

## Doing One's Duty: Chronological Age, Felt Autonomy, and Subjective Well-Being

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### *Abstract*

*Existential, psychosocial, and organismic theories propose that human beings tend towards greater autonomy over the lifespan, and that greater autonomy is associated with greater happiness. We tested these two ideas in the under-studied domain of social duties by examining the associations between chronological age, felt autonomy while engaging in various social duties, and subjective well-being (SWB). Study 1 found that older Americans felt more autonomous while voting, tipping, and paying taxes, Study 2 showed that American parents felt more autonomous in their work and citizenship roles compared with their own children, and Study 3 found that older Singaporeans felt more autonomous while obeying authorities, helping distant relatives, and staying politically informed. In all three studies, felt autonomy was also associated with higher SWB. It appears that older persons better internalize their social duties, to their own and societies' benefit. Copyright © 2004 John Wiley & Sons, Ltd.*

### INTRODUCTION

According to existentialist perspectives, a central life-struggle is that of 'becoming authentic', i.e., acting with a sense of choice even as one engages in the non-enjoyable duties of life (Kasser & Sheldon, in press; May, 1980). Only by overcoming the feeling of being controlled by ego-alien forces can one hope to carve out a legitimate selfhood. Put differently, we need to learn to 'own' our 'thrownness' (Heidegger, 1962), avoiding 'bad faith' (Sartre, 1956), even as we do what we must.

The idea that a central life task is that of internalizing social motivations and tasks is also found in psychosocial theories of development. For instance, Erikson's (1963, 1968) lifespan theory suggests that people tend to move towards greater identification with society as they age. This movement is prompted in part by the expanding roles and

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expectations people encounter in later life (Cantor & Langston, 1989), but also by an epigenetic push or growth impulse that is inherent within the human organism (Erikson, 1963). Together, these social and internal forces bring about increasing ego-autonomy over the lifespan (Erikson, 1968). Other psychosocially oriented theorists make similar assumptions, focusing on concepts such as personal expressiveness (Waterman, 1993), ego-development (Hy & Loewinger, 1996), and identity achievement (Marcia, 2002).

Another comprehensive theory focusing on peoples' movement towards greater autonomy over the lifespan is self-determination theory (SDT; Deci & Ryan, 1985, 1991, 2000). This organismic theory of human motivation posits that people have an inherent need for autonomy, that is, the feeling that they endorse and regulate their own behaviour. However, the theory also assumes that people are innately inclined to try to become better integrated into the social matrix (Deci & Ryan, 2000). One solution to the dilemma seemingly posed by these two tasks is to *internalize* the doing of one's duties, i.e. to develop a sense of owning and assenting to non-enjoyable activities that are important for the greater good. This can be difficult, and the movement towards greater autonomy can be stalled or thwarted by various possible contextual as well as intra-psychic constraints. Still, over time, positive change typically occurs, as a natural outcome of organizational processes inherent to living systems (Goldstein, 1939; Maslow, 1971; Rogers, 1961).

The idea that there is normative positive personality change across the lifespan is not without its critics. Some perspectives maintain that the aging process consists primarily of coping with increasing decline, and that the best we can do is compensate so as to maintain equilibrium for as long as possible (Baltes & Mayer, 1999). Others argue that there are many possible life-paths, both positive and negative (Olbrich, 1994), and that researching these different trajectories may be more valuable than seeking to demonstrate normative positive trends (Helson & Srivastava, 2001). Temporal biases in reporting are an additional complicating issue, as older persons may report greater happiness and maturity than they really possess due to an unconscious desire to believe they have made forward life-progress (Wilson & Ross, 2001).

Can the question of whether there is normative movement towards autonomy and personal growth be resolved? In the last 10 years, SDT researchers have introduced a number of conceptual refinements and new measurement models that we believe can supply helpful new approaches to the issue. We will elaborate these below.

### **The SDT approach to conceptualizing and measuring autonomy**

SDT focuses on two basic forms of autonomous motivation. The first is *intrinsic* motivation, which is action undertaken for its own sake, as the individual follows interests, finds flow, and develops skills (see also Amabile, 1996; Csikszentmihalyi, 1997). The second form is *identified* motivation, which is action that has been internalized, such that it is undertaken with a sense of volition (Ryan & Connell, 1989) and authenticity (Sheldon, Ryan, Rawsthorne, & Ilardi, 1997) even though it may not be enjoyable. For example, even though it may not be fun to become informed about election issues, one may still undertake this task with a sense of volition, if one feels that it is a worthwhile and important act. Behaviours undertaken for intrinsic or identified reasons have what SDT calls an internal 'perceived locus of causality', as people typically feel that they are the origin (deCharms, 1968) or causal source of their own actions.

Contrasting with these optimal forms of motivation are two less autonomous (i.e. 'controlled') forms of motivation. First, is *external* motivation, which is behaviour that is

undertaken with a sense of situational compulsion or necessity, or that is oriented towards attaining rewards or avoiding punishments. Second is *introjected* motivation, which is behaviour undertaken due to a sense of guilt or internal compulsion or to avoid self-sanctions or anxiety. Behaviours undertaken for external or introjected reasons have an external perceived locus of causality, as people acting for these reasons typically feel they are pawns (deCharms, 1968) controlled by ego-alien forces. SDT assumes and finds that external, introjected, identified, and intrinsic motivations form a continuum of internalization ranging from least to most internalized (Deci & Ryan, 2000).

Notably, felt autonomy is a situational variable influenced by social-contextual factors *and* an attitudinal or personality variable (Deci & Ryan, 1985). Thus, whereas one person may feel autonomous performing a particular behaviour, another person might feel quite controlled performing that same behaviour. Such individual differences as they relate to common social duties are the primary focus of this article.

### **Previous research associating chronological age with autonomy**

A small body of research is consistent with the organismic and psychosocial theoretical assumption that autonomy increases across the lifespan. Ryff's (1995) cross-sectional studies of adults yielded an association of chronological age with psychological autonomy, and Sheldon and Kasser (2001) showed that older adults endorse more autonomous reasons for pursuing their self-generated personal goals, compared with younger adults. Only one study of which we are aware has examined social duties, as Chandler and Connell (1987) reported that older children listed significantly more internalized reasons for duties such as 'cleaning my room' (e.g. 'because I want to know where my stuff is') than did younger children (e.g. 'because my mother makes me'). Notably, however, age differences in the autonomous regulation of social duties have yet to be examined in adults.

### **Previous research associating autonomy and SWB**

Another prediction of existential, psychosocial, and organismic perspectives is that people are more happy and satisfied in life to the extent that they feel more autonomous in their behaviour. In other words, if autonomy is indeed a psychological need, as SDT proposes, then its satisfaction should promote SWB. For example, compare a person who reviews tedious information about local election issues because she believes in doing her part as a conscientious citizen with another person who does the same because he would feel guilty or risk disapproval if he did not. The former individual would probably experience more vitality and positive mood, as well as less stress and negative mood, than the latter individual, who engaged in the same behaviour with a sense of resentment and resistance.

Much research in the SDT tradition has supported these ideas. Specifically, people acting because of autonomous reasons consistently report greater SWB than those acting because of controlled or externally regulated reasons (see Sheldon, 2002, or Deci & Ryan, 2000, for a review). However, the association between autonomy and SWB has never been examined in the case of social duties. This type of behaviour is particularly interesting to examine, because it involves a potential conflict between peoples' need for autonomy and their need to integrate with the broader social surround. In other words, social duties may impel people to behave in ways that are not particularly enjoyable or pleasant. Although such behaviours can be quite difficult to internalize, they also tend to be quite necessary for the harmonious functioning of society.

### **The current studies**

In the current research we sought to investigate the associations of chronological age, autonomous regulation of social duties, and SWB. Study 1 employed an American community sample of widely varying ages, examining the relative autonomy (or degree of internalization) of important social duties such as voting, paying taxes, and tipping service people. Study 2 compared an American student sample with their own parents, examining felt autonomy in work, filial, and citizenship roles, each of which has a variety of social duties associated with it. Study 3 employed a community sample of widely varying ages from Singapore, evaluating the generalizability of the earlier patterns to a non-Western culture.

In each study we tested two primary hypotheses. Our first hypothesis was that chronological age would be associated with a greater sense of autonomy in 'doing one's duty'. In other words, consistent with existential, psychosocial, and organismic theories concerning normative positive change, older people should feel a more internal perceived locus of causality regarding their own behaviours, duties or otherwise (Chandler & Connell, 1987; Ryff, 1995; Sheldon & Kasser, 2001). Our second hypothesis was that autonomous regulation of duties would be associated with increased SWB. In other words, consistent with the supposition that autonomy is a psychological need (Deci & Ryan, 2000), people evidencing more acceptance and ownership of their duties should also evidence greater SWB. This would replicate the typical pattern in the SDT literature, but extend it to the case of social duties, which have not been examined before.

As a supplementary issue we also examined the association of chronological age with SWB in each study, because positive correlations are sometimes found (Myers & Diener, 1995). When they were found, we intended to conduct mediational analyses to determine whether age differences in autonomy could help account for the age-to-SWB association (Sheldon & Kasser, 2001).

## **STUDY 1**

In Study 1 we evaluated the extent to which people feel autonomous in the common and representative duties of voting, paying taxes, and tipping service people. We reasoned that these are actions that all adults 'should' do, according to the culture. That is, the democratic system needs all eligible adults to vote, no matter what their age, so that electoral decisions properly represent the wishes of the entire population; the legal system requires all wage-earning adults to pay taxes, no matter what their age, so that the governmental services can be provided to everyone; and the social system expects all adults, no matter what their age, to reward good service by those whose incomes depend upon such rewards. However, we reasoned that not all adults are fully willing to perform these three social duties, because of the hassles involved in doing them, the sense that doing them does not really make a difference, or the personal costs that come from doing them. Thus, the duties selected for the study allow for a wide range of motivations, from acting with a sense of autonomy and personal conviction, to acting with a sense of resentment and resistance. Again, we hypothesized that older persons would evidence more autonomy in fulfilling these duties, and that autonomy would in turn be associated with SWB.

## Methods

### *Participants and procedure*

Participants were 170 adults residing in Columbia, MO or St. Louis, MO. Most participants were recruited in physician's waiting rooms, although some were recruited in retirement centres. Participants were asked to complete a two-page questionnaire, with the incentive that they would then be entered into a lottery for a free dinner for two. Participants ranged in age from 20 to 82, with a mean age of 40 and a standard deviation of 17. Eighty-six were men, and 84 were women; 102 were Caucasian, 54 were African American, and 14 were other. Sixty-eight were married, 23 were formerly married, and 79 had never been married. The majority of subjects (96) reported having 'some college education'. The mean yearly income was \$25 000.

### *Measures*

We assessed positive and negative mood using the Positive Affect Negative Affect Schedule (PANAS; Watson, Tellegen, & Clark, 1988), and assessed cognitive life-satisfaction using the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). These three constructs represent perhaps the most important facets of SWB (Diener, 1994; Diener & Lucas, 1999; but see Ryff, 1995, for a different view). The PANAS consists of 20 mood adjectives, 10 positive (e.g. 'excited', 'pleased') and 10 negative (e.g. 'ashamed', 'distressed'). Participants were asked to rate how much they had experienced each mood 'in the past month or so' using a 1 (very slightly or not at all) to 5 (extremely) scale. The SWLS asks participants to rate their agreement with five items, such as 'In most ways, my life is close to my ideal', using a 1 (strongly disagree) to 5 (strongly agree) scale. Alpha coefficients for positive mood, negative mood, and life-satisfaction were 0.88, 0.90, and 0.89, respectively.

A principal components analysis of the three well-being measures (after re-coding negative mood) revealed a single factor, which accounted for 56% of the variance. Thus, to simplify the presentation, we created an aggregate SWB index by standardizing and summing positive mood and life-satisfaction, then subtracting negative mood (Sheldon & Elliot, 1999; Sheldon & Kasser, 1995, 2001). Although results sometimes differed across particular well-being measures these differences did not form a noteworthy pattern, and thus we present only the aggregate SWB data.

After rating their SWB, participants were asked to consider three 'common behaviours', including two civic duties ('voting' and 'paying taxes correctly and on time') and one interpersonal duty ('tipping service people'). First, participants rated how much they actually do each duty compared with other people, using a 1 (much less) to 3 (average) to 5 (much more) scale. We asked these questions so we could control for any between-subject differences in the frequency of duty enactment before testing our autonomy-related hypotheses.

Participants then considered each duty in turn, rating why they do it in terms of four different reasons: 'because others expect you to, or think you should' (external motivation), 'because you really ought to, even if you don't really want to' (introjected motivation), 'because you really identify with doing it' (identified motivation), and 'because of the enjoyment or stimulation it provides you' (intrinsic motivation). Relative autonomy scores were created for each duty by summing the intrinsic and identified ratings and subtracting the external and introjected ratings (Sheldon & Elliot, 1999; Sheldon & Kasser, 1995, 1998, 2001). In addition, an aggregate autonomy score was created by averaging these variables across the three duties ( $\alpha = 0.61$ ).

Finally, as an ancillary measure of autonomy, participants were asked to rate their typical experience in performing each behaviour, using a 1 ('not at all my choice') to 5 ('completely my choice') scale. This allowed us to directly evaluate the existential concept of autonomy, in which maturity involves feeling a sense of choice even as one does what is necessary (May, 1980). An aggregate choice score was computed for each participant by averaging the ratings across the three duties ( $\alpha = 0.72$ ). As with the relative autonomy variables above, we expected age to be associated with the choice variables, and we also expected the choice variables to be associated with SWB.

## Results

### *Preliminary analyses*

Table 1 contains descriptive statistics for the relative autonomy and the choice variables. Notably, the relative autonomy scores are lower than we typically observe in our goal studies (Sheldon & Kasser, 1995, 1998, 2001), suggesting that social duties are more difficult to internalize than personal goals. We conducted an ANOVA on the three autonomy scores with duty as a repeated measure to explore whether felt autonomy differed depending on the duty under consideration. This analysis revealed a significant main effect of type of duty ( $F(2, 338) = 55.99, p < 0.01$ ); specifically, participants reported the highest degree of felt autonomy for tipping service people, followed by voting, with tax-paying feeling least autonomous. Each mean was different from each other mean at the 0.01 level. A subsequent ANOVA on the three choice scores with duty as a repeated measure also found a significant main effect ( $F(2, 338) = 153.87, p < 0.01$ ), with the same basic ordering of means as those for the autonomy scores (see Table 1). Again, each mean was different from each other mean at the 0.01 level.

Next, we correlated the autonomy and choice scores for voting, tax-paying, and tipping. In support of the idea that the two measures address similar underlying issues, the correlations were significant at the 0.05 level or better in each case ( $r = 0.15, 0.32, \text{ and } 0.35$ , respectively).

### *Hypothesis tests*

We next tested our first primary hypothesis, that chronological age would predict autonomy, by examining the aggregate measure and each of the three specific duties scores, for both measures of autonomy. Table 2 contains the associations between age and relative autonomy (top) and between age and felt choice (bottom). These standardized coefficients were derived from eight regression analyses in which the subject's report of

Table 1. Study 1: autonomy and felt choice, by type of duty

	Type of duty		
	Voting	Tax-paying	Tipping
Autonomy	1.09 (2.89)	-0.72 (2.82)	1.92 (2.98)
Felt choice	3.85 (1.26)	2.31 (1.35)	4.22 (1.04)

Numbers in parentheses are standard deviations.

Table 2. Study 1: associations of age and SWB with autonomy and choice

	<i>Autonomy variables</i>			
	Type of duty			
	Aggregate autonomy	Voting	Tax-paying	Tipping
Age	0.23**	0.15*	0.23**	0.15*
SWB	0.31**	0.15**	0.22**	0.26**
	<i>Choice variables</i>			
	Type of duty			
	Aggregate choice	Voting	Tax-paying	Tipping
Age	0.22**	0.08	0.20*	0.17*
SWB	0.27**	0.24**	0.08	0.28**

\* $p < 0.05$ , \*\* $p < 0.01$ .

the extent to which they actually did each duty was first entered as a control variable. As can be seen, age significantly predicted autonomy in seven out of eight cases (the exception being that age did not predict felt choice in the voting domain).

Next we repeated the above analyses, this time controlling for the demographic variables of income, marital status (single, married, or divorced/separated; the latter two statuses were represented by two dummy variables), and ethnicity (Caucasian, African-American, or other; the latter two statuses were represented by two dummy variables). These analyses were important because demographic differences between younger and older participants, which are unrelated to psychological development, might conceivably account for the chronological age effects. However, none of the resulting age coefficients differed significantly from the coefficients reported in Table 2 (although age itself did not always remain significant in these analyses, because of the reduced degrees of freedom in these larger models). Additionally, we examined whether the age to autonomy effects were moderated by gender, focusing on the aggregate autonomy and choice variables. No interactions emerged.

Our second primary hypothesis stated that feelings of autonomy and choice for one's social duties would relate positively to SWB. To test this we conducted eight correlational analyses in which we predicted SWB from each of the three specific autonomy and choice variables, as well as from the aggregate autonomy and choice measures (see Table 2). These correlations were positive and significant in seven out of eight cases, the exception being that felt choice in tax-paying was uncorrelated with SWB. Supplementary regressions again revealed that the seven associations could not be accounted for by demographic factors.

Finally, we evaluated the possibility that chronological age would be correlated with SWB. However, the association was non-significant ( $r = -0.02$ , ns).

## Brief discussion

Study 1 provided good support for our two primary hypotheses. First, chronological age was significantly associated with all three of the relative autonomy measures, and also with the aggregate relative autonomy measure. In addition, chronological age was significantly

associated with two of the three felt choice measures, and also with the aggregate choice measure. Supporting our second hypothesis, all four measures of autonomy were associated with SWB, and three out of four choice measures were associated with SWB.

Exploratory analyses of mean differences revealed that participants felt the most autonomy regarding the behaviour of tipping service people, and the least autonomy regarding tax-paying and voting. This suggests that interpersonal duties are more readily internalized than civic duties, and emphasizes the potential difficulty of ensuring that people carry out civic duties (Erikson, 1963). Notably, the association of age with relative autonomy was largest in the case of tax-paying, the duty that also manifested the lowest autonomy score, overall. This supports Erikson's (1963) supposition that older adults are in a sense the 'pillars' of society, having internalized this most difficult duty to the greatest degree.

## STUDY 2

In Study 2, we assessed the generalizability of the Study 1 effects using a somewhat different conceptualization of duty. Specifically, we considered duties in terms of the *social roles* that individuals play. We reasoned that social roles are prescriptions for behaviour that come from outside the person, just as are duties (Biddle, 1979; Deasy, 1964). Furthermore, many social role obligations are not enjoyable in and of themselves (Sheldon et al., 1997), providing a challenge to individuals and raising the question of whether they can internalize and feel autonomous in performing such behaviours. Specifically, we examined the roles of 'child', 'worker', and 'US citizen'. The question is to what extent individuals of different ages can feel autonomous in performing the behaviours expected by their parents, by their work environments, and by their nation. Again, we reasoned that all adults, regardless of their age, are expected to be supportive of their parents, to take their work seriously (in either the academic or career arenas), and to be conscientious citizens.

In addition, Study 2 used a somewhat different design than Study 1. Specifically, we compared a sample of college undergraduates with their middle-aged parents, who are on average three decades older than their children. This methodological approach relies on a direct mean comparison of older persons to younger persons, who are matched on many important variables (such as genetic similarity, social economic status, home town, and household characteristics). Consistent with Study 1, our first hypothesis was that parents would feel greater levels of autonomy in their roles than would their children, and our second hypothesis was that relative autonomy and felt choice would again be associated with SWB. Finally, we again assessed the association of age with SWB. If it emerged, we intended to evaluate whether age differences in autonomy mediated the association.

## Methods

### *Participants and procedure*

The initial sample consisted of 263 students in a psychology class at the University of Missouri (91 men and 172 women, nearly all Caucasian; the mean age was 21 years, with a standard deviation of 2), who completed a questionnaire in exchange for extra course credit (approximately 20 students in the class declined the extra credit opportunity). We also asked students to supply us with their parents' names and addresses, offering additional extra credit for each completed parent survey received. A questionnaire packet



was sent to each parent listed, which contained the same questions that were administered to students.

We received complete data back from 186 mothers and 162 fathers (for fathers, the mean age was 51 years, and the standard deviation was 5; for mothers, the mean age was 49 years, and the standard deviation was 4). The majority of fathers had finished college, whereas most mothers had 'some college'. Data were available from both parents for 148 students, and from at least one parent for 203 students. Below, we separately analyse the data for the 186 mothers and the 162 fathers, in comparison with their children.

### *Measures*

All participants first rated their well-being, using the same measures and rating scales as employed in Study 1 (i.e. the PANAS and the SWLS). Alpha coefficients were again high for positive mood, negative mood, and life-satisfaction (ranging from 0.81 to 0.88 across the student, mother, and father samples). Also, as in Study 1, a single factor underlay these three measures in each of the three sub-samples. Thus, we again computed an aggregate SWB index by standardizing then combining positive mood and life-satisfaction, and subtracting negative mood.

Next, the questionnaire introduced the concept of a social role, defined as 'a set of behaviours and obligations that we are expected to occupy or fulfill, in a particular domain of life'. Three specific roles were then presented. The first was 'Son or daughter: How you fulfill your role as a son or daughter. If you have very different relations with your mother and father, please focus on the parent who is most involved in your life at present'. The second was 'Worker: How you fulfill your role in the workplace. This may include educational activities relevant to careers or employment'. The third was 'U.S. Citizen: How you fulfill your role as a citizen of this country. Consider civic duties such as voting, tax-paying, jury-serving, and keeping up with current events. If you are not a U.S. citizen, please consider the primary country in which you are a citizen'.

Participants then read 'People do things for many different reasons. When you occupy each of these three roles, how much do you do it for each of the reasons listed below'. Participants then proceeded to rate each role on each of the four reasons that were employed in Study 1 (i.e. external, introjected, identified, and intrinsic reasons). As in Study 1, a relative autonomy index for each of the three roles was computed by summing the intrinsic and identified ratings across the three roles, and subtracting the external and introjected ratings. An aggregate autonomy score was also created by averaging across the three roles (alphas = 0.70, 0.73, and 0.55 for mothers, fathers, and students, respectively).

As a second way of measuring autonomy, we again used the item employed in Study 1: participants rated their typical experience each of the three roles, using a scale ranging from 1 (not at all my choice) to 5 (completely my choice). An aggregate choice variable was computed by summing the three items (alphas = 0.52, 0.53, and 0.52 for mothers, fathers, and students, respectively).

## **Results**

### *Preliminary analyses*

Table 3 contains descriptive statistics for the relative autonomy and felt choice variables, separately for students, mothers, and fathers. We conducted ANOVAs on the three relative autonomy scores with role as a repeated measure, making no predictions. These analyses revealed a significant main effect of role for students ( $F(2, 370) = 62.1, p < 0.01$ ), but no significant role effects for mothers or fathers. For the students, relative autonomies in the

Table 3. Study 2: autonomy and choice scores, by type of role and type of participant

	Student's ratings ( $N = 203$ )			
	Aggregate	Child role	Work role	Citizen role
Autonomy	1.86 (2.25)	3.69 (3.27)	0.79 (2.99)	1.12 (3.05)
Choice	3.54 (0.86)	3.83 (1.27)	3.63 (1.05)	3.18 (1.29)
	Mother's ratings ( $N = 186$ )			
	Aggregate	Child role	Work role	Citizen role
Autonomy	3.92 (2.38)	4.09 (3.27)	3.69 (2.97)	3.98 (2.97)
Choice	3.98 (0.79)	3.81 (1.26)	3.96 (0.95)	4.14 (1.05)
	Father's ratings ( $N = 162$ )			
	Aggregate	Child role	Work role	Citizen role
Autonomy	3.05 (2.44)	3.00 (3.21)	2.85 (3.06)	3.31 (2.92)
Choice	3.71 (0.87)	3.41 (1.47)	3.87 (1.00)	3.84 (1.12)

Numbers in parentheses are standard deviations.

work role and in the citizen role were equal and low, whereas relative autonomy in the child role was much higher. ANOVAs on the three choice scores with role as a repeated measure revealed significant main effects for students ( $F(2, 370) = 18.54, p < 0.01$ ), for mothers ( $F(2, 370) = 5.75, p < 0.01$ ), and for fathers ( $F(2, 322) = 10.52, p < 0.01$ ). The students felt less choice in the citizen role than in the child or work roles (both  $p < 0.01$ ), the mothers felt less choice in the child role than in the citizen role ( $p < 0.01$ ), and the fathers felt less choice in the child role than in the work and citizen roles (both  $p < 0.01$ ).

Next, we correlated the relative autonomy and felt choice scores with each other within the child role, the worker role, and the citizen role, separately for students, mothers, and fathers. Supporting our belief that these measures address the same basic issues, these nine correlations were all positive and significant at the 0.01 level ( $r$  ranging from 0.36 to 0.76).

#### *Hypothesis tests*

Our first hypothesis was that parents would evidence more autonomy and choice for each of the three roles, and aggregated across roles, compared with their offspring. To test this using the relative autonomy measures, we conducted eight paired  $t$ -tests in which the student's three role-autonomy and aggregate autonomy scores were compared with the corresponding mother's and father's scores. The differences were significant in the predicted direction for the work role, the citizen role, and for the summary autonomy measure, compared with both mothers and fathers (all six  $p < 0.05$ ; see Table 3 for the means). However, for the child role, the difference between mothers and students was not significant, and fathers actually manifested significantly less autonomy than students within this role ( $p < 0.01$ ).

Next, we conducted the same eight analyses using the choice variables, rather than the autonomy variables. Again, the differences were significant in the predicted direction at the 0.01 level, in six out of eight cases. Again, however, mothers and students again did not differ in the child role, and fathers felt significantly less choice in this role ( $p < 0.01$ ; see Table 3 for the means). The anomalous findings for the 'child' role will be discussed below.

As a supplementary analysis we conducted eight paired *t*-tests comparing the mothers and fathers, for the 148 students upon whom we had both mother's and father's data. Mothers reported significantly more autonomy or choice than fathers in seven out of eight cases (at the 0.05 level or greater), the exception being that mothers and fathers were equal on felt choice in the work role. These results suggest that middle-aged women may achieve greater internalization of role duties than middle-aged men. Again, however, gender did not interact with age to predict either aggregate autonomy or aggregate choice in Study 1. We will revisit this issue in Study 3.

Our second hypothesis was that autonomy and choice would be associated with SWB. To test this we combined the three samples (mothers, fathers, and students) into one sample ( $N = