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## ***Feature Article***

### **Diversity of Elderly Leisure Activities and the Transition of Life Stages: An Integrated View of the Three Major Theories of Aging**

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#### **Abstract**

Population aging is a necessary consequence of the population transition. As fertility rates continue to decline, Taiwan's population is estimated to reach its peak of 23.83 millions in 2023, and begin to show decrease afterward. Consequently, the population aging will then accelerate. The main purpose of this study is to investigate the changing styles of the elderly in post-retirement life and their health with a special focus on leisure activities. Instead of treating the three major theories of aging including activity theory, disengagement theory and continuity theory as mutually exclusive, the study will view them as "different stages of aging" evolving during the post-retirement period proposed by Tsai. By analyzing the leisure activities of a sample of 400 in a large scale nationwide survey conducted in Taiwan, this study attempt to identify the transition of life stages among the elderly and to verify Tsai's concept of aging process. Although there seem to be some minor variations of aging process, Tsai's stage transition process is supported by our data in this study.

# **Diversity of Elderly Leisure Activities and the Transition of Life Stages: An Integrated View of the Three Major Theories of Aging**

Wei Lee \*

## **Introduction**

Aging is a global trend in the 21st century. The elderly population is rapidly growing worldwide, and it is therefore fortunate that research on aging has now been chosen as a global theme issue for social and medical science (Dein & Huline-Dickens, 1997:112). The global aging phenomenon has recently caused a strong interest in the creation and development of social gerontology (Turner, 1989:589). Such a rapid growth of aged population has caught the attention from both government policy makers and academic researchers in many countries. One area of study has concentrated on the study of aging process and the life of the elderly. Geriatrics is more interested in physical health of the elderly, while social gerontological studies take the aim at the improvement of elderly life in social and psychological spheres. They investigate the leisure activities of the elderly, social relationships with friends and relatives, and patterns of elderly living (Tsai, 2008:2-3). Life can be considered to be a process (McMordie, 1981:73) and aging as a social process too (Turner, 1989:589).

Aging is a serious problem in Taiwan as well (Tsai, 2008:10; Tsai, 2009:2). The proportion of those aged 65 and older population in Taiwan reached 7 percent in 1993, qualified it as an “aging nation” defined by the United Nations and it is forecasted to be doubled to 14 percent by 2018, entering the “aged nation” status as defined by the United Nations (Tsai, 2008:3). A White Paper on Population Policy was announced by Taiwan’s government in February, 2008 as a planning guideline for future population policy development. The White Paper indicated that the total fertility rate in Taiwan in 2007 was 1.1, among the lowest in the world, while the aged population reached to a record high of 10.2% (Tsai, 2008:10).

The purpose of this paper is to examine the transition of life style of Taiwan’s aging population through the elderly involvement in leisure activities. In this report, Based on a life course perspective of aging process developed by Wen-hui Tsai (2008), I attempt to show how

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individuals adapt to changes in aging through their participation in leisure activities.

Dissatisfying with the static view of non-change assumption in current existing theories of social aging, Wen-hui Tsai proposed to view aging as a series of successive stage transitions. Drawing from the terminologies of the three main theories of aging, Tsai (Tsai 2008a, 2008b) outlined three main stages of life after retirement as continuity phase, activity phase and disengagement phase. A central theme of Tsai's 'three life stages theory' is concerned with the elderly social engagement such as leisure activities after retiring from work enhances post-retirement well-being. Social engagement refers to social bonds with other people in three main spheres-work, family and leisure social spheres (Hochschild, 1975:563). The study reported in this article aimed to examine this proposition by using quantitative data from a nationwide sample in Taiwan of 400 retired individuals beginning in 1993 and followed up periodically until 2003. The study explored the frequency of post-retirement in people's leisure repertoires, the association between socio-demographic characters and retirees' leisure activities, and factors in the differing leisure activities of retire or not.

## **Literature Review**

### *Aging, Retirement and Leisure*

Aging and age groups are demarcated not only by economic and political practices, but also by specific life-styles (Turner, 1989:590). Age is an essential ingredient of all cultures. Every known society has a named social category of people who are old and in every case these people have different rights, duties, privileges and burdens. The traditional Chinese culture views the elderly as but one step from the gods. The older adult is considered a storehouse of wisdom, knowledge and experience and is treated with reverences (Winch, 1953; cf McMordie, 1981:71). The traditional Chinese attitude toward the elderly and the recompense definition of old age seem to have little applicability in Western culture (McMordie, 1981:71). Public acknowledgement of discontinuities, which punctuate the life cycle, occurs through rites of passage such as celebrations surrounding retirement from work (Van Gennep, 1960; Webster, 1908; cf Dein & Huline-Dickens, 1997:113). Parsons (1949) considered the loss of employment as the central feature of aging, which led to loss of purpose in life (cf Dein & Huline-Dickens, 1997:115). In the West, on retirement the elderly may face the loss of power, respect and social rewards (Hazan, 1994). Although anthropologists have noted structural and demographic aspects in many groups, the experience of aging is a largely neglected topic (Dein & Huline-Dickens, 1997:113). An

examination of those cultural factors related to aging may help us understanding transition processes in old age (Blazer et al., 1991; cf Dein & Huline-Dickens, 1997:113).

In eastern societies, the transition into retirement is to a phase of leisure in one's life. The leisure activities of older people have been well researched since the early 1960s (Nimrod, 2003). After life-long involvement in work, a newly-retired person needs to create a lifestyle that will be at least as satisfying as their previous lifestyle thus the transition may not be easy (Nimrod & Adoni, 2006: 607). Leisure plays a major role in the more general concept of "life-style," which has been used since the early 20th century in sociology, psychology, cultural studies, social geography and, most enthusiastically, in marketing(Nimrod & Adoni, 2006: 609).

Lynch(2005) suggested that baby boomers desire the ability to "cycle" between periods of work and leisure during retirement. The main characteristics of leisure in later years can be summarized as (1) declining participation with greater age and declining health; (2) a transition from physical activities to activities that demand less physical effort; and the complement, (3) a transition from outdoor activities to indoor activities; (4) there is evidence of continuity, for the tendency is for the same activities to be pursued in retirement as before.; and (5) retirees tend not to participate in more activities, but rather to increase their participation in accustomed activities. (Nimrod, 2006:608; Nimrod, 2008:832). Havighurst and de Vries (1969, as cited in Nimrod & Adoni, 2006: 609) collected data from eight countries and defined seven different retiree leisure-styles: confronting new challenges; instrumental activities (for the family or public good); expressive enjoyment (hedonistic); filling time with undemanding pastimes (e.g. playing cards and walking); expanding domestic routines to fill the time; and apathetic inactivity; and lack of free time.

The occurrence and intensity of leisure activities are affected by various mediating socio-demographic and health characteristics such as age, gender, marital status, education, employment status, mental health, self-rated health and functional ability (Nimrod, 2008:833). After discussion about aging, retirement and leisure, the author will compare the three major theories of aging and then introduce Tsai's three stages theory of aging.

### ***Social Theories of Aging***

The focus of social theories of aging is on the adaptations of the elderly in managing social relations and in participation of social activities essential to successful aging (Bergstrom & Holmes, 2000:377).

### ***Disengagement theory***

Although there were a number of explanations that attempt to focus on social life of the elderly, disengagement theory was the first to offer a systematic and comprehensive portrait of social life of the elderly (Chang & Dodder, 2001:127). Disengagement theory was based on the findings from a longitudinal study of older adults in Kansas City in the 1950s conducted by the University of Chicago's Committee on Human Development (Cumming & Henry, 1961; cf Adams, 2004:88-89; McMordie, 1981:72). Disengagement theory claims that the older a person becomes, the more he or she will withdraw from society, and that this process is universal, inevitable and mutually accommodating for the individual and society (Nimrod & Adoni, 2006: 610-611; Bergstrom & Holmes, 2000:380; Dein & Huline-Dickens, 1997:114). The individual's withdrawal may be accompanied from the outset by an increased preoccupation with himself; certain institutions in society may make this withdrawal easy for him (Cumming, & Henry, 1961:14; cf Adams, 2004:89; Hooyman & Kiyak, 2008:310; McMordie, 1981:72). In turn, society disengages from the aging individual, and transfers those responsibilities to younger people. The net effects of this inevitable disengagement were assumed to be beneficial for the older person and for the society (Hinterlong & Williamson, 2006:10-11; Turner, 2000:597).

A few later studies have found support for one or more aspects of the theory (Shanas, 1970:183). For example, Larson concluded that older persons apparently have less need than younger adults to seek out the companionship of others (Larson et al., 1985;cf Adams, 2004: 90). Another study examining 400 elders' breadth of leisure activity, found that participants over the age of 65 were significantly less active than those under the age of 65, and that the older group appeared to have voluntarily withdrawn from activities related to developing competence and to health (Steinkamp & Kelly, 1987). Johnson and Barer (1992) found that over 50% of this oldest of the old sample was considered to be disengaged (Adams, 2004: 91). However, these authors also found that "lower levels of social integration are seldom beneficial in terms of life satisfaction, and in some cases are associated with significantly less satisfaction" (Adams, 2004: 90).

By the 1970s, several authors were critical of disengagement theory on both political and theoretical grounds (Marshall, 1994; Victor, 1994;cf Adams, 2004:89; Turner, 2000:597; McMordie, 1981:71). Hochschild(1975:567) conclude that the disengagement theory suffers from three problems. First, the theory is unfalsifiable. Second, Cumming and Henry's variables are composed of sub-parts which do not vary in a unitary way. Third, they ignored the meanings people attach to what they do. Others argued that marginalization was detrimental to both the individual and the broader culture and predicted that older adults would seek to remain "vitaly involved"(Erikson et al., 1986; cf Hinterlong & Williamson, 2006:11). Evidence to support these

contentions is mounting rapidly. Such findings posit that engagement is beneficial to the individual and that the loss of valued roles and responsibilities can result in declines in well-being for older adults(Hinterlong & Williamson, 2006:11).

### ***Activity theory***

In recent years, disengagement has been criticized as being too negative and passive about elderly life in retirement. One of disengagement theory's chief critics Havighurst, (1963, 1968), developed a competing theory out of the same data from the Kansas City Studies of Adult Life (Cumming & Henry, 1961). Activity theory (Havighurst, 1963, 1968; Maddox, 1963) posits that activities that were enjoyed in middle age should be continued in later adulthood. Thus, older adults should remain socially active in their later years(Bergstrom & Holmes, 2000:381), and those who are able to remain socially active will be more likely to achieve a positive self image, social integration and satisfaction with life'(Barrow, 1992:70; McKee et al., 1999:144; Hinterlong & Williamson, 2006:11; Avlund et al., 2004; Turner, 1989:598). It is a symbolic interactions theory that argues the more active older adults are, the greater their chances to successfully age (Passuth&Bengtson, 1988). Havighurst (1963, cf Nimrod & Adoni, 2006: 610) argued that to preserve psychological well-being in old age, it is important to maintain a high level of involvement in activities. By doing so, they contradicted Cumming and Henry's(1961) disengagement theory. Activity theory, is still used in investigations of older adults' leisure(Fernandez, Zamarron, & Ruiz, 2001; John, 1996; Reitzes, Mutran, & Verrill, 1995; Zaraneck & Chapleski, 2005; Burnett-Wolle & Godbey, 2007:500).

