff effect across the main lines of sociodemographic differentiation, until the point was reached among the C2 third-age exercisers where an almost even participation is observed according to the three criteria under scrutiny. The increase in the rate of exercisers is common to all the various categories considered here (the only exception being persons of the upper-middle and upper strata), but is especially spectacular among women, people of the semi-rural area, and persons of low social status. Only 22% of the C1 mid-life females exercised but this rate jumped to 42% in C2 at mid-life, and 44% in third age. Among people living in the semi-rural region, the rate of exercisers rose from 18% (C1, mid-life) to 44% (C2, mid-life) and 44% (C2, third age), while exercisers of low social status moved from 22% to 41% and 43% respectively!

Our concluding remarks deal with three topics: continuity and change during advanced adult life; the likelihood that there is a ceiling to participation in physical training and sports; and the link between “grand” theories and empirical research on behaviors and attitudes.

From a psychosociological perspective, the theory of continuity in human behavior and way of life during the aging process is well documented (Atchley, 1989, 1999). However, although not explicitly, this paradigm postulates stability at the macro-level of the socio-historical environment. In a period of rapid and widespread change such as the second half of the 20th century, the likelihood of changes in ways of life and of deep behavioral reshaping must be taken into account. Our research recorded a high turnover among exercisers from mid-life to third age: in both cohorts, we found about 40% of newcomers among the exercisers, i.e. persons who began to exercise on a regular basis when more than 50 years old, and also a dropout rate of about the same size. Thus, during these decades, strong incentives to include exercising in one's way of life were taking effect among aging adults, although motives to stop any sports or training remained active. Our results are not at variance with the continuity paradigm: remember that a majority in both cohorts (also enhanced by the favorable contextual changes) behaved according to this pattern. But this example shows that psychosocial theories must be embedded in contextual, macro-sociological prerequisites.

On the other hand, considering the aging process, Baltes and Carstensen (1996) added an important nuance to the paradigm, speaking of "adaptative continuity". Our data provide a good example of such a process, with a tendency to prefer physical training over sports at a certain point in the aging process. The new pattern of aging promotes physical activity, but does not preclude adaptation to the constraints of age!

Differences in the rate of increase of exercisers among the social categories, with a high rate among females, rural residents and people of low social status, a significant but moderate rate among males and urban dwellers, and no increase among persons of the upper-middle and upper strata, raise the question of the likelihood of a saturation point in participation.

Two lines of thinking have developed among scientists. In the sciences of sport, attention focuses on the barriers blocking the way in physical training and sport and on the possibilities of removing them. Aspects pinpointed are the lack or inadequacy of infrastructure and equipment, the risks and fears, and the psychological blockages (Lehr, 1995; Lehr and Jüchtern, 1997; Pache, 1997).

Sociologists of culture take a different, more anthropological approach to the question. The ethos of self-fulfillment is intimately associated with a new understanding of the body, which has become a central part of the new culture (Zoll, 1992; Featherstone, Hepworth and Turner, 1991). From the industrial society's conceptualization of the body as a tool that must "work" well, we have moved toward the idea of the body as an expression of the self (Le Breton, 1985, 1990; Lalive d'Épinay, 1991), and as such the object of a wide range of new "cults" and practices (Perrin, 1984). But self-fulfillment is currently a very ambiguous and manifold ideal. As an intimate, very subjective feeling, it is proclaimed to be

“inner-directed”, in the sense of Riesman (1953) but in practice, in our culture of images extolling youth and beauty, it is very much “outer-directed”, the image of oneself being reflected by the mirror and by the glance of others (Bellah *et al.*, 1985). Thus appearance and performance are crucial elements of the new culture, and achieving the right image may become a very difficult task (Ehrenberg, 1995, 1998). Physical training is no doubt one way of conforming to the new cultural model but there are other, concurrent and often less demanding means, such as the use of cosmetics, diets, drugs, plastic surgery, and now gene therapies (Le Breton, 1999). Exercising may keep you fit and healthy but it does not necessarily make you look beautiful and young as surgery and miracle pill proponents swear they will. Exercising combined with dieting may let you lose surplus weight but it looks so much easier with a stomach bypass and some Xenical. Exercising may preserve your sexual powers, but why not try Viagra? On the one hand, we have the goodwill and words of (some) physicians, hygienists and institutions such as the NIH (National Institutes of Health) in the USA, and on the other, the power of big companies and of the consumption market. As a matter of fact, it would be of great interest to study physical activity patterns in the framework of all the possible health behaviors and body-related activities.

