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Do Adults Adjust their Socioeconomic Status Identity in Later Life?*

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Abstract

Previous research shows that socioeconomic status (SES) identity, also referred to as perceived or subjective social status, is shaped by objective measures of status, socio-cultural influences and psychological attributes and predicts current and future well-being. Prior studies, however, have not examined whether older adults reassess their SES identity over time. In this study, we use two assessments of subjective social status measured six years apart in a sample of older Taiwanese adults to: 1) determine the degree to which respondents adjust their perceptions of social rank; and 2) identify the characteristics of individuals who are most likely to revise their assessments. We find that many older Taiwanese adults reassess their SES identity, but most respondents show small to moderate levels of change. Females, more highly educated respondents, and those who have a positive economic outlook tend to revise their subjective social status upward relative to their respective counterparts; those who become widowed during the period adjust their rankings downward compared with those who do not become widowed. These findings suggest that SES identity may be dynamic, highlighting the importance of collecting information on socioeconomic status identity at multiple points in the life course.

Keywords

subjective social status; older adults; Taiwan

Introduction

Previous research shows that socioeconomic status (SES) identity (Goodman *et al.* 2007), also referred to as perceived social status or subjective social status (see for example Adler *et al.* 2008; Collins and Goldman 2008; Demakakos *et al.* 2008; Hu *et al.* 2005; Singh-Manoux, Adler and Marmot 2003; Singh-Manoux, Marmot and Adler 2005; Woo *et al.*

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2008; Wright and Steptoe 2005) predicts current and future well-being, including cognitive function, depression, poor (self-rated) health, functional limitations, difficulty with activities or instrumental activities of daily living, the presence of chronic conditions, and some biological markers of health (Adler *et al.* 2000; Adler *et al.* 2008; Collins and Goldman 2008; Demakakos *et al.* 2008; Hu *et al.* 2005; Singh-Manoux, Adler and Marmot 2003; Singh-Manoux, Marmot and Adler 2005; Woo *et al.* 2008; Wright and Steptoe 2005). Study findings also show that an adult's SES identity is shaped by objective measures of status such as educational attainment, occupational prestige, income and assets and by socio-cultural influences and psychological attributes (Adler *et al.* 2008; Franzini and Frenandez-Esquer 2006; Goldman, Cornman and Chang 2006; Singh-Manoux, Adler and Marmot 2003; Singh-Manoux, Marmot and Adler 2005). Research to date, however, has not examined whether SES identity in later life changes over time or what effect changes in SES identity may have on well-being. This study takes the first step to fill in these gaps by ascertaining whether older adults adjust their socioeconomic status identity.

Theories on the concept of the self suggest that identities or views of the self may be dynamic over the life course (Demo 1992; Markus and Wurf 1987; Whitbourne 1999). Turner (1968, as summarised in a review of the literature by Demo 1992) suggests that the self is comprised of both "self-conceptions" that consist of a core set of attributes, such as personality traits, that are stable throughout life and "self-images" that reflect an individual's self-views at a particular time, in a particular situation or environment (Demo 1992: 305). These self-images are shaped, in part, by social experiences and shifting social roles and, therefore, may change from time to time (Demo 1992). Markus and Wurf (1987) also suggest that the self is made up of numerous "self-representations" but that not all of these representations are accessed in every circumstance (p. 306). Different facets of the self may vary in perceived importance from one situation to the next, leading to revised assessments of the self-concept (Markus and Wurf 1987). Therefore, as older adults experience changes in social roles, such as retirement or the loss of a spouse, or changes in health that accompany ageing, they may re-evaluate their position in the social hierarchy depending on the perceived impact these changes have on their lives and the perceived relevance of the changes for their identities (Whitbourne 1999).

In this study, we use two assessments of subjective social status measured six years apart (2000 and 2006) in a nationally representative sample of older adults in Taiwan. These longitudinal data allow us to examine whether Taiwanese adults report changes to their SES identity in later life. The data, described later in more detail, indicate that 9 per cent of respondents become widowed and 15 per cent leave work during the study period. Many respondents also experience a decline in health. Thus, the six-year time frame is an adequate amount of time to capture changes in SES identity. In line with the dynamic view of the self, we hypothesise that older adults will make adjustments to their SES identity during the six-year period.

To the extent that SES identity changes, we are also interested in determining the characteristics of respondents who are most likely to change their assessments. While we hypothesise that leaving work and becoming widowed will have negative effects on socioeconomic status identity, we do not hold any *a priori* expectations about other characteristics of individuals who would be likely to revise their perceptions of their social standing. Accordingly, we examine social, demographic, and economic factors and psychological attributes that previously have been shown to influence SES identity. We also assess whether physical health influences change in subjective social status. Prior studies of SES identity have not extensively explored the influences of physical health, but evidence suggests that physical health can affect objective indicators of socioeconomic status such as income, wealth and savings (Smith 1999; Smith 2004; House, Lantz and Herd 2005). In so

far as evaluations of SES identity include consideration of these measures of socioeconomic position, physical health may influence subjective assessments of social rank.

Data and Methods

Data

This study used data from the Social Environment and Biomarkers of Aging Study (SEBAS) and its parent study, the Taiwan Longitudinal Study of Aging (TLSA), which was first conducted in 1989 with follow-up interviews approximately every three years. The original TLSA sample was a national probability sample of persons aged 60 and over in 1989; it was extended twice to include a national sample of adults aged 50–66 in 1996 and a national sample of adults aged 50–56 in 2003. In 2000, a sample of respondents interviewed in the 1999 wave of TLSA was selected to participate in the first wave of SEBAS, which included both an in-home interview and a hospital-based physical exam (Goldman *et al.* 2004). A second wave of SEBAS was conducted in 2006; it included the surviving exam participants from SEBAS I and a sample of younger respondents who were first interviewed in 2003.

The analyses presented here focused on the respondents who were interviewed in both SEBAS I (2000) and II (2006). Of the 757 respondents interviewed in 2000 and 2006, 62 respondents were missing assessments of their social status at one or two waves; interviews with 54 of these 62 respondents were conducted with a proxy who was not asked the subjective social status question. We excluded all respondents who did not provide a social status assessment at both waves as well as one respondent who reported an ethnic identification other than Fukien, Hakka, or Mainlander (the three main ethnic groups in Taiwan). The resulting sample size was 694. There were an additional 199 respondents who were missing covariates of interest. We retained these respondents in the analysis, imputing the data that were missing. Imputation procedures are described below in greater detail as are analyses that test the sensitivity of our results to this treatment of the missing data.

Measures

Socioeconomic Status Identity—To capture evaluations of socioeconomic status identity, we used the MacArthur Scale of Subjective Social Status (Adler *et al.* 2007). In both waves of the study, respondents were shown a picture of a ladder with rungs numbered 1 to 10 and were read the following question:

Here is a ladder. There are ten stairs in total from the bottom to the top.

Think of the first ladder as representing where people stand in Taiwan where the top of the ladder are the people who are the best off – those who have the most money, the most education and the most respected jobs. At the bottom are the people who are the worst off – who have the least money, the least education, and the least respected jobs or no jobs.

The higher up you are on this ladder, the closer you are to the people at the very top; the lower you are the closer you are to the people at the very bottom.

If you consider your current situation and compare it with all other people in Taiwan, where would you place yourself on this ladder? Please indicate it to me. (Interviewers were instructed to circle the rung that the respondent indicates.)

Predictors of change in subjective social status—Unless otherwise specified, predictors were measured at the baseline wave of data collection in 2000. Demographic variables included age, gender, ethnicity, having one or more living sons in 1999, and a dichotomous measure that indicated whether the respondent lived in an urban area.

We examined six measures of socioeconomic status. The number of years of schooling completed by the respondent and occupational prestige based on the primary lifetime occupation of male respondents and the husbands of female respondents were measured during the respondent's first interview in the study. The measure of occupational prestige was derived from Tsai and Chiu's (1991) socioeconomic index (SEI) for Taiwan. We used husband's occupation because the cohorts of women included in our sample had low levels of labour force participation and because previous research has suggested that women who were not employed or who had not worked outside the home used the status of their husbands in their assessments of their position in the social hierarchy (Davis and Robinson 1988; Simpson, Stark and Jackson 1988; Goldman, Cornman and Chang 2006). SEI ranged from 55.1 (farm owners and labourers) to 76.1 (doctors and dentists).

Four other socioeconomic measures came from the 1999 TLISA survey: the number of years of completed schooling for the most educated child of the respondent; the respondent's income and his or her spouse's income if married; the total value of all assets, including the value of savings, stocks, other assets, and a home, farm, or business if owned; and whether the respondent owned a car.

We combined responses to two items measured in 2000 to create an indicator that reflected the respondent's economic outlook: (1) how often respondents felt anxiety about finances (never, sometimes, usually); and (2) respondents' evaluation of their ability to meet living expenses and other expenditures (respondent had enough money with some left over, just enough money with none left over, some difficulty meeting expenses, or much difficulty meeting expenses). Each variable was coded so that higher values represented more positive assessments. The observed range for this economic outlook indicator was 0–5.

Our measure of social involvement reflected the number of social activities in which a respondent participated. Activities comprised membership in a neighbourhood, religious, farmers', or a political or village association; membership in a social service group; membership in a club for the elderly; and partaking in educational opportunities for the elderly. The observed number of activities ranged from 0 – 7.

We examined three psychological attributes (life satisfaction, depressive symptoms, personal mastery) and two measures of physical health (chronic conditions and functional limitations). Life satisfaction, measured in 1999, was derived from a single question that asked respondents whether they were satisfied with their lives. Depressive symptoms were measured using a 10-item subset of the 20-item Center for Epidemiologic Studies–Depression Scale (CES-D; Radloff 1977); similar short-form versions of the CES-D have been validated among older Chinese (Boey 1999; Cheng and Chan, 2005). Respondents reported whether and how often they: had a poor appetite; were exhausted; had poor sleep; felt depressed; were lonely; felt others were unfriendly; felt anguished; were unable to get going; felt joyful; and felt that life was going well. The depressive symptoms scale was the sum of the individual items (each coded 0–3) with the scores for the last two items reversed so that higher values for all items indicated worse symptom severity. The observed range for the depressive symptoms scale was 0 to 28.

Personal mastery was treated as a seven-item index that reflected the degree to which respondents felt that their life chances were under their own control rather than left up to fate (Pearlin and Schooler 1978). Respondents were asked how strongly they agreed or disagreed that: they had little control over things; there was no way they could solve some problems they had; there was little they could do to change important things in their life; they often felt helpless in dealing with problems in life; they felt that what happened to them in the future mostly depended on themselves; and they could do just about anything they

really set their minds to do. All items were coded so that higher values reflected more control. We used the average score across the items for respondents who provided answers to four or more of the seven items. The observed index ranged from 0.1 to 3.0.

Physical health was assessed with a count of the number of current chronic conditions and a count of the number of functional limitations the respondent reported. Chronic conditions comprised high blood pressure, diabetes, heart disease, cancer, respiratory problems, arthritis, ulcers, liver disease, cataracts, kidney disease, gout and spinal problems. The number of chronic conditions in the sample ranged from 0 – 6. Functional limitations included difficulty with standing for 15 minutes, standing for 2 hours, squatting, raising hands overhead, grasping, lifting 11–12 kilos, running a short distance, walking 200–300 meters, and climbing stairs. The observed number of functional limitations ranged from 0–9.

We also included indicators of two life events that are likely to affect socioeconomic status identity: becoming widowed and changing work status. We used a dichotomous indicator for whether a respondent became widowed during the study period. The measure for change in work status captured whether a respondent shifted from working at the first wave to not working at the second wave. The surveys ascertained the work status of respondents as either 1) currently working, which included currently working full or part time or had a job but was temporarily not working or 2) not currently working, which encompassed being retired, helping with a family business, unemployed, doing housework or other non-working situation. We did not include changes in the other covariates in the model for two reasons. First, although our analysis did not allow us to establish causality, we expected that the relationship between these two variables and changes in the ladder score were less likely to be confounded by reverse causality than the corresponding associations involving other variables of interest. Leaving work and becoming widowed were much more likely to lead to changes in ladder scores than the reverse. For variables such as mental and physical health, personal mastery, and life satisfaction, changes in these measures could have led to changes in the ladder rankings, but changes in ladder rankings also could have resulted in changes in these measures. Second, while it would have been useful to examine the effects of changes in income, assets, car ownership and the number of living sons on changes in ladder score, data on these measures were not collected in the 2006 wave of the study.

Analytic Strategy—We first present descriptive statistics for the predictors and change in the predictors. Next, we investigate change in ladder scores between 2000 (T1) and 2006 (T2). We present a description of the ladder rankings at T1 and T2 and of change in ladder rankings between T1 and T2, keeping in mind that the latter results may reflect true change as well as measurement error. Although formal tests for distinguishing true change from measurement error are not possible with only two waves of data, it seems plausible that moderate to large changes in ladder scores (greater than one baseline-ladder-score standard deviation) reflect more than measurement error.

Finally, to determine the characteristics of respondents who are most likely to revise their ladder score, we use ordinary least squares (OLS) regression to run a lagged dependent variable model. Inclusion of the ladder ranking in the first wave reduces concerns about regression toward the mean (i.e., respondents who report extremely low or high values at the first wave are very likely to provide values closer to the centre at the subsequent wave). In this model, T2 ladder ranking (Y_{i2006}) is regressed on T1 ladder ranking (Y_{i2000}) and the predictors previously described (X_i):

$$Y_{i2006} = \alpha + \gamma Y_{i2000} + \beta X_i + \varepsilon_i \quad (1)$$

Note that this model is equivalent to the model for which the outcome is the change score ($Y_{i2006} - Y_{i2000}$):

$$(Y_{i2006} - Y_{i2000}) = \alpha + \lambda Y_{i2000} + \beta X_i + \varepsilon_i, \quad (2)$$

The value of λ in equation (2) is simply one less than the corresponding value in equation (1), whereas the estimates of α and β are the same in both models. The β coefficients, therefore, can be interpreted as the association between each predictor and change in ladder score, controlling for other predictors in the model. For example, a significant positive coefficient for being female indicates that, controlling for other covariates in the model, women revise their assessment of their social position upward, on average, compared with men. Similarly, significant coefficients for continuous predictors, such as years of completed education, indicate the amount of increase or decrease in ladder rankings over time for each unit increase in the variable of interest.

We used the ‘ice’ and ‘mim’ procedures in Stata 11.1 to impute missing data and estimate the OLS regression model just described (StataCorp 2009). These procedures created 10 datasets with imputed values for the missing data, estimated the model described above using each dataset, and pooled the results from each of the 10 individual analyses to produce a single estimated model (Marchenko and Royston 2009). We tested the robustness of the results to the treatment of missing data by performing an additional set of analyses using the sample consisting of the 495 respondents with complete data. We found that the magnitudes of the significant coefficients were similar to the results based on the sample of respondents with complete data. We have, therefore, presented the results based on the imputed data, but also discuss differences between the two models.

Results

Respondent Characteristics

At baseline the average age of respondents was about 66 years, less than half were female (43.5%), and most were Fukien (69.6%), lived in an urban area (55.3%), and had one or more living sons (92.8 %; see Table 1). The average number of years of education for respondents was 5.6 years compared with 13.2 years for their most educated child. The mean couple income was NT\$470,000 (about \$14,524 in 1999 US dollars) and the average value of assets was NT\$5,600,000 (or \$ 161,112 in 1999 US dollars). Just less than half of the respondents owned a car (48.0%) and the mean occupational prestige score was 62.1, the approximate score for a semi-skilled worker.

Generally, respondents seemed to have positive outlooks and were in good mental and physical health, but their involvement in social activities was low. The mean of the economic outlook indicator was 3.5 out of 5. The average personal mastery score was 1.7 out of 3.0 and 69 per cent of respondents reported being satisfied with their lives. Depressive symptom severity averaged 5.3 out of a possible 30 and respondents had on average 1.3 chronic conditions and 1.8 functional limitations. The mean number of social activities was less than one (0.8).

Some of these characteristics changed over time. The most notable changes were for chronic conditions, which increased on average by a little more than half of a condition (0.69), and functional limitations, which increased on average by nearly one limitation (0.87). In addition, 9 per cent of respondents became widowed and 15 per cent left work (Table 1).

Change in Subjective Social Status

Overall, the average ladder ranking increased significantly from 3.9 to 4.1 (p-value for a two-tailed t-test = .0049; Table 2). At both waves, respondents were most likely to rank themselves in the lower of the two middle categories (i.e., 28% to 30% of respondents reported a ranking of 5). The distribution of the ladder scores was skewed toward the bottom of the scale in both years, although compared with T1, fewer respondents placed themselves on the lowest two rungs at T2. At T1, 56 per cent of respondents placed themselves on rungs 1 to 4 and only 6% on rungs 7 through 10. At T2, 50 per cent of respondents ranked themselves between 1 and 4 and about 6 per cent between 7 and 10. The Pearson correlation between the T1 and T2 ladder scores was 0.40.

On average, respondents changed their ladder scores by 1.5 rungs (Table 3). Although the majority of respondents (60%) increased or decreased their rank by one rung or less (about of the standard deviation of the ladder score at baseline), 22 per cent changed their scores by 2 rungs (about 1 baseline-ladder-score standard deviation) and 19 per cent changed their scores by 3 or more rungs (1.5 or more baseline-ladder-score standard deviations).

Who Revises Their Ladder Rankings?

After controlling for T1 ladder scores and other covariates, six factors were significantly associated with T2 rankings (Table 4). Women increased their ladder score more than men (by just less than half a rung) and those with higher levels of education increased their score more than those with less education. For each one step increase in the economic outlook indicator, the ladder score at T2 increased by about one-quarter of a rung relative to the score at T1. Becoming widowed had a negative effect on the ladder score: respondents who became widowed during the study period reduced their ladder rankings by half a rung, on average, compared to those who did not become widowed. Although ladder scores also decreased for urban compared to rural residents and increased for respondents who had living sons vs. respondents who did not, we need to be cautious in interpreting these results as these factors were not significantly related to change in ladder score in analyses based on the complete (i.e., non-imputed) data. Psychological attributes and physical health status measured at T1 and leaving work during the period were not significantly associated with change in subjective social status.

Conclusions

While several studies have examined the determinants of socioeconomic status identity and its relationship to well-being, this is the first study that has examined whether older adults reassess their views of their social rank over time. Because older adults experience changes in social roles, health and finances, we hypothesised that older adults would revise their SES identity during the 6-year study period. Our findings suggest that many older Taiwanese adults reassess their SES identity, changing their ladder scores by 1.5 baseline-ladder-score standard deviations or more, but most respondents show small to moderate levels of change, modifying their ladder score by 1.0 or fewer baseline-ladder-score standard deviations.

Our results also show that even though many respondents may change their perceptions of their social rank, the tendency to use the middle or lower part of the ladder rather than the top remains. These assessments differ from those using similar measures of SES identity in Western populations where the distributions are generally symmetrical or positively skewed (Kelley and Evans 1995; Singh-Manoux, Adler and Marmot 2003). In a previous evaluation of ladder scores in Taiwan, Goldman, Cornman and Chang (2006) show that this propensity to report relatively low rankings persists across social strata defined by education and income. These low self-assessments of social status may be related to the importance of

modesty and humility in traditional Chinese culture (Crittenden, 1991; Goldman, Cornman and Chang 2006; Lee and Seligman 1997).

Although respondents revise their SES identity over time, only a handful of the characteristics that we examined are significantly associated with this change in assessment. Females, more highly educated respondents, and those who have a positive economic outlook tend to revise their assessments upward. Those who become widowed lower their views of their social standing. Psychological attributes and physical health measured at baseline do not appear to play a role in the revision of subjective social status assessments. Finally, although the direction of the effect of leaving work on change in SES identity is in the hypothesised negative direction, leaving work does not significantly affect views of social rank.