In later life, many of these roles, such as worker or spouse, are eliminated or altered and these changes minimize social contact. Older adults who replace relationships through leisure, thereby simulating social interaction patterns of early adulthood, tend to be healthier than those who do not (Burnett-Wolle & Godbey, 2007:500; Hooyman & Kiyak, 2008:309). Adapting to aging is a life-long process of gradual selection, not a quick response to retirement from work or a 65th birthday. Selection is required over time in adjusting to changing environmental and physical constraints and in optimizing self-selected activities (Miller et al., 1998:346-347). Review of activity theory literature suggests that adjusting to the changes brought about by aging requires continuous life-long effort.

Participation in activities has been found to be a strong predictor in explaining why some people are better adjusted or experience higher morale and psychological well-being than others (Adams 1993). Aging may influence the type of activities participated in, but age does not necessarily have a relationship with activity level(Miller et al., 1998:351). Leisure researchers who

use activity theory measure rates of social interaction and predict a positive relationship between it and affective well-being. A growing body of literature, however, questions the merit of activity theory (Lemon et al., 1972; Lennartsson & Silverstein, 2001; Menec, 2003). In particular, physical health, rather than rates of social interaction, appears to account for variations in affective well-being (Lee & Markides, 1990; cf Burnett-Wolle & Godbey, 2007:500).

### ***Continuity theory***

Atchley writes that a large proportion of older adults show considerable consistency over time in their patterns of thinking, activity, living arrangements and social relationships, despite significant changes in health, physical independence and social circumstances (Lysack & Seipke, 2003:130). An individual's ability to age successfully is dependent on the ability to continue social-psychological characteristics present in youth and middle age to later life (Bergstrom & Holmes, 2000:382). Individuals tend to maintain the psychological and social patterns adopted earlier in life (e.g. attitudes, opinions, personality, preferences and behavior) by developing stable activity patterns that help them preserve continuity (Nimrod, 2008:832). If roles are lost through changes in old age, similar roles must be substituted (Hooyman & Kiyak, 2008:312). It stipulates that age related changes threaten inner psychological well-being. Continuity is thought to exist in three realms: (1) the maintenance of inner psychological states, (2) the maintenance of outward social behavior, and (3) the methods people use to negotiate change (Burnett-Wolle & Godbey, 2007:499).

Continuity theory is commonly used in the study of older adults' leisure behavior (Godbey, 1999; Mannell & Kleiber, 1997). Leisure researchers who use continuity theory measure variables pertaining to inner psychological states, outward behavior, and adaptation strategies and predict a positive relationship between continuity in these variables and well-being. Of these, predicting outward leisure behavior, such as rates of activity participation or social interaction, is of particular interest (Burnett-Wolle & Godbey, 2007:499; Bergstrom & Holmes, 2000:382-383). Continuity theory's conceptualization of retirement action and plans as guided by the desire to retain a positive self-image is also supported by the current study (Brougham & Walsh, 2007:225).

While continuity theory is often applied in studying older adults' leisure, its usefulness in explaining and predicting older adults' behavior is nevertheless limited (Matras, 1990). The theory only applies to people who experience "normal aging", not "pathological aging" (Atchley, 1989:183). Atchley acknowledged that "external continuity is a less practical adaptive strategy" for people who experience pathological aging and suggests that "continuity theory is not very helpful in understanding the external reality" of this group (Atchley, 1989:184), a primary concern of

leisure researchers (Burnett-Wolle & Godbey, 2007:499-500).

***Three life stages among the elderly: a transitional perspective***

Until now, the above three theoretical perspectives are treated as mutually exclusive. These theories tend to assume that all elderly live in only one type of life in their entire elderly life. Unfortunately, life is not this simple. On the one hand, there are many different styles of life; some are disengaged, others are active, and while still others show a continuity style of living; elderly are not homogeneous. On the other hand, life after retirement is not stationary. With the extended life expectancy after age 65, people can be expected to live another 20 some more years. They may be disengaged at one time, or active at another time. Just like people in other age groups, the elderly change and grow as they live from year to year (Tsai, 2009:12).

Tsai (2008) treats the three exiting perspectives as three transitional stages that the elderly go through when they pass through ages. Tsai calls this the transitional theory of aging that emphasizes the dynamic change of life among the elderly. The majority is most likely to continue their life style during the first few years after they retire from work, then they would modify their work habits to become less involved in work that requires long hours and physical labor so long as their health permit. Finally, the elderly will likely reduce their involvement to become disengaged from work and other stressful demands and become isolated and detached from the outside world as a result of declining physical health and reducing social resources. The transition from one stage to another stage can be seen in the following (Tsai, 2009:12).

- Main Pattern: Continuity→Activity→Disengagement
- Other Variations:Continuity→Disengagement→Activity  
Activity→Disengagement→Continuity  
Activity→Continuity→Disengagement  
Disengagement→Activity→Continuity  
Disengagement→Continuity→Activity

Tsai's assumption is that the majority of people are most likely to continue their life style during the first few years of their retirement life, then move on to active life with less demand, and finally settle in a disengagement phrase. The transition is determined by the elderly's physical and financial conditions. The goal of searching for a successful aging is higher in the first two stages of continuity and activity if the elderly maintain a balance in physical, psychological, and social life.



## **Research questions and hypotheses**

The research reported here is designed to answer three questions: (1) what types of life-styles and health status exist among retired individuals? (2) Are there background differences between the life-styles related to health status, socio-demographic characteristics and personal work history? (3) Do majority of the elderly go through the main pattern of transition the main pattern of the three stages theory as stipulated by Tsai, i.e., moving from continuity to activity to disengagement?

Three working hypotheses are formulated for the test of Tsai's theoretical perspective discussed in the above.

- (1) Early retirees (roughly 5 years after retirement): would likely be active and/or continue their pre-retirement lives (continuity pattern and/or activity pattern of life)
- (2) Middle retirees(6-10 years after retirement): retirees will turn to either activity or disengagement (activity that is slightly different from their pre-retirement, or disengaged from the world)
- (3) Late retirees (11 years after retirement): majority of the retirees are likely to be disengaged due to their physical and mental limitations.

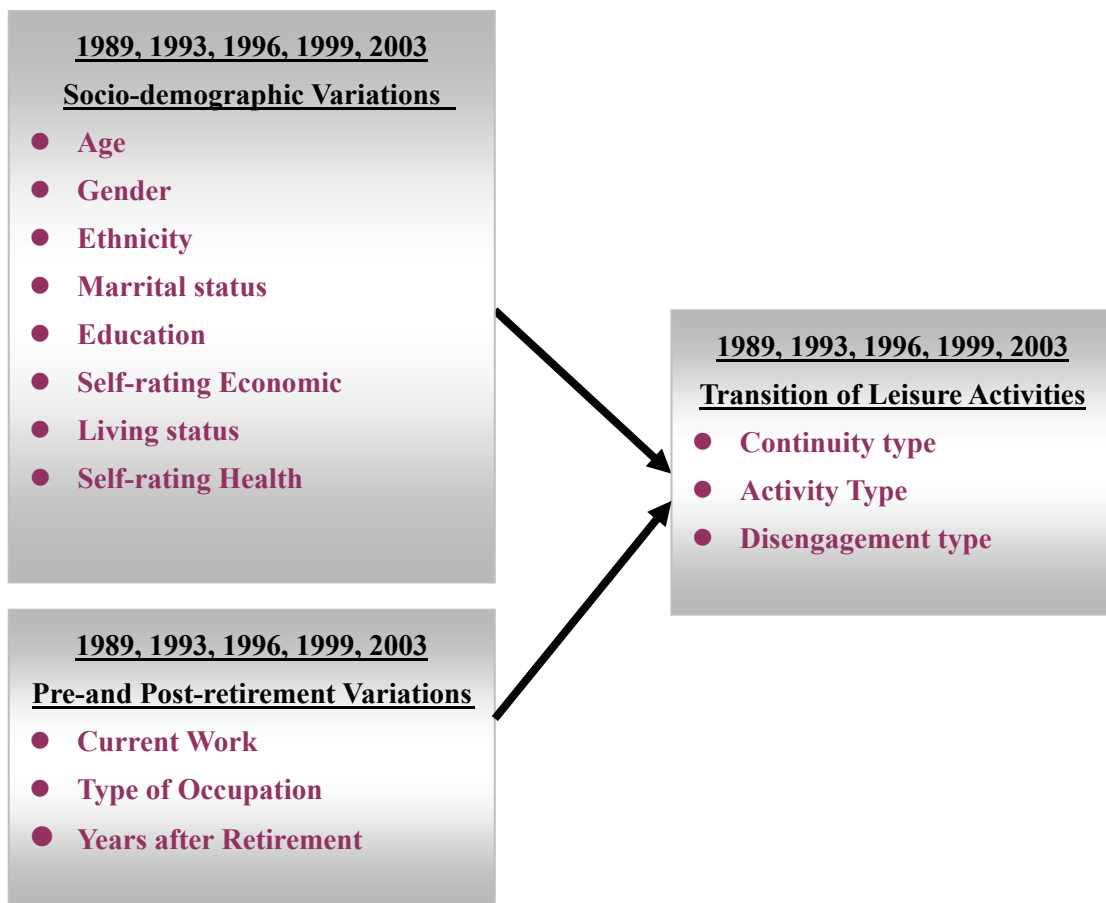
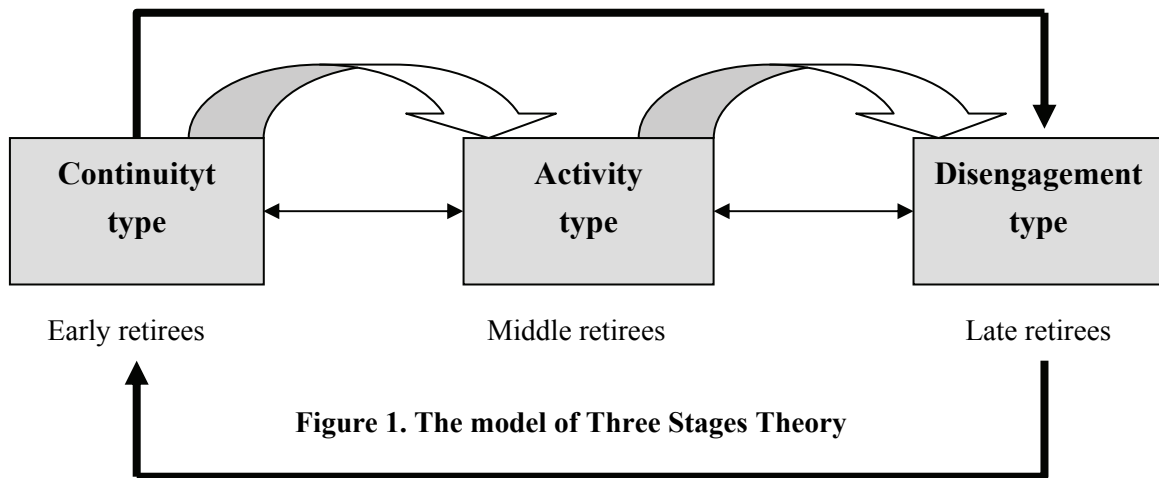
## **Methodology**

In this part, the author present Tsai's three stages theory by figure 1 and the conceptual framework in this study (Fig 2).

### ***Study design***

#### ***Data***

Data for this study are drawn from five waves of the "Survey of Health and Living Status of the Elderly in Taiwan", a project jointly conducted by the Taiwan Provincial Institute of Family Planning in Taichung, Taiwan (now the Bureau of Health Promotion), and the Population Studies Center at the University of Michigan, and funded by the U. S. National Institute on Aging. The first wave of data collection began in 1989 with a nationally representative sample of 4049 persons aged 60. Respondents have been re-interviewed at approximate 3-year intervals since the initial interview date, including data collection in 1993, 1996, 1999 and 2003. In addition to detailed demographic and socioeconomic information, the survey included information on health and living conditions, work history in the pre-retirement period, and social participation.



**Figure 2. Conceptual framework in this study**

Taiwan maintains a Household Register of each resident, and this register was used to select a random sample. Three stratified sampling stages were employed. First, ‘townships’ or administrative units were first selected from 361 administrative units in Taiwan. Second, ‘blocks’ or lins were made within the chosen townships. Third, two eligible individuals within each block were randomly selected to be interviewed. The final sampling ratio was 1/370 and response rates for these surveys are high (89 per cent or better). Of those interviewed in 1989, 579 did not survive the period and 284 did not respond to the follow-up questionnaire. In the event, 2,989 individuals were interviewed in 1993, providing a response rate of 91 per cent. Response rates were 89 per cent for the 1996 follow-up and 90 per cent for the 1999 and 91 per cent for the 2003 follow-up (see Table 1). Proxies were used in cases in which the respondent was unable to answer questions, mostly due to health reasons, although proxy responses were restricted to provision of current factual information. Further information on the sampling procedure and the other methods used in the data collection can be found in Taiwan Provincial Institute of Family Planning 1989.

Table 1. Background information on the original sample for Surveys of Health and Living Status of the Elderly in Taiwan.

Year	Number of cases interviewed (age)	Accumulated number of cases deceased	Did not respond	Response rate (%)	Wave of survey
1989	4049 (60+)	-	363	91.8%	I
1993	3155 (64+)	582	312	91.0%	II
1996	2669 (67+)	1047	333	88.9%	III
1999	2310 (70+)	1486	253	90.1%	IV
2003	1743 (74+)	2133	173	91.0%	V

Source. <http://www.bhp.doh.gov.tw/BHPnet/Portal/Them.aspx?No=200712270002>

## **Measures**

### *Sample selection strategy.*

Our analysis uses data from all five waves of the survey (1989, 1993, 1996, 1999 and 2003). The analysis tracks the survival of the 4,049 respondents over the fourteen-year period. By the end of the 14-year period 1060 original respondents were deceased. For this study the author focus on the population who still work in 1989 and retired begin at 1993. In the 1993 survey, this group represents survivors from the first wave of data collection, these individuals were aged 64 and older. In 1996 these individuals were aged 67 and older, in 1999 they were 70 and older and in 2003 they were 74 and older. About the missing data, the author follows an imputation procedure

used by Crimmins, Saito, and Reynolds (1997), and replace missing values due to attrition with probabilistic values derived from available observations (Zimmer et al., 2002:266-268; Goldman et al., 2005:97). In final analysis, the total sample is 400 elderly (Fig. 3).

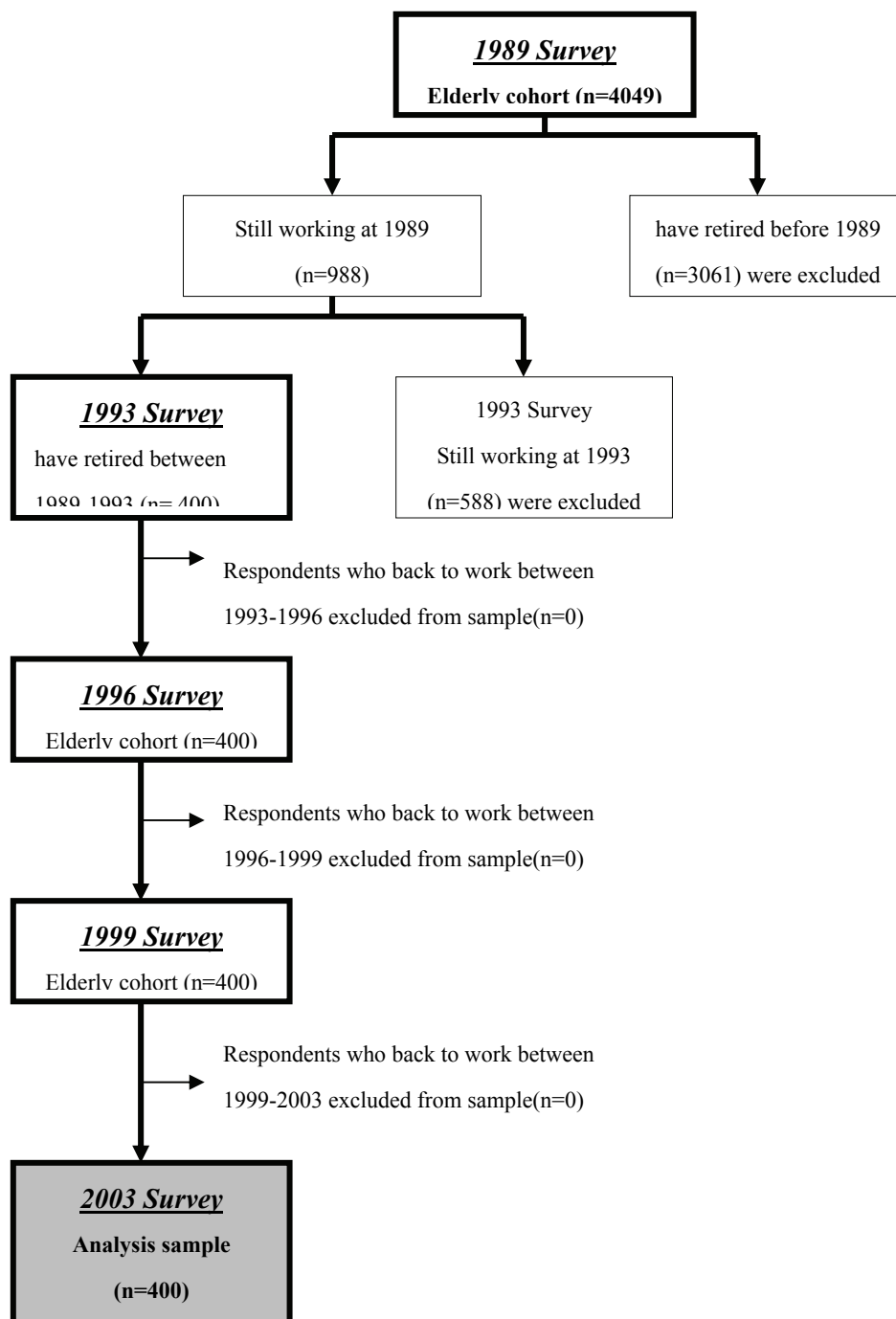


Figure 3. Sample selection strategy

## *Variables*

Since 1989, questionnaires have included and updated a broad spectrum of information including demographic characteristics, marital history, social networks and activities, and socioeconomic status. Although the specific wording of some questions changed over time, this analysis used indicators that were consistently worded or changed only modestly across waves. The variables used in the models are described below.

### *Socio-demographic variables*

There are eight socio-demographic variables in this study:

- (1) Age: Age was measured in terms of the actual years of age at the time of survey. Measured in five-year groups such as 60-64 years, 65-69 years, 70-74 years, 75-79 years, 80 and over.
- (2) Gender: 0 for female, 1 for male.
- (3) Ethnicity: Ethnicity was classified into Fukienese, Hakka, and Mainlanders. The vast majority of early settlers on Taiwan were Fukienese and Hakka. After the Communist victory on the mainland in 1949, approximately one million Nationalist military and civilian supporters migrated and took control of the island. This group of migrants (and their offspring) became known as Mainlanders and now constitutes the third major ethnic group in Taiwan. Because this group is self-selected and its health-related behaviors and functional status tend to differ from that of the rest of the elderly population, it is worth treating them as though they were a separate ethnic group. Many of them had been soldiers, and they tended to take up jobs that provided them with health insurance coverage throughout their lives. For these reasons, they may be more physically fit than others and generally healthier in older age (Seplaki et al., 2006:3125-3126).
- (4) Marital status: For formerly married women (most of whom are married and some are widowed, divorce is rare in Taiwan). 1 for married, 2 for widower, 3 for divorce or live apart and 4 for never marriage. Both of Ethnicity and marital status factors are considered as potentially important predictors of physical health among older Taiwanese Seplaki et al., 2006:3125-3126).
- (5) Education: Education was measured by the number of years of schooling the respondents had. We designate indicators for “7 or more years of education for(junior high school and above)”and “1-6 years of education or literate,( literate or elementary school),” with “illiterate” as the reference group.
- (6) Self-rating economic status: Respondents’ dissatisfaction with their current economic situation was measured on a scale from one (very unsatisfied and unsatisfied) to average and to three (very satisfied and satisfied).

- (7) Living status: Including living alone, living with spouse only, living with others.
- (8) Size of household: Size of household was defined as the number of persons living in the household, including the respondent.
- (9) Self-rating Health: Self-assessed health status is based on the following question: "Regarding your current state of health, do you feel it is excellent, good, average, not so good, or poor?" This five-point ordinal measure is scored so that five indicates 'excellent' health. It was measured on a scale by one (poor and not so good) and two (average) and three (excellent, good). A wide literature has consistently shown this measure to be a strong predictor of subsequent mortality and morbidity. Therefore, this simple measure appears to be a valuable indicator of overall well-being (Glei et al., 2004:323-324). A not insubstantial proportion (3.5%) did not answer this question, and we added a category to capture these non-respondents. Many of these nonrespondents map to proxy responses, and we thus presume that the non-respondent category is made up of many who are in fairly poor health or have cognition problems and therefore could not participate directly in the survey. Almost 40% of respondents describe their health as excellent or very good in 1989.

*Pre-and Post-retirement Variations: primary lifetime occupation*

A measure of occupation was calculated based on the primary lifetime occupation of male respondents and of the youngest children who have worked of the female respondents. The occupational status index reflects the prestige of the primary lifetime occupation of male or female. Respondents who had officially retired but who were working in a full-time job were excluded, whether in the same job as before retirement or a new job. The screening rationale was based on the assumption that as long as individuals worked full time, their leisure behavior would not significantly change. Retirees who were still working occasionally or part time were included in the sample, and their work status noted as a background characteristic.

- (1) Working status was dichotomized into currently working or currently not working.
- (2) Type of Occupation: Respondent's last occupation classification, including managers, professions or office employee, workers, house keepers.
- (3) Owner of Occupation: Respondent's last job ownership status. Including owner by self, spouse, or family is for 1. owner by others is for 2. housekeeper is for 3.
- (4) Years after Retirement: Respondent who have retired between 1989 and 1993, and follow up 14-year. Including below 5 years, 6-10 years, 11 and over years.

*Leisure Activities among elderly:*

Participation in social activities was included as a categorical variable: no activities, one or

two activities, or three or more. Information was based on respondents' participation in the following eight activities: (1) watching TV; (2) listening to radio; (3) reading newspaper, magazine, book or novel; (4) playing games; (5) socializing and visiting others; (6) Gardening for pleasure; (7) take a walk; (8) independent outdoor exercise, such as running and mountain-climbing; (9) collective exercise, such as dancing, singing party and Chinese shadow boxing.

### ***Missing data***

To minimize the loss of cases as a result of missing values, imputation was made whenever possible. A two-part strategy was utilized. First, the data were examined to see if a given missing value could be imputed deductively. If this strategy was not successful or feasible, a second strategy was employed that involved use of a regression-based imputation method when multiple parallel indicators of a variable were available. In particular, a prediction model of each indicator was generated by using the other parallel items. This prediction model was then employed to impute the missing value. For example, three indicators were used for the composite of self-rated health status, imputation was made when only one item was missing. Of the 3822 direct interviews, 3815 respondents had no missing data on the three items, six had missing data for one item of the three, and one person had more than one item with missing data. Values were estimated for the seven respondents with only one item with missing data and these cases were successfully recovered.

### ***Analytical strategy***

The author use SPSS for Windows 17.0 to analysis the data. The data analysis had five steps, the first being a redefine leisure activities. The details of four steps are as follows:

Step 1: Reclassify the Leisure Activities:

In this study, in order to test Tsai's three stages theory, the author focuses on transition of leisure participation of elderly. The detail about how to measure the transition is as follows:

Step 2: Define the Transition of Leisure Participation and infer to transition of aging stages and three stages theory

After reclassify leisure activities of elderly, the author redefines four leisure styles of elderly into only one type that can present samples. For example, if one sample participants all the four types of leisure, the author define the sample's leisure activities is type IV. If one sample participants type I and type III leisure, the author define the sample's leisure activities is type III. To conclude, Type IV(for 4)> Type III(for 3)> Type II(for 2)> Type I(for 1) leisure, the author choice all samples' highest leisure style to represent their leisure activities.

Table 2. Measurement of leisure activities

Original classification	Index of classification			
	Leisure activities	Strength level by using body	Needing to participant with others	Totalize
Watching TV	1	1	2	Type I (for 1)
Listening to radio	1	1	2	
Reading	1	1	2	
Playing games	2	2	4	Type III (for 3)
Socializing and visiting	2	2	4	
Gardening	2	1	3	Type II (for 2)
Walk	2	1	3	
Outdoor exercise	3	2	5	Type IV (for 4)
Collective exercise	3	2	5	

Note:

- (1) Strength level by using body: elderly have to use high level strength of body is for 3, it also means the type of muscle training; elderly have to use moderate level strength of body is for 2, it also means the type of heart and lung training; elderly have to use low level strength of body is for 1, it also means the type of relaxing (J i a n g & Z h o u, 2006:134-135).
- (2) Needing to participant with others (yes or no) : Yes is for 2, it means elderly must participant with others. No is for 1, it means elderly can do it independently or together with others.(Huang, 2001) °

Insofar as the samples' transition of leisure participation to transition of aging stages, we use leisure style at later year subtract leisure style at previous year. If the outcome is equal to zero, it is defined continuity type. If the outcome is greater than zero, it is defined activity type. If the outcome is smaller than zero, it is defined disengagement type. For example, if one sample's leisure style is Type II(for 2) at 1989 and Type IV(for4) at 1993, then Type IV(for4) subtract Type II(for 2) will get the outcome is 2, and 2 is greater than zero, so we can conclude one sample's transition of leisure participation between 1989 and 1993 is activity type. Therefore, each sample will be presented by four transition of aging stages between 1989-1993, 1993-1996, 1996-1999, 1999-2003.

Step 3. Examined each leisure-style group:

The third step examined each leisure-style group and by their background characteristics,



attitudes towards work, and leisure. To identify significant associations between leisure-styles and background characteristics, cross-tabulations and chi-squared tests were employed. The same tools were used to examine the connections between leisure-styles and attitudes concerning work and leisure.

Step 4. Examined each transition of aging stages:

The last step of the data analysis was to explain differences in aging stages between the groups, which was done by examining the association between aging stages and all the independent variables. First, differences in aging stages between each of the variables' categories were examined with ANOVA, and then the variables that showed significant differences in aging stages were entered into a Chi-square test of aging stages with all the independent variables. A confidence interval of 95 per cent was used in all tests, and only statistically significant findings are presented in this article.

## ***Result***

### ***Sample characteristics***

Table 3 shows basic demographic and socioeconomic characteristics in 1989, 1993, 1996, 1999, 2003 for all 400 elderly persons in our final analytical sample, and separately by the five waves. About 51.5%(N=206) of the respondents were females and 48.5%(N=194) were males. About 38.3% of the respondents' education were illiterate, 36.8% were literate or elementary school, 25.0% were junior high school and over. About 58.8% of the respondents' ethnicity was Fukienese, 28.5% were mainlanders, 11.5% were Hakka.

Table 3 also shows how the composition of the Taiwanese elderly population changed over the years 1989, 1993, 1996, 1999 and 2003. The changes in age, marital status, living status, satisfaction with living status, self-rating health status, self-rating economic status, type of occupation, owner of occupation, year after retirement are summary in the table 3. The average age of those 60 and older increased by 3 or 4 years between 1989 and 2003, while the proportion in older age categories increased. For instance, the percentage 80 and older increased from 0.5 per cent to 39.3 per cent over the survey years. The married marital status of participants were decreased from 72.3% to 48.8% and widower were increased from 22.8% to 46.5% over the 14-year. The living status of Taiwanese elderly were living alone or living with spouse more and more. The proportions of living alone were from 7.5% to 13.75% over the year and livings with spouse were from 13.25% to 17.0% over the five waves. Therefore, elderly who lived with

children or others were decreased from 79.25% to 69.25%. The elderly who felt satisfaction with living status and dissatisfaction were decreased, and were increased by answering average over the time. The self-rating health status of participants who felt not good were increased from 15.3% to 45.0%, and who felt good were decreased from 45.0 to 25.8 over the 14-year. The self-rating economic status of participants who felt satisfaction were high after retirement is about 53.0 per cent in 1993, and were not changed significantly in 1989, 1996, 1999 and 2003(Table 3.).

The proportion of type of occupation among elderly who were house keepers were 49.0% and 32.8% were workers, 9.8%were professions or office employee, and 8.5% were managers. About the owner of occupation among elderly who work for others were 28.5%, the owner were by elderly's, their spouse or their family's were 22.5%, and the others were house keepers. Elderly who all retired between 1989 and 1993, who still worked at 1989, the average number of years after retirement were  $2.46 \pm 1.25$  years at 1993, and increased 3 or 4 years from 1993 to 2003(Table 3.).

About the leisure participation of Taiwanese elderly were changed over the 14-year. Most of elderly watch TV. The proportion of watching TV elderly were decreased from 96.3% to 88.0. In 1989 and 1993, the watching TV and listening to radio were combined in the data base. The proportion of elderly listening to radio did not change significantly between 1996 and 2003. The proportion of those playing games decreased from 13.5% to 8.3% from 1989 to 2003. The proportion of socializing and visiting were also decreased from 63.3% to 53.5%. Elderly who participated in gardening decreased from 37.5% to 24.5%. 49.0%. Elderly who took a walk be recorded begin at 1996, so that we have no data in 1989 and 1993. The proportion of elderly who took a walk decreased from 71.5% to 63.0%. For those elderly who participate in independent outdoor exercise were high at 1993, 58.5 percent of them do independent outdoor exercise, and until 2003, the proportion decreased to 8.3%. Elderly who participated in collective exercise decreased from 14.5% to 9.0% (Table 3).

Table 3. Basic sample characteristics-as of 1989, 1993, 1996, 1999 and 2003 year

	1989	1993	1996	1999	2003	P-value
	%	%	%	%	%	
<b><u>Gender</u></b>						***
Male	48.5	48.5	48.5	48.5	48.5	
Female	51.5	51.5	51.5	51.5	51.5	
<b><u>Age</u></b>						***
60-64	50.8	7.8	0	0	0	
65-69	36.3	53.0	32.0	0	0	
70-74	9.8	29.3	43.8	50.8	7.8	
75-79	2.8	7.3	17.8	36.3	53.0	
80 and over	0.5	2.8	6.5	13.0	39.3	
Mean±SD	65.15±4.18	69.15±4.18	72.15±4.18	75.15±4.18	79.15±4.18	
<b><u>Education</u></b>						***
Illiterate	38.3	38.3	38.3	38.3	38.3	
Literate or elementary school	36.8	36.8	36.8	36.8	36.8	
Junior high school and above	25.0	25.0	25.0	25.0	25.0	
<b><u>Ethnicity</u></b>						***
Fukienese	58.8	58.8	58.8	58.8	58.8	
Hakka	11.5	11.5	11.5	11.5	11.5	
Mainlanders	28.5	28.5	28.5	28.5	28.5	
<b><u>Marital status</u></b>						***
Married	72.3	67.0	61.5	56.3	48.8	
Widower	22.8	27.3	33.3	38.3	46.5	
Divorce or live apart	2.3	3.0	2.3	2.3	2.0	
Never marriage	2.8	2.8	3.0	3.3	2.8	
<b><u>Living status</u></b>						***
Living along	7.5	9.25	10.25	12.75	13.75	
With spouse	13.25	16.75	15.25	16.5	17.0	
With others	79.25	74.0	74.5	70.75	69.25	
Mean±SD	5.0±3.3	4.65±2.73	4.59±2.75	6.34±14.3	3.95±2.38	***

\*P&lt;0.05, \*\*P&lt;0.01, \*\*\*P&lt;0.001(two-tailed)

Note: No data is shown by “—” .

Table 3. Basic sample characteristics-as of 1989, 1993, 1996, 1999 and 2003 year (Cont. 1)

	1989	1993	1996	1999	2003	P-value
	%	%	%	%	%	
<b><u>Satisfaction with living status</u></b>						***
Unsatisfaction	3.3	—	4.0	2.5	2.8	
Average	18.0	—	22.8	41.0	28.3	
Satisfaction	75.3	—	73.3	56.5	69.0	
<b><u>Self-rating health status</u></b>						***
Poor	15.3	20.8	30.0	36.0	44.3	
Average	39.0	34.8	37.0	34.3	30.0	
Good	45.0	44.5	33.0	29.8	25.8	
<b><u>Self-rating economic status</u></b>						***
Unsatisfaction	13.5	8.3	11.8	15.8	15.3	
Average	39.8	38.8	45.3	37.5	44.8	
Satisfaction	46.0	53.0	43.0	41.5	40.0	
<b><u>Type of Occupation</u></b>						***
Managers	8.5	8.5	8.5	8.5	8.5	
Professions or office employee	9.8	9.8	9.8	9.8	9.8	
Workers	32.8	32.8	32.8	32.8	32.8	
House keepers	49.0	49.0	49.0	49.0	49.0	
<b><u>Owner of Occupation</u></b>						***
Self, spouse, or family's	22.5	22.5	22.5	22.5	22.5	
Others'	28.5	28.5	28.5	28.5	28.5	
House keepers	49.0	49.0	49.0	49.0	49.0	
<b><u>Year after retirement</u></b>						***
Below 5 years	—	100.0	58.3	0	0	
6-10 years	—	0	41.8	100.0	7.3	
11 and above	—	0	0	0	92.8	
Mean±SD	—	2.46±1.25	5.46±1.25	8.46±1.25	12.46±1.25	

\*P&lt;0.05, \*\*P&lt;0.01, \*\*\*P&lt;0.001(two-tailed)

Note: No data is shown by “—” .

Table 3. Basic sample characteristics-as of 1989, 1993, 1996, 1999 and 2003 year (Cont. 2)

	1989	1993	1996	1999	2003	P-value
	%	%	%	%	%	
<b><u>Leisure participation</u></b>						
<b>Watching TV</b>						**
Participant	96.3	96.0	96.0	94.0	88.0	
Unparticipant	3.5	4.0	4.0	6.0	12.0	
<b>Listening to radio</b>						**
Participant	—	—	35.8	41.3	30.3	
Unparticipant	—	—	63.8	58.8	69.8	
<b>Reading newspaper</b>						***
Participant	45.8	45.0	40.0	40.3	30.0	
Unparticipant	54.3	55.0	59.5	59.5	70.0	
<b>Playing games</b>						**
Participant	13.5	13.3	11.5	11.8	8.3	
Unparticipant	85.8	86.8	88.3	87.3	91.8	
<b>Socializing and visiting</b>						**
Participant	63.3	63.8	64.3	63.8	53.5	
Unparticipant	36.8	36.3	34.5	36.3	46.5	
<b>Gardening</b>						***
Participant	37.5	36.3	41.0	33.0	24.5	
Unparticipant	62.3	63.8	58.8	67.0	75.5	
<b>Walk</b>						***
Participant	—	—	71.5	71.8	63.0	
Unparticipant	—	—	27.5	27.8	36.8	
<b>Independent outdoor exercise</b>						***
Participant	—	58.5	18.8	15.8	8.3	
Unparticipant	—	41.5	81.3	84.3	91.8	
<b>Collective exercise</b>						***
Participant	14.5	11.8	11.5	11.3	9.0	
Unparticipant	85.3	88.3	88.5	88.8	91.0	

\*P&lt;0.05, \*\*P&lt;0.01, \*\*\*P&lt;0.001(two-tailed)

Note: No data is shown by “—” .

After redefining leisure participation, each participant engaged in only one type of leisure styles. The same as the author have explained that Type IV(for 4)> Type III(for 3)> Type II(for 2)> Type I(for 1) leisure, the author selected all samples' highest leisure style to represent their leisure activities. As a result, elderly who do not participate any kinds of leisure increased from 1.3% to 6.0% over 1989 to 2003. Elderly who engaged to Type I leisure style decreased from 1989 to 1996 and increased from 1996 to 2003. Elderly of Type II leisure style increased from 9.5% to 18.8%. But the lowest proportion is 2.5% at 1993. Elderly of Type III leisure style decreased from 57.0% to 47.3%, with the lowest proportion is 21.5% at 1993. Elderly of Type IV leisure style is increased from 14.5% to 61.5% over 1989 to 1993, and decreased from 61.5 to 14.8 over 1993 to 2003(Table 4.).

### ***The transition of different aging stages***

After redefine leisure participation of elderly, the author use leisure style at later year subtract leisure style at ahead year. Table 5 shows the result after calculation. If the outcome is equal to zero, it is defined continuity type. We can find that transition from 1989 to 2003 is increased from 34.3% to 50.3%. If the outcome is greater than zero, it is defined activity type. After calculate the transition, we can gain from 1 to 4 and define all of them are belong to activity type. We can find that the highest of activity type of aging is at 1989-1993. It's decreased from 1989-1993 to 1999-2003. If the outcome is smaller than zero, it is defined disengagement type. After calculate the transition, we can gain from -4 to -1 and define all of them are belong to disengagement type. We can find that the highest of disengagement type of aging is at 1993-1996. It's increased from 1989-1993 to 1993-1996, and decreased from 1993-1996 to 1999-2003 (Table 5.).

After know every participants' aging stage of each 1989-1993, 1993-1996, 1996-1999 and 1999-2003, the author conclude the transition of aging in the Table 6. We can find that 49.25% elderly who experience transition from Activity type →Disengagement type →Continuity type(continue the disengagement ) →Continuity type(continue the disengagement ). As a result, we can conclude that the pattern IV is Activity type →Disengagement type →Continuity type(Figure 3.). We can find that 12.0% elderly who experience transition from Continuity →Continuity →Disengagement → Disengagement type . As a result, we can conclude that the pattern II is Continuity type → Continuity type → Disengagement type(Figure 3.). And 10.5% elderly who experience transition from Disengagement →Activity →Continuity(continue the Activity ) → Continuity(continue the Activity ) . As a result, we can conclude that the pattern VI is Disengagement type → Activity type → Activity type. And 10.5% elderly who experience transition from Continuity →Continuity → Continuity →Continuity.

Table 4. Reclassify leisure activity in elderly of 1989, 1993, 1996, 1999 and 2003 year. (N=400)

	1989	1993	1996	1999	2003	P-value
	%	%	%	%	%	
<b><u>Reclassify leisure</u></b>						
<b>Type I</b>						***
Participant	96.5	96.5	96.8	95.8	91.3	
Unparticipant	3.3	3.5	2.3	4.0	8.8	
<b>Type II</b>						**
Participant	37.5	36.3	79.5	78.3	67.3	
Unparticipant	62.3	63.8	19.3	21.3	32.5	
<b>Type III</b>						***
Participant	31.5	67.3	66.3	65.0	55.8	
Unparticipant	67.8	32.8	32.3	34.0	44.3	
<b>Type IV</b>						***
Participant	14.5	61.5	24.8	21.5	14.8	
Unparticipant	85.3	38.5	75.3	78.5	85.3	
<b><u>Redefine leisure participant</u></b>						
Unparticipant	1.3	1.8	1.0	1.0	6.0	***
Type I	17.5	12.8	8.8	10.5	13.3	
Type II	9.5	2.5	17.8	17.8	18.8	
Type III	57.0	21.5	47.8	49.0	47.3	
Type IV	14.5	61.5	24.8	21.5	14.8	

\*P<0.05, \*\*P<0.01, \*\*\*P<0.001(two-tailed)

Source: 1989, 1993, 1996, 1999 and 2003 "Survey of Health and Living Status of the Elderly in Taiwan".

As a result, we can conclude that the pattern I is Continuity → Continuity → Continuity. And 7.5% elderly who experience transition from Activity → Continuity(continue the Activity) → Continuity(continue the Activity) → Continuity(continue the Activity). As a result, we can conclude that the pattern III is Activity → Activity → Activity type. And 1.0% elderly who experience transition from Disengagement → Continuity(continue the Disengagement) → Continuity(continue the Disengagement) → Continuity(continue the Disengagement). As a result, we can conclude that the pattern V is Disengagement → Disengagement → Disengagement type. And there are 9.25% are other patterns.

Table 5 Transition type and depth by aging stage

Transition \ period	1989-1993	1993-1996	1996-1999	1999-2003
Disengagement type	11.0	47.0	24.5	33.0
-4	0.0	0.0	0.0	0.0
-3	1.3	3.0	1.3	3.3
-2	6.8	11.5	6.5	10.3
-1	3.8	32.5	16.8	19.5
Continuity type	34.3	38.5	56.5	50.3
Activity type	54.0	14.5	19.0	16.8
1	34.8	7.8	13.0	11.5
2	9.5	5.3	5.0	5.0
3	9.0	1.5	1.0	0.3
4	0.8	0.0	0.0	0.0
Total (N)	400	400	400	400

Note: Figures in percentage except Total (N) in number. Source: 1989, 1993, 1996, 1999 and 2003 “Survey of Health and Living Status of the Elderly in Taiwan”.

Table 6. Patterns of Three stages theory

Pattern	Aging stage				N=400 (100%) %			
	1989-1993	→	1993-1996	→		1996-1999	→	1999-2003
I	Continuity	→	Continuity	→	Continuity	→	Continuity	10.5
II	Continuity	→	Continuity	→	Disengagement	→	Disengagement	12.0
III	Activity	→	Continuity	→	Continuity	→	Continuity	7.5
IV	Activity	→	Disengagement	→	Continuity	→	Continuity	49.25
V	Disengagement	→	Continuity	→	Continuity	→	Continuity	1.0
VI	Disengagement	→	Activity	→	Continuity	→	Continuity	10.5
Other	Activity, Continuity or Disengagement	→	Activity, Continuity or Disengagement	→	Activity, Continuity or Disengagement	→	Activity, Continuity or Disengagement	9.25

Source: 1989, 1993, 1996, 1999 and 2003 “Survey of Health and Living Status of the Elderly in Taiwan”.



We can conclude the above transition of aging infer to three stages theory has the following trend (Figure 3.)

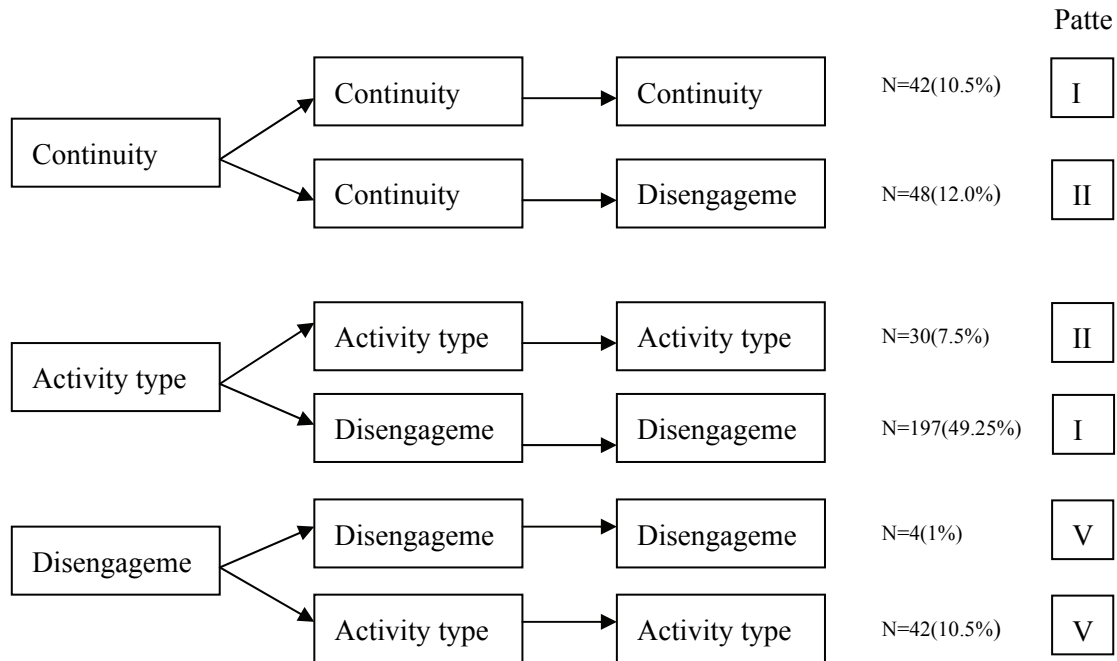


Figure 3. Three stages of aging in the study.

**Correlations between Socio-Economic Factors and leisure styles**

In Table 7, we found that age, gender, education, living arrangement, health, economic, occupation and occupation ownership can effect elderly’s leisure-style. We can find that female tend to participate type I and type II leisure style, and males tend to participate type IV leisure style. We can also find that participants who is illiterate and literate or elementary education tend to participate type I and type II leisure style, and junior high school tend to participate type IV leisure style. About living arrangement who choice live along or live with spouse tend to participate type IV leisure style. Participants who answer their self-rating health status is good tend to do type IV leisure style. Participants who answer their self-rating economic status is good tend to do type IV leisure style too. Participants who are managers tend to do type IV leisure style. Participants’ pre-retire occupation belong to themselves or their spouse or their family are tend to participate type IV leisure style. The older the participants are, they tend to participate type I or type II leisure style(Table 7.).

Table 7. Factors that affect Leisure style(unparticipant, type I, II, III, IV,V) of participant.( Chi-square tests)

Variables	1989		1993		1996		1999		2003	
	$\chi^2$	p-value	$\chi^2$	p-value	$\chi^2$	p-value	$\chi^2$	p-value	$\chi^2$	p-value
Age	14.60	0.554	23.64	0.000***	35.17	0.000***	42.98	0.000***	18.60	0.017*
Gender	10.34	0.035*	24.24	0.000***	23.64	0.000***	16.50	0.002**	14.81	0.005**
Education	34.32	0.000***	38.05	0.000***	42.06	0.000***	53.38	0.000***	24.91	0.002**
Marital	17.26	0.123	11.92	0.452	13.91	0.307	18.55	0.100	15.95	0.193
Living member	14.55	0.267	8.82	0.772	7.60	0.815	8.60	0.737	16.98	0.150
Living status	10.97	0.204	2.02	0.980	6.67	0.572	6.59	0.584	6.46	0.596
Living arrangement	16.12	0.041*	9.75	0.283	18.58	0.017*	21.49	0.006**	82.81	0.000***
Health	15.89	0.044*	27.90	0.000***	32.49	0.000***	31.30	0.000***	56.82	0.000***
Economic	28.84	0.000***	71.31	0.000***	29.77	0.000***	28.87	0.000***	34.40	0.000***
Occupation	35.07	0.000***	30.24	0.003**	33.45	0.001**	48.72	0.000***	38.15	0.000***
Occupation owner	3.25	0.917	17.35	0.027*	24.79	0.002**	25.88	0.001**	27.72	0.001**

\*P<0.05, \*\*P<0.01, \*\*\*P<0.001(two-tailed)

Source: 1989, 1993, 1996, 1999 and 2003 "Survey of Health and Living Status of the Elderly in Taiwan".

### ***Factors to the transition of three stages***

Table 8 shows factors affecting the transition of three stages in Tsai's theory, and all of these are based on social-demographic characteristics in 1989. The transition between 1989-1993 is effected by gender, education and living arrangement. Females tend to start at disengagement or continuity type of aging, while males tend to start at activity type of aging. Participants who are literate or elementary or junior high school educated tend to start at activity type of aging. If participant's living arrangement live along or live with spouse tend to start at activity type of aging (Table 8.).

The transition from 1993-1996 is effected by gender, education and occupation ownership. Females tend to be activity type of aging, males tend to be continuity type of aging. Participants who are junior high school educated tend to be continuity type of aging. Participants who are illiterate tend to show activity type of aging. If participant's pre-retirement occupation ownership is self or their spouse or their family, then they tend to be disengagement type of aging. But if

participant's pre-retirement occupation ownership is not self, then they tend to be continuity type of aging (Table 8.).

Table 8. Factors affect the transition of three stage.

	1989-1993		1993-1996		1996-1999		1999-2003	
	$\chi^2$	p-value	$\chi^2$	p-value	$\chi^2$	p-value	$\chi^2$	p-value
Age	7.163	0.519	3.903	0.866	5.754	0.675	13.180	0.106
Gender	8.530	0.014*	6.358	0.042*	0.652	0.722	0.885	0.642
Education	12.215	0.016*	11.214	0.024*	6.870	0.143	7.360	0.118
Marital	2.154	0.905	6.027	0.420	5.853	0.440	11.575	0.072
Living member	11.026	0.088	7.411	0.285	0.206	1.000	5.875	0.694
Living status	3.015	0.555	7.261	0.123	0.859	0.930	1.476	0.831
Living arrangement	10.105	0.039*	5.200	0.267	3.024	0.554	4.772	0.312
Health	8.272	0.082	7.460	0.113	8.744	0.068	7.424	0.115
Economic	6.330	0.176	6.007	0.199	1.873	0.759	0.443	0.979
Occupation	12.510	0.052	11.898	0.064	4.734	0.578	3.885	0.692
Occupation owner	9.169	0.057	10.447	0.034*	5.580	0.233	9.747	0.045*
TV, Radio	1.482	0.447	8.523	0.014*	4.002	0.135	0.085	0.959
Newspaper	11.801	0.003**	10.619	0.005**	2.326	0.313	1.506	0.471
Playing games	4.028	0.133	8.593	0.014*	6.557	0.038*	2.336	0.311
Socializing	13.954	0.001**	5.623	0.060*	3.777	0.151	0.370	0.831
Gardening	2.280	0.320	0.752	0.687	5.109	0.078	2.408	0.300
Collective exercise	98.341	0.000***	25.721	0.000***	3.405	0.812	0.950	0.622

\*P<0.05, \*\*P<0.01, \*\*\*P<0.001(two-tailed)

Note: The table is based on social-demographic characteristics in 1989, and dependent variables are continuity type, disengagement type and activity type.

### ***Factors affect the model of transition of three stages***

Table 9 shows the social-demographic characteristics of the models of aging transition, and factors affect transition of aging stages, the social-demographic characteristic is based on 1989. We can find that beside pattern IV and pattern II, males tend to be at pattern I, and females tend to be pattern VI. Pattern I shows continuity type→ continuity type→ continuity type→ continuity type. Pattern VI represents disengagement type →activity type→ continuity type→ continuity type.

Insofar as participants who engage in socializing and visiting and collective exercise are concerned, if participant who do collective exercise before retirement, they tend to be the pattern II of aging transition. If participants who do socializing and visiting activities before retirement, they tend to be pattern IV of aging transition. Pattern IV is means activity type→ disengagement type→ continuity type→ continuity type.

## **Discussion**

### ***Gender as an important variable to the dynamic aging process***

By thinking about activity theory, with regard to adding new activities in old age, it is known that starting a new activity is uncommon, that it occurs more often among women, and that it usually occurs in the following domains: exercise, indoor activities and hobbies (Iso-Ahola, Jackson and Dunn 1994; cf Nimrod, 2008:833). Among men one can add the domestic domain (e.g. cooking, shopping, cleaning), which in many cases was previously dominated by their wives (Gordon, Gaitz and Scott 1976; Long 1987; Parnes et al. 1985; cf Nimrod, 2008:833).

In our study, we find that gender is an important variable to the dynamic aging process. We can find that pattern IV (Activity type →Disengagement type →Continuity type) is the major type for male and female. But the man show high percent of pattern I (continuity type→ continuity type→ continuity type), and the female show high percent of pattern VI(disengagement type →activity type→ activity type). As a result, man tends to continuity their life style, and women tend to adding new activities in their life.

### ***Age as an important variable to the transition of life stages***

In this study, the older a person becomes, the more he or she participate less leisure activities. The result support disengagement theory. Disengagement theory point out that the older a person

Table 9. Social-demographic characteristic of the models of aging transition, and factors effect transition of aging stages(Based on 1989).

Variables	Total(N=400)	Three stages theory of aging (%)						P-value
		Pattern I	Pattern II	Pattern III	Pattern IV	Pattern VI	Pattern VII	
<b><u>Gender</u></b>								0.016*
Male	194	12.4	12.9	6.7	54.6	7.2	6.2	
Female	206	8.7	11.2	8.3	44.2	13.6	14.1	
<b><u>Age</u></b>								0.384
60-64	203	11.3	11.8	9.4	48.8	8.4	10.3	
65-69	145	11.0	8.3	5.5	51.7	12.4	11.0	
70-74	39	2.6	23.1	5.1	48.7	10.3	10.3	
75-79	11	18.2	27.3	9.1	27.3	18.2	0.0	
80 and over	2	0.0	0.0	0.0	50.0	50.0	0.0	
<b><u>Education</u></b>								0.230
Illiterate	153	9.8	11.8	9.2	42.5	15.7	11.1	
Illiterate or elementary	147	10.2	10.9	4.8	56.5	8.2	9.5	
Junior and over	100	12.0	14.0	9.0	49.0	6.0	10.0	
<b><u>Marital status</u></b>								0.816
Married	289	11.4	12.1	7.6	49.8	9.7	9.3	
Widower	91	8.8	9.9	7.7	45.1	13.2	15.4	
Divorce or live apart	9	0.0	22.2	0.0	66.7	11.1	0.0	
Never marriage	11	9.1	18.2	9.1	54.5	9.1	0.0	
<b><u>Living status</u></b>								0.178
Living along	30	10.0	13.3	0.0	56.7	10.0	10.0	
With spouse	53	13.2	7.5	17.0	50.9	7.5	3.8	
With others	317	10.1	12.6	6.6	48.3	11.0	11.4	
<b><u>Self-rating health status</u></b>								0.135
Poor	61	13.1	11.5	4.9	41.0	16.4	13.1	
Average	156	7.7	8.3	6.4	57.7	8.3	11.5	
Good	180	12.2	15.0	9.4	44.4	10.6	8.3	

\*P&lt;0.05, \*\*P&lt;0.01, \*\*\*P&lt;0.001(two-tailed)

Note: Pattern V is not shown in the table, because of the number is too small. Pattern VII are other different pattern, it is from activity, disengagement or continuity→activity, disengagement or continuity→activity, disengagement or continuity.

Table 9. Social-demographic characteristic of the models of aging transition, and factors effect transition of aging stages(Based on 1989).(Cont. 1)

Variables	Total(N=400)	Three stages theory of aging (%)						P-value
		Pattern I	Pattern II	Pattern III	Pattern IV	Pattern VI	Pattern VII	
<b><u>Self-rating economic status</u></b>								0.240
Unsatisfaction	54	5.6	5.6	7.4	46.3	16.7	18.5	
Average	159	9.4	12.6	6.3	51.6	11.3	8.8	
Satisfaction	184	13.0	13.0	8.7	47.8	8.2	9.2	
<b><u>Type of Occupation</u></b>								0.118
Managers	34	20.6	11.8	5.9	44.1	2.9	14.7	
Professions or office employee	39	12.8	17.9	7.7	53.8	5.1	2.6	
Workers	131	11.5	10.7	9.9	52.7	9.2	6.1	
House keepers	196	7.7	11.7	6.1	46.9	13.8	13.8	
<b><u>Owner of Occupation</u></b>								0.183
Self, spouse, or family's	90	13.3	12.2	10.0	52.2	5.6	6.7	
Others'	114	13.2	12.3	7.9	50.9	8.8	7.0	
House keepers	196	7.7	11.7	6.1	46.9	13.8	13.8	
<b><u>Leisure participation</u></b>								
<b><u>Watch TV and listen radio</u></b>								0.590
Participant	385	10.6	12.2	7.3	49.6	10.1	10.1	
Unparticipant	14	7.1	7.1	14.3	35.7	21.4	14.3	
<b><u>Reading newspaper</u></b>								0.067
Participant	183	12.0	11.5	7.7	53.6	5.5	9.8	
Unparticipant	217	9.2	12.4	7.4	45.6	14.7	10.6	
<b><u>Playing games</u></b>								0.126
Participant	54	18.5	13.0	3.7	53.7	3.7	7.4	
Unparticipant	343	9.3	11.7	8.2	48.4	11.7	10.8	
<b><u>Socializing and visiting</u></b>								0.000***
Participant	253	13.4	14.6	3.6	45.1	13.4	9.9	
Unparticipant	147	5.4	7.5	14.3	56.5	5.4	10.9	

\*P&lt;0.05, \*\*P&lt;0.01, \*\*\*P&lt;0.001(two-tailed)

Note: Pattern V is not shown in the table, because of the number is too small. Pattern VII are other different pattern, it is from activity, disengagement or continuity→activity, disengagement or continuity→activity, disengagement or continuity.

Table 9. Social-demographic characteristic of the models of aging transition, and factors effect transition of aging stages(Based on 1989).(Cont. 2)

Variables	Total(N=400)	Three stages theory of aging (%)						P-value
		Pattern I	Pattern II	Pattern III	Pattern IV	Pattern VI	Pattern VII	
<b>Gardening</b>								0.421
Participant	150	12.0	15.3	6.0	44.7	10.7	11.3	
Unparticipant	249	9.2	10.0	8.4	52.2	10.4	9.6	
<b>Collective exercise</b>								0.000***
Participant	58	29.3	46.6	0	0	5.2	19.0	
Unparticipant	341	7.3	6.2	8.8	57.8	11.4	8.5	
<b>Reclassify leisure</b>								
<b>Type I</b>								0.370
Participant	386	10.9	12.2	7.3	49.5	10.1	10.1	
Unparticipant	13	0.0	7.7	15.4	38.5	23.1	15.4	
<b>Type II</b>								0.421
Participant	150	12.0	15.3	6.0	44.7	10.7	11.3	
Unparticipant	249	9.2	10.0	8.4	52.2	10.4	9.6	
<b>Type III</b>								0.000***
Participant	126	13.7	14.0	3.7	46.1	12.5	10.0	
Unparticipant	271	4.0	7.1	15.9	55.6	6.3	11.1	
<b>Type IV</b>								0.000***
Participant	58	29.3	46.6	0.0	0.0	5.2	19.0	
Unparticipant	341	7.3	6.2	8.8	57.8	11.4	8.5	
<b>Redefine leisure participant</b>								0.000***
Unparticipant	5	0.0	0.0	40.0	60.0	0.0	0.0	
Type I	70	0.0	0.0	17.1	65.7	1.4	15.7	
Type II	38	2.6	2.6	15.8	57.9	18.4	2.6	
Type III	228	10.5	8.8	4.4	54.8	13.6	7.9	
Type IV	58	29.3	46.6	0.0	0.0	5.2	19.0	

\*P&lt;0.05, \*\*P&lt;0.01, \*\*\*P&lt;0.001(two-tailed)

Note: Pattern V is not shown in the table, because of the number is too small. Pattern VII are other different pattern, it is from activity, disengagement or continuity→activity, disengagement or continuity→activity, disengagement or continuity.

becomes, they will withdraw from society. Therefore, aging, in the discussion of socialization, as a person grows older, he or she interacts less and less with others (Hochschild, 1975:561). Also, Johnson and Barer(1992:362) wrote, “While these processes are neither inevitable nor universal, these findings point to the relevance of some propositions in the theory of disengagement which help us to better understand the social lives of the very old” (cf. Adams, 2004: 91). We can conclude that age is an important variable to the transition of life stages.

### ***Normal aging and Pathological aging: Health as a variable to the dynamic aging process***

Although in this study, health status is not significantly correlated to the transition of aging process. But the self-rated health status is still a factor that affect elderly participate leisure activities. Good functioning and few physical limitations seem to be prerequisites for participate more leisure activities. They provide the physical ability as well as the emotional capacity to experience new activities. Also, the elderly who participate more activities seem to be considerably better off than non-participants. They reported better health.

The study by Moen and his colleagues also show similar results. Moen, Dempster- McClaim, and Williams 1992) examined the long-term association between engagement and well-being of women. They determined that participation in community organizations was associated with better health, after controlling for previous health status cf. Hinterlong & Williamson, 2006:11). Also, Johnson and Barer’s study reported that correlates of remaining engaged included better functioning, better perceived health, and lack of vision problems, as did social resources including marriage, living with others, and having a child who lives nearby. So as our study, if the elderly participate in many activities, they tend to keep their health well as long as possible.

In the study, the author does not include ADL (Activity Daily Living) and IADL (Instrumental Activity Daily Living) in analysis process. But review literature, loosening of normative controls was seen by Johnson and Barer 1992) in about half of their research participants, most of whom were functionally impaired in several activities of daily living. So the study should contain ADL and IADL variables. So that we could analysis health can affect continuity or not. Because aging people normally are described as “independent adults with persistent self-concepts and identities. They can successfully meet their needs for income, housing, health care, nutrition, clothing, transportation, and recreation” (Atchley, 1989:184). In contrast, people who experience pathological aging are those “who cannot meet their own needs because they are disabled or poor” (Atchley, 1989:184; cf. Burnett-Wolle & Godbey, 2007:499-500). Therefore, if illness or disability impairs their ability to perform certain activities, they are unable to full certain roles and there is a disruption in their occupational self. Atchley claims that this disruption will lead to a disruption in



sense of self. This can lead to a diminish sense of personal competence and overall well-being (Lysack & Seipke, 2003:138).

### ***Marital status: a variable to the dynamic aging process***

One characteristic change that many older adults encounter is the death of a spouse and the bereavement process that accompanies their loss. McCall (1982) reported widowhood entails dramatic changes to personal networks and experience, with potential implications for physical health as well (cf. Bergstrom & Holmes, 2000:378). As Wortman and Silver (1990:225) noted, the study of coping with loss is particularly relevant for understanding successful aging. Loss of a spouse is generally considered to be one of the most serious threats to health, well being, and productivity during the middle and later years (Bergstrom & Holmes, 2000:378).

In this study, with the death of a spouse becomes, the elderly tend to be active or disengage. The result suggests that elderly change their life style to adapt widowhood. Thompson (1992) suggested that participate new activities is more likely after losing a spouse than after retirement, as the individual seeks replacement social involvement to overcome loneliness. Lopata's (1993) investigations of widows also suggested a tendency to 'blossom' through new activities subsequent to a husband's death, but very little published research has studied these patterns (Nimrod, 2008:833). In our study, we find that elderly who have spouse tend to continue their life. But elderly who loss spouse tend to be active or disengage their life. Studies in the United States have also noted that the single most important cause of social disengagement is illness rather than a "natural" process of diminishing participation in pursuit of leisure (Turner, 1989:598).

### ***Retirement as a turning point in life***

Most previous studies of retirees have suggested that participate new activities in their life are rather rare. The present study has shown, however, that one half of a sample of older people in Israel innovated by adding brand-new activities to their leisure repertoire, which provides a rationale for giving the topic more attention in research on older adults' activity patterns. The high rate of innovation suggests that today's older adults are less conservative than stereotypes portray. On the other hand, since only Israeli retirees were investigated, one should be cautious and examine other societies before generalizing for all developed countries (Nimrod, 2008:842). Israelis tend to be less involved in leisure activities prior to retirement than people in the United States (Nimrod, Janke and Kleiber 2008), and thus might be more likely to change their activities when they retire. In other words, the tendency for innovation may be culture dependent, which also requires further research. So how about elderly in Taiwan?

In Taiwan, people who worked full-time prior to retirement had a stronger inclination towards participate more activities than people who worked part-time. This could be explained by the greater increase of free time after retirement. It is possible that for this group, expanding their existing activities was insufficient, so they added new ones. Also, other study suggest that the association between volitional retirement and participate more activities may be explained by the more positive attitudes of those who retired by choice. These retirees might perceive retirement as an opportunity to enjoy what leisure has to offer, and to fulfill old desires and dreams; it may even have been the reason why they retired. The fact that innovation was associated with longer retirement durations suggests that it is a process: that initially the retired tend to continue existing activities, and only if they find out that these are insufficiently satisfying do they try new activities.

In our cohort study, we find that early retirees tend to participate not only existing activities, but also participate other activities. With regard to the benefits of starting a new activity, Thompson (1992) reported that those who develop new activities say that these activities bring special enjoyment and happiness to their lives. From their interviews with middle-aged women, Parry and Shaw (1999) found that although some leisure activities provided women with a sense of familiarity, security and continuity, other practices allowed them to develop new interests, to focus on themselves, and to improve their self-regard(cf. Nimrod, 2008:833-834). Although from an Israeli study, the author found that recent retirees were more likely to reduce than increase their activity despite having more free time (Nimrod, 2007), but that both an increased number of activities and a raised frequency of participation significantly was associated with higher life satisfaction(Nimrod, 2008:833-834). The current study has taken a new direction in older-adult activity research. It calls for a new research agenda on the issue of post-retirement activity, an agenda that will explore and encourage innovation. So it is important to teach elderly adapt retirement and to have positive attitude toward retirement life.

As a result, our study present that recent retirees tend to be active and middle and latter retirees tend to disengaging. Recently study proves that early retirees tend to participate more activities and this is one aspect of activity theory. Also, in Tsai's three stages theory of aging point out latter retirees tend to be disengagement. In other words, in our study explore 'transition is possible, life at post-retirement is not stationary.' Therefore, the early period after retirement is potentially a phase of relatively high innovation. Most employees approaching retirement perceive it as an opportunity for new beginnings (Gee and Baillie 1999; cf. Nimrod, 2008:834-835), and the increased free time after retirement creates an opening for new activities.

After discuss the early retirees tend to be active in our study. Then the author wants to discuss the reason why middle retirees and late retirees tend to be disengaging. In traditional eastern

society, Chinese have the ideal of elderly life. The elderly life is “安養天年” and “含飴弄孫”. The elderly who should do nothing and enjoy their life. It is a lot difference to western society. Therefore, elderly in Taiwan, who retired from work after 5 years, they tend to be disengagement, even though they were still healthy and satisfied with their economic status.

### ***Pre- and post-retirement working history***

About ownership of pre-retirement occupation variable, the study presents that elderly who were managers before retirement tend to continuity their pre-retirement life. But elderly who were professionals, employees or workers tend to be active at early retirement. At middle retirement, elderly who were professionals or employees (including teacher) tend to continue their pre-retirement life. To conclude, while this study illuminates the relationship between working history and transition of aging, it also highlights how important it is for elderly to present a leisure activities competent self to others.

### ***The more years of education the more the elderly tend to be active***

In this study, elderly who perceive 7 years and more (junior high school and above) tend to be active their life style. In contrast, elderly who are illiterate tend to be disengaging their life style. Even though elderly who perceive more educations become unhealthy, they still tend to continue their life style, and less to be disengaging.

### ***Living with children: a factor effect elderly continue their life***

Although McMordie (1981:75) point out children provide important opportunities for the development of intimate relationships. The cycle of interpersonal relationships perpetuates itself through the developing family. In the study, elderly living with others(including their children) tend to continue their life style. Elderly who live with spouse tend to be active. Elderly who live along tend to be active or disengage. The result suggest that elderly living with spouse are more active, but older adults uniformly felt a deep need to keep in close touch with their children.

### ***Interpretation of successful aging***

Rowe and Kahn (1998) asserted that an active engagement with life is one of the central determinants of the ability to age successfully. The results of this study support Rowe and Kahn's conclusion by explicating the respondents' conceptual meaning structure of activity. We find that in early retirees, most of them tend to participate in more leisure activities. At this stage, their self-rating health status are good and their self-rating economic status are also satisfaction.

### ***Represent the three major theories of aging***

The analyses reported represent a partial test of activity theory, continuity theory and disengagement theory. The results support a central premise relative to three stages of theory that transition, as measured by changes of involvement in leisure activities, exerts a positive effect on variables related to socio-demographic variations and pre- and post-retirement work history. Differences in transition of leisure activity type explained more variables pertaining to gender than did differences in age.

### **Conclusion**

In this study, we can conclude that Tsai's three stages theory of aging can be supported. Clearly, the three exciting major theories can be viewed as different stages of retirement life, not three competing theories. The study brings new life into explaining the "dynamic" process of aging life style, leisure and health status after retirement.

### ***Retirement Life is Participatory in Social Activities***

While all members of society are theoretically expected to participate in public life, not all are able or willing to do so. Advocates for older people emphasize that the talents, capabilities, and contributions of older individuals are often systematically discounted, artificially limiting their engagement (Hinterlong & Williamson, 2006:15). Although we have made considerable progress toward eliminating ageism, significant challenges remain, this study and Tsai's transition view clearly demonstrates that it is important to elderly to participate society; the more activities the elderly participate, the healthier the elderly will tend to be.

Perhaps, the most fruitful contribution of this study is that elderly life in retirement is not stationary. Rather, the majority of the elderly go through different phases of changes and transitions, as Tsai has suggested; life evolves from stage to stage even among the elderly in their retirement. Leisure activities are one indication. It can be further assumed that other aspects of elderly life such as post-retirement work participation, moral value, and family life styles pass through similar stage transition as well.

### ***Application from the Theory***

The development of theory used to study older adults' behavior is an evolutionary process (Burnett-Wolle & Godbey, 2007:508-509). Transition at an advanced age is a relatively

unexplored phenomenon. Most academic research into older adults' activity patterns has tended to ignore such transition and to focus on just one theory of aging such as continuity, activity or disengagement. There are several explanations for the neglect of transition in old age, one being that most evidence suggests that change is rather rare. Although older adults have considerable discretionary time in retirement and few parental or other caring responsibilities, they tend not to participate in more activities than before retirement, but rather continue to participate in the same activities as they enjoyed before retirement, or take up again activities in which they were interested or proficient in the past (Nimrod, 2008:831-832). As a result, in continuity view, transition may not happen.

The results indicate that the inclination toward changes of leisure activities significantly associated with the respondents' work and retirement histories, as well as with their gender, self-rated health and self-rated economic. While some support for three stages theory was provided, further research is required to explore the dynamics by which transition at older ages contributes to retirees' wellbeing.

As a result, life after retirement is not stationary. The three major theories as different stages of retirement life, not as three competing theories. The study brings new life into explaining the "dynamic" process of aging life style ; elderly are not homogeneous and stationary. Factors like gender, education, living arrangement and ownership of pre-retirement occupation all have some impacts in life course transition.

### ***Practice Implications***

What do the results suggest for gerontology practice? That one-third to over half of this sample of older adults perceived themselves to be less interested in a number of active instrumental pursuits than they had been a decade earlier shows us that there appear to be age-related changes in the types and quantities of activities people prefer to engage in as they age. In 2003, those aged 74 and above, in particular, reported less investment in pursuits involving physical effort, having a less collective exercise leisure activities. Nevertheless, interest in socialize and visit family members, friends and neighbors remained strong, so that many more subjects reported an increase in investment than reported a decrease. These modest findings suggest that those of us working with adults in later old age would do well to assist them in maintaining the emotional ties they value the most.

### ***Limitations of the Study***

Without data on the general context of each activity, the study could not distinguish leisure activities for 14-year follow up, and so provides no evidence on the similarities or differences between different types of transition and the ways in which they relate to theory. But the limitation of time and data bank sample characteristics may contain bias in our research design and analysis.

### ***Suggestions for the Future Study***

Future study can comparing the second generation cohort, it is also from the same data bank that was conducted at 1996, 1999 and 2003. The respondent was between 50 to 66 years old. Also, future study can expand the number of variables into the study, such as social participation including voluntary activities.

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# Diversity of Elderly Leisure Activities and the Transition of Life Stages: An Integrated View of the Three Major Theories of Aging

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## 摘 要

人口老化是人口轉型下的必然產物，台灣地區的人口變遷已近乎完成整個人口轉型的過程。由於生育率的降低，未來台灣地區的人口數量將呈現負成長，預計從 2023 年的人口數量高點約 2,383 萬人，下滑至 2050 年時的 2,125 萬人，且人口老化程度嚴重。

本調查研究運用行政院衛生署國民健康局自 1989、1993、1996、1999 及 2003 年所進行的大規模「臺灣地區中老年身心社會與生活狀況長期追蹤調查」資料，去檢驗老化的主要三個理論：活躍論(activity theory)、延續論(continuity theory)及撤離論(disengagement theory)。本研究目驗證蔡文輝(2008：80)所提此三理論在詮釋老化現象的過程，不同以往的研究認為此三理論是互斥的，其認為此三理論可同時解釋退休時期的不同老化階段。

因此，本研究主要假設為：(1)退休初期：意即退休後 5 年內，退休者可能傾向於持續其退休前的生活，此時可能適用於延續論，人們可能傾向於延續其相同生活型態。(2)退休中期：意即退休後 6 到 10 年，退休者可能轉向活躍，此時所參與的活動與退休前有些微不同，此時可能適用於活躍論。(3)退休晚期：意即退休後 11 年以上，大部份的退休者可能傾向於撤離論，因為其生理及心理的功能退化，並縮小其與家人或朋友的網絡圈。

為了解臺灣 65 歲以上老人其退休後生活的轉變(例如休閒活動參與)是否會受社會人口學特徵與退休特徵的影響，以及在不同退休時期是否呈現多樣的老化現象。因此，依據主要假設，本研究的研究問題如下：(1)分析臺灣老人在 1989、1993、1996、1999 及 2003 年的社會人口變項與工作退休變項的趨勢變化。(2)社會人口變項與工作退休變項的不同是否會導致不同退休階段的演進？(3)依據不同退休階段如何辨別其適用於哪一個理論去詮釋，且大多數的老年人是否呈現延續式→活躍式→撤離式的模式？研究結果支持蔡文輝所提的社會老化三階段論，並帶來新的觀點詮釋退休後生活的多樣性，對於瞭解人生晚年所遭遇之各種個人與社會問題，有極其重要之省悟。

關鍵字：台灣老年人、人口老化、休閒活動、健康狀態、老化理論。

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