The theoretical and methodological challenge of this paper lies in the attempt to articulate the macro – structural and cultural – changes that have occurred in Western societies with the micro level of individual behaviors (Marshall, 1999; Ryff, Marshall and Clarke, 1999). Our research focused on the limited field of individual involvement in physical training and sports; its findings support the hypotheses drawn from the “grand” theory on the transition toward post-industrial societies. In our review of the empirical studies available, we noted that a range of studies highlighted changes that fit the theory, but without relating the latter to the former. The quoted authors who ventured in quest of an explanation, mostly only offered a limited and mono-causal explanation. The increasing purchasing power of the population throughout the postwar decades, together with the improving level of education, as suggested by Dishman (1990) or by Bokovoy and Blair (1994), are related to the attitudinal changes regarding exercise, while the interaction (with reciprocal causality) between physical activity and health is well documented. These three trends (improvement in income, education and health) are observed when comparing our two cohorts (see Table 1). Our data also confirm the very significant change in women’s attitudes toward exercise, underlined by various observers (such as Garrigues, 1989 and Marin, 1988). However, unlike studies showing a lower participation in rural areas and among low status populations, our data suggest that the gap between spatial and status categories tends to close. The expansion of free time (Dumazedier, 1988) and the upsurge of new values and norms (O’Brien Cousins, 1995) are important incentives. But these studies, although correctly underlining one or the other element, fail to identify the overall matrix of the changes, a matrix that, to our understanding, is to be found at the macro level, in the wide-reaching transformation of Western societies during

the second half of the last century. The so-called – sometimes with disdain by empiricists – “grand” theories of this societal transformation offer here a general, systemic and multi-causal framework for the empirical analysis of the changes, at each level of reality, including that concerned with individual behavior.

The strength of the context-and-cohort-change paradigm is that it offers a hypothetic-deductive link between the macro, societal level and the micro, individual one, with empirically testable hypotheses. Its validation does not mean that the age-related-decline paradigm is intrinsically wrong; as far as we know from historical documents, it describes correctly the dominant behavioral pattern governing the aging behavior of the populations during the period of industrialized societies. However, it must be clear that this pattern is not a “natural” but that its naturalization, based on the biological knowledge of the time (Kirk, 1997), resulted from a social-ideological construction. On the other hand, the context-and-cohort-change paradigm does not claim that there is no aging process – which would be absurd – but rather that the regulation models of the aging process offered to individuals changed dramatically during the latter half of the 20th century.

A number of methodological caveats apply to our empirical results. These limitations derive, as usual, from the constraints of our research design, a design shaped by the possibilities and limits of the two surveys. The caveats are that: (a) the focus of the surveys was very broad, sports and physical training being one of many topics, and covered by only two questions; (b) by offering data on two ten-year cohorts, the surveys permitted the study of behavioral changes over the last four decades, a goodly stretch of time, but we dreamt of including a third, older cohort (for example, with people born between 1890 and 1899), which would have made it possible to test the declining pattern of sports participation in adult life before the Golden Decades, and thus to get a more complete view of the process of change; (c) information about activities was gathered for only two points in time of the life course; had information been gathered at a third point, before retirement at around the age of sixty, the degree to which the changes are related to retirement could have been studied; (d) the field research was carried out in Switzerland; although the transition toward the post-industrial period is shared by all Western societies, the pace and timing of the process varies greatly from one country to another and, combined with the cultural and historic idiosyncrasies, its consequences on the ways of life of the respective populations may present great differences. As far as participation in sports and physical training is concerned, the lack of an international comparative research program makes it difficult to obtain a clear idea of national and regional variations (Lalive d’Epinay, Manidi and Stuckelberger, 1997).

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## NOTES

1. Quoted and translated from Léziart, 1989, p. 52, 55; “struggle for life” is in English in the French text.
2. For a presentation of the Swiss social security system for old age, see Lalive d’Epinay, Bolzman and Sultan (1987).
3. The field research of both surveys was done by a team of specially trained investigators from the University of Geneva, under the leadership of the main investigator of both projects. Interviews were face-to-face, held in a place chosen by the interviewee, mostly at home, with a duration of 1.5 to 2.5 hours. Most questions were factual; in some domains such as health, beliefs and coping, tested scales and batteries were integrated into the questionnaire. For a critical presentation of the 1994 sample and fieldwork, see Bétemps, *et al.* (1997).
4. The contextual data given in this section come from the Swiss Federal Office for Statistics and from the Federal Office for Economic Development and Employment.