Several factors could account for the association between gender and change in ladder score. Traditionally, Taiwanese women gained status within the family over the life course as they gave birth to a son and, later, as the family head's wife who directs and controls household resources and labour, particularly those of her daughter-in-law (Gallin 1986; Gallin 1994). However, with economic development and more opportunities for men and women to work outside the family, some members of the younger generation have become less dependent on familial resources for their economic well-being, shifting power and control away from the older generation (Gallin 1994). An older woman's status in the family, then, may be tied more to the support provided to children and grandchildren (Gallin 1994). Thus, women's perceptions of their social rank in later-life may improve as their daughters and daughters-in-law have children and grow to rely upon their older mothers for help with raising children and other daily tasks.

Data from SEBAS (not shown) reveal that not only are older women more likely than older men to improve assessments of SES identity over time, but men are also more likely than women to lower theirs. This tendency for men to revise downward their perceived social status could be related to the division of family property. Property may be important for a man's status, particularly within the family, because inheritance and care and respect for the elderly can be closely linked (Ikles 1993; Li, Xie and Lin 1993). Family property and resources are generally controlled by the oldest living male, primarily the father, and ideally are not divided among members of the younger generation until the death of this senior male (Ikles 1993). However, for a variety of reasons, property division often occurs prior to the death of the male family head (Ikles 1993; Sung 1981). Once property is divided, the father may experience a loss of power or influence in the family and become dependent on his children, mostly sons, for support (Sung 1981). This belief in the link between property and status in the family remains strong in Taiwan: 75 per cent of TLSA respondents in 1999 and nearly 80 per cent of TLSA respondents in 2003 believe that the elderly should hold onto some property or savings to ensure respect from their children (data not shown).

The finding that having more education is associated with an increase in subjective social rank may reflect a change in the importance placed on education in the assessment of social rank and the possibility that more highly educated respondents may have more complex notions of the self. Theories of the dynamic self (e.g., Markus and Wurf 1987) suggest that different aspects of self-conceptions may be drawn upon at any particular time when individuals evaluate their identities. With the many changing roles that accompany ageing, educational attainment may take on a more prominent role in the SES identity of older adults in Taiwan. In addition, the knowledge that comes with and the experiences afforded by a higher level of education have been associated with a more complex view of the self (Franks *et al.* 1999), perhaps allowing for more fluid evaluations of the self over time among more

highly educated adults. As a result, older educated adults may improve their assessments of their social position relative to their less educated counterparts.

Results regarding the positive association between economic outlook and improvements in perceptions of social rank are consistent with cross-sectional findings from Singh-Manoux, Adler and Marmot (2003). The authors report that satisfaction with standard of living and feeling financially secure are associated with higher assessments of social rank, suggesting that SES identity may reflect, in part, an evaluation of current and future economic and material conditions (Sing-Manoux, Adler and Marmot 2003). As such, positive feelings regarding economic well-being at baseline could be translated into improved assessments of social position over time. Although it is also possible that individuals with the most positive outlooks provide high assessments of their social rank at baseline, leaving little room for improvement, this is not the case for respondents in this study. Respondents with the best economic outlook are similar to highly educated and wealthy respondents in their tendency to primarily use the lower and middle portions of the ladder measure (Goldman, Cornman and Chang 2006). There is, therefore, the opportunity for improvement in evaluations of social rank for respondents holding positive views of their economic situation.

Although we hypothesised that two transitions, widowhood and leaving work, would have a negative effect on SES identity, only widowhood is negatively associated with changes in views of social position. Widowhood may lead to worse evaluations of social position over time because it can affect control of and access to familial property and resources (Fricke, Chang and Yang 1994; Good 1963; Chen, Dai and Parnell 1992). Soon after widowhood, management of family property may revert to the younger generation, particularly married sons (Fricke, Chang and Yang 1994; Wolf 1981). As a result, older men and women may sense a loss of position or a loss of control, leading to a decline in their perception of their overall social standing.

The absence of a relationship between leaving work and SES identity change could be attributable to the varied experiences related to retirement. The meaning and relevance of life changes for the self-concept can vary from individual to individual (Whitbourne 1999) and can depend on the characteristics of the change itself, such as its expectedness, duration, or appeal (Filipp 1981 in Diehl 1999, p. 160 & 163). In the case of leaving work, research shows that the timing of retirement as well as the availability of post-retirement financial support, reasons for retirement, and expectations for and involvement in post-retirement activities vary widely in Taiwan (Hermalin *et al.* 2002; Ofstedal *et al.* 2002). The large variation in the retirement process could result in a multitude of individual interpretations of the meaning of stopping work, which in turn could account for the non-significant relationship between leaving work and change in SES identity.

There are several limitations to our study. First, by having only two assessments of SES identity, analyses cannot distinguish between measurement error and true change. Thus, some of the reported changes in SES identity could simply reflect measurement error. However, a substantial minority of respondents' (19%) changed their assessments by 1.5 or more standard deviations of the baseline ladder score. Such large changes may reflect more than measurement error. Second, the ladder rankings are measured six years apart, during which time many factors related to subjective social status could have changed. However, because both predictors and our outcome are measured simultaneously, we are unable to establish the timing of changes in predictors vis-à-vis changes in subjective assessments of social status. Therefore, we are unable to examine the effects of changes in most covariates on changes in ladder rankings. Finally, these analyses generalize only to older adults in Taiwan. Because the MacArthur Scale of Subjective Social Status is a nuanced measure that

captures socio-cultural aspects of social position, future analyses involving other populations would further enhance our understanding of socioeconomic status identity in later life.

Overall, these results suggest that many older adults are likely to reassess their SES identity in later life, highlighting the importance of collecting information on socioeconomic status identity at multiple points in the life course. As individuals adapt to events such as retirement or widowhood or to changes in health or economic well-being and encounter new social roles, re-evaluations of identity may occur (Demo 1992; Whitbourne 1999). Relying on a cross-sectional view of SES identity may provide an incomplete picture of older adults' social standing. Future analyses should explore whether these changes in SES identity have an effect on well-being. Changes in identity may influence well-being because individuals act, react, interpret experiences, and make choices that are consistent with their perceptions of who they believe and want themselves to be (Markus and Wurf 1987; Whitbourne 1999). A worsening view of social standing, therefore, could be a risk factor for declining health and a stable or improving view could be protective.

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References

- Adler NE, Epel ES, Castellazzo G, Ickovics JR. Relationship of subjective and objective social status with psychological and physiological functioning: preliminary data in healthy white women. *Health Psychology*. 2000; 19(6):586–92. [PubMed: 11129362]
- Adler NE, Singh-Manoux A, Schwartz J, Stewart J, Matthews K, Marmot MG. social status and health: a comparison of British civil servants in Whitehall-II with European- and African-Americans in CARDIA. *Social Science and Medicine*. 2008; 66(5):1034–45. [PubMed: 18180089]
- Adler, NE.; Stewart, J. John, D.; Catherine, T., editors. with the Psychosocial Working Group. [Accessed March 30, 2009] The MacArthur scale of subjective social status. MacArthur Foundation, Research Network on Socioeconomic Status and Health. 2007. Available online at <http://www.macses.ucsf.edu/Research/Psychosocial/notebook/subjective.html>
- Boey KW. Cross-validation of a short form of the CES-D in Chinese elderly. *International Journal of Geriatric Psychiatry*. 1999; 14(8):608–17. [PubMed: 10489651]
- Chen X, Dai K, Parnell A. Disaster tradition and change: Remarriage and family reconstruction in a post-earthquake community in the People's Republic of China. *Journal of Comparative Family Studies*. 1992; XXXIII(1):115–32.
- Cheng ST, Chan AT. The center for epidemiologic studies depression scale in older Chinese: thresholds for long and short forms. *International Journal of Geriatric Psychiatry*. 2005; 20(5):465–70. [PubMed: 15852439]
- Collins AL, Goldman N. Perceived social position and health in older adults in Taiwan. *Social Science & Medicine*. 2008; 66(3):536–44. [PubMed: 18037202]
- Crittenden KS. Asian self-effacement or feminine modesty? Attributional patterns of women university students in Taiwan. *Gender and Society*. 1991; 5(1):98–117.
- Davis NJ, Robinson RV. Class identification of men and women in the 1970s and 1980s. *American Sociological Review*. 1988 Feb.53:103–12.
- Demakakos P, Nazroo J, Breeze E, Marmot MG. Socioeconomic status and health: the role of subjective social status. *Social Science & Medicine*. 2008; 67(2):330–40. [PubMed: 18440111]
- Demo DH. The self-concept over time: Research issues and directions. *Annual Review of Sociology*. 1992; 18:303–26.

- Diehl, M. Self-development in adulthood and aging: The role of critical life events. In: Ryff, CD.; Marshall, VW., editors. *The Self And Society in Aging Processes*. Springer Publishing Company; New York: 1999. p. 150-83.
- Franks, MM.; Herzog, AR.; Holmbert, D.; Markus, H. Educational attainment and self-making in later life. In: Ryff, CD.; Marshall, VW., editors. *The Self And Society in Aging Processes*. Springer Publishing Company; New York: 1999. p. 223-46.
- Franzini L, Frenandez-Esquer ME. The association of subjective social status and health in low-income Mexican-origin individuals in Texas. *Social Science & Medicine*. 2006; 63(3):788–804. [PubMed: 16580107]
- Fricke, T.; Chang, JS.; Yang, S. Historical and ethnographic perspectives on the Chinese family. In: Thornton, A.; Lin, HS., editors. *Social Change and the Family in Taiwan*. University of Chicago Press; Chicago: 1994. p. 22-48.
- Gallin RS. Mothers-in-law and daughters-in-law: intergenerational relations within the Chinese family in Taiwan. *Journal of Cross-Cultural Gerontology*. 1986; 1(1):31–49.
- Gallin RS. The intersection of class and age: Mother-in-law/daughter-in-law relations in rural Taiwan. *Journal of Cross-Cultural Gerontology*. 1994; 9(2):127–40.
- Goldman N, Cornman JC, Chang MC. Measuring subjective social status: a case study of older Taiwanese. *Journal of Cross-Cultural Gerontology*. 2006; 21:1–2. 71–89. [PubMed: 17106646]
- Goldman N, Weinstein M, Cornman JC, Singer B, Seeman T, Chang MC. Sex differentials in biological risk factors for chronic disease: Estimates from population-based surveys. *Journal of Women's Health*. 2004; 13(4):393–403.
- Good, WJ. *Word Revolution and Family Patterns*. Macmillan Press; New York: 1963.
- Goodman E, Huang B, Schafer-Kalkoff T, Adler NE. Perceived socioeconomic status: a new type of identity that influences adolescents' self-rated health. *Journal of Adolescent Health*. 2007; 41(5): 479–87. [PubMed: 17950168]
- Hermalin, AI.; Chan, A.; Biddlecom, A.; Ofstedal, MB. Work, retirement and leisure. In: Hermalin, AI., editor. *The Well-being of the Elderly in Asia: A Four-Country Comparative Study*. University of Michigan Press; Ann Arbor: 2002. p. 231-93.
- House JS, Lantz PM, Herd P. Continuity and change in the social stratification of aging and health over the life course: evidence from a nationally representative longitudinal study from 1986–2001/2002 (Americans' Changing Lives Study). *Journals of Gerontology: Series B*. 2005; 60B(Special Issue II):15–26.
- Hu P, Adler NE, Goldman N, Weinstein M, Seeman TE. Relationship between subjective social status and measures of health in older Taiwanese persons. *Journal of American Geriatrics Society*. 2005; 53(3):483–88.
- Ikles, C. Chinese kinship and the state: shaping policy for the elderly. In: Maddox, GL.; Lawton, MP., editors. *Annual Review of Gerontology and Geriatrics*. Vol. 13. Springer Publishing Company; New York: 1993. p. 123-46.
- Kelley J, Evans MDR. Class and class conflict in six western nations. *American Sociological Review*. 1995; 60(2):157–78.
- Lee YT, Seligman MEP. Are Americans more optimistic than the Chinese? *Personality and Social Psychology Bulletin*. 1997; 23(1):32–40.
- Li RM, Xie Y, Lin HS. Division of family property in Taiwan. *Journal of Cross-Cultural Gerontology*. 1993; 8(1):49–69.
- Marchenko, Y.; Royston, P. What is the relation between the official multiple-imputation command, mi, and the user-written ice and mim commands?. StataCorps; College Station, TX: 2009. Available at http://www.stata.com/support/faqs/stat/mi_ice.html [Accessed January 21, 2010]
- Markus H, Wurf E. The dynamic self-concept: a social psychological perspective. *Annual Review of Psychology*. 1987; 38:299–337.
- Ofstedal, MB.; Chan, A.; Chayovan, N.; Chuang, Y-L.; Perez, A.; Mehta, K.; Hermalin, A. Policies and programs in place and under development. In: Hermalin, AI., editor. *The Well-being of the Elderly in Asia: A Four-Country Comparative Study*. University of Michigan Press; Ann Arbor: 2002. p. 65-99.

- Pearlin LI, Schooler C. The structure of coping. *Journal of Health and Social Behavior*. 1978; 19(1):2–21. [PubMed: 649936]
- Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measures*. 1977; 1(3):385–401.
- Simpson IH, Stark D, Jackson R. Class identification processes of married, working men and women. *American Sociological Review*. 1988; 53(2):284–93.
- Singh-Manoux A, Adler NE, Marmot MG. Subjective social status: Its determinants and its association with measures of ill-health in the Whitehall II study. *Social Science & Medicine*. 2003; 56(6): 1321–33. [PubMed: 12600368]
- Singh-Manoux A, Marmot MG, Adler NE. Does subjective social status predict health and change in health status better than objective status? *Psychosomatic Medicine*. 2005; 67(6):855–61. [PubMed: 16314589]
- Smith JP. Healthy bodies and thick wallets: the dual relation between health and economic status. *The Journal of Economic Perspectives*. 1999; 13(2):145–66.
- Smith, JP. Population Development Review 30 Supplement: Aging, Health, and Public Policy. 2004. Unraveling the SES-health connection; p. 108-33.
- StataCorp. Stata Statistical Software: Release 11.1. StataCorp LP; College Station, TX: 2009.
- Sung, LS. Property and family division. In: Ahern, EM.; Gates, H., editors. *The Anthropology of Taiwanese Society*. Stanford University Press; Stanford: 1981. p. 361-78.
- Tsai, SL.; Chiu, HY. Constructing occupational scales for Taiwan. In: Althausen, R.; Wallace, M., editors. *Research in Social Stratification and Mobility: A Research Annual*. JAI Press Inc; London: 1991. p. 229-53.
- Whitbourne, SK. Identity and adaptation to the aging process. In: Ryff, CD.; Marshall, VW., editors. *The Self and Society in Aging Processes*. Springer Publishing Company; New York: 1999. p. 122-49.
- Wolf, WP. Women, widowhood and fertility in pre-modern China. In: Dupaquier, J., editor. *Marriage and Adoption in China 1845–1945*. Academic Press; London: 1981. p. 139-47.
- Woo J, Lynn, Leung H, Wong SYS. Self-perceived social status and health in older Hong Kong Chinese women compared with men. *Women & Health*. 2008; 48(2):209–34. [PubMed: 19042217]
- Wright CE, Steptoe A. Subjective socioeconomic position, gender and cortisol responses to waking in an elderly population. *Psychoneuroendocrinology*. 2005; 30(6):582–90. [PubMed: 15808928]

Table 1
Descriptive statistics for baseline predictors and change in predictors between T1 and T2 (n=694)

	Baseline			Change (T2 - T1) ^{1,2}		
	Per cent	Mean	Std. Dev.	Per cent	Mean	Std. Dev.
Age (observed range 54–90)		66.2	7.8		n/a	
Female	43.5				n/a	
Ethnicity						
Fukien	69.6				n/a	
Hakka	14.1				n/a	
Mainlander	16.3				n/a	
Urban residence	55.3					
Has one or more living sons	92.8				--	
Respondent years of education (observed range 0–17 yrs)		5.6	4.7		--	
Most educated child education (years; observed range 0–19 yrs)		13.2	3.4		--	
Couple income in 1999 in NT\$100,000s (observed range 0 – 42.4)		4.7	6.2		--	
Missing	4.2					
Value of assets in 1999 in NT\$ millions (range 0–75.5)		5.6	8.0		--	
Missing	18.9					
Owns a car in 1999	48.0				--	
Missing	0.1					
Occupational prestige (observed range 55.1–76.1)		62.1	4.9		--	
Missing	2.4					
Rating of economic outlook (observed range 0–5)		3.5	1.2		-0.001	1.2
Missing	--			0.1		
Personal mastery (observed range 0.1–3.0)		1.7	0.4		-0.05	0.5
Missing	0.1			2.2		
Satisfied with life in general in 1999	68.9			--		
Missing	2.2			--		
Depressive symptoms (observed range 0–28)		5.3	5.3		0.39	6.3
Missing	0.7			2.4		
Number of chronic conditions (observed range 0 – 6)		1.3	1.3		0.69	1.4

	Baseline			Change (T2 - T1) ^{1,2}		
	Per cent	Mean	Std. Dev.	Per cent	Mean	Std. Dev.
Missing	1.7			1.7		
Number of functional limitations (observed range 0 – 9)		1.8	2.2		0.87	2.1
Missing	1.6			2.3		
Number of social activities (observed range 0 – 7)		0.8	1.1		0.02	1.2
Missing	0.6			0.6		
Became widowed	--	--	--	8.7		
Left work	--	--	--	14.6		

¹ 'n/a' indicates that the variable does not change over time. '--' indicates that change in the variable cannot be calculated because the variable is not measured in 2006.

² Note that an additional 22 respondents were missing data on the covariates in 2006. The 2006 data are not utilized in the remainder of the study, so these additional missing cases do not affect other results.

Table 2

Description of subjective social status at T1 and T2 (n=694)

	T1	T2
	Per cent	Per cent
Ladder Scores		
Best-off (10)	0.6	0.4
9	0.1	0.3
8	1.9	1.3
7	2.9	4.2
6	10.5	13.7
5	27.8	30.3
4	14.8	12.1
3	15.9	16.7
2	11.5	10.1
Worst-off (1)	14.0	11.0
Mean score (std. dev.)	3.9 (1.8)	4.1 (1.8)

Table 3

Description of change in ladder score (n=694)

	Per cent
Difference between T2 and T1 ladder scores (T2 score – T1 score)	
4 or more	5.9
3	5.3
2	11.5
1	19.0
0	26.5
-1	14.0
-2	10.1
-3	4.3
-4 or more (observed range -8 to +8)	3.3
Mean change in ladder score ¹ (std. dev)	1.5 (1.4)

¹The mean reflects the mean of the absolute difference between ladder scores at T1 and T2

Table 4

OLS regression coefficients for the effects of T1 ladder score and other covariates on T2 ladder score (n=694)

VARIABLES	β	SE
Ladder score in 2000	0.20	0.04 **
Age		
Female	0.01	0.01
Urban residence	0.41	0.14 **
Ethnicity	-0.29	0.13 *
Hakka	0.17	0.18
Mainlander	-0.06	0.19
Any living sons	0.58	0.26 *
Respondent's education	0.06	0.02 **
Highest child education	0.04	0.02
Couple income	0.01	0.01
Value of assets	0.01	0.01
Owens a car	0.11	0.13
Occupational prestige	0.02	0.02
Economic outlook	0.23	0.06 **
Personal mastery	0.04	0.17
Life satisfaction	0.08	0.15
Depressive symptoms	-0.01	0.01
Number of chronic conditions	-0.003	0.06
Number of functional limitations	-0.01	0.04
Number of social activities	0.10	0.06
Became widowed	-0.49	0.22 *
Left work	-0.21	0.17
Constant	-1.44	1.10

**
p<0.01,*
p<0.05