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Christian J. LALIVE D'ÉPINAY, Carole MAYSTRE, Jean-François BICKEL  
*Vieillesse et nouveau visage des cohortes  
 dans les sports et l'activité physique depuis les «trente glorieuses»  
 jusqu'à aujourd'hui: étude des cohortes en Suisse*

## RÉSUMÉ

Les spécialistes s'accordent à considérer les Trente Glorieuses (env. 1950-1980) comme une période de transformation structurelle et culturelle qui marque un tournant dans l'histoire des sociétés occidentales. Cherchant à relier les niveaux macro et micro de l'analyse sociologique, les auteurs élaborent le paradigme dit du « changement de contexte et de cohorte » (par distinction du paradigme du déclin avec l'âge) en fonction duquel ils analysent l'évolution de la pratique

d'activités physiques et sportives à deux points de la vie adulte (milieu et troisième âge) des membres de deux cohortes (C1, nés 1905 -1914, N = 1012; C2, nés 1920-1929, N = 662).

- 1) La comparaison des cohortes enregistre une forte augmentation des sportifs dans C2;
- 2) l'analyse longitudinale de chaque cohorte ne conclut pas au déclin, mais à la stabilité du taux de la pratique au « troisième âge », comparé au « mitan » de la vie, avec cependant un fort roulement parmi les participants, les sportifs tardifs compensant les abandons.
- 3) l'examen de la composition sociodémographique des sportifs montre le passage d'une pratique avant tout masculine, élitaire et urbaine et vers un modèle plus égalitaire et démocratique.

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Christian J. LALIVE D'EPINAY, Carole MAYSTRE, Jean-François BICKEL  
*Aging and Cohort Changes in Sports and Physical Training  
from the Golden Decades Onward: A Cohort Study in Switzerland*

#### ABSTRACT

For most analysts, the Golden Decades (roughly 1950-1980) mark a period of far-reaching change – both structural and cultural – in Western societies. In an attempt to link the macro, societal transformation with individual behavior, the authors elaborate the “context-and-cohort-change” paradigm (as opposed to the “age-related-decline” paradigm), according to which they scrutinize the participation in sports and physical training at two stages (mid-life, third age) of adult life of the members of two cohorts (C1, born 1905-1914, N = 1012; C2, born 1920-1929, N = 661).

The results show (a) a robust intercohort increase in the rate of exercisers from C1 to C2; (b) no significant longitudinal decline in participation from mid-life to third age, either in C1 or in C2, but a high rate of turnover among exercisers, with “late exercisers” filling the gaps left by the “dropouts”; (c) changes in the sociodemographic composition of exercisers, reflecting a move away from the pattern in which sports and physical exercise were mostly a male, urban, and upper-class activity, to another, much more generalized and democratic pattern.

Christian J. LALIVE D'EPINAY, Carole MAYSTRE y Jean-François BICKEL  
*Envejecimiento y la nueva cara de los cohortes en los deportes  
y la actividad física desde las “décadas de oro” hasta hoy en día\_:*  
*estudio de los cohortes en Suiza*

## RESUMEN

Los especialistas están de acuerdo en considerar las Décadas de oro (1950-1980) como un período de transformación estructural y cultural que marca un giro en la historia de las sociedades occidentales. Buscando a unir los niveles macro y micro del análisis sociológico, los autores elaboran el paradigma llamado « cambio de contexto y de cohorte » (en distinción del paradigma de la « decadencia con la edad ») en función del cual ellos analizan la evolución de la práctica de actividades físicas y deportivas de dos puntos de la vida adulta (media y tercera edad) de los miembros de dos cohortes (C1, nacidos en 1905 -1914, N = 1012 ; C2, nacidos en 1920-1929, N = 662).

- 1) La comparación de los cohortes registra una fuerte aumentación de los deportivos en C2;
- 2) el análisis de cada cohorte no concluye a la decadencia, sino a la estabilidad de la tasa de la práctica en la “tercera edad”, comparado a “la mitad de la vida”, sin embargo con un fuerte relevo entre los participantes, los deportistas tardíos compensan los abandonos;
- 3) el examen de la composición sociodemográfica de los deportistas muestra el tránsito de una práctica antes que nada masculina, de élite y urbana y hacia un modelo más igualitario y democrático.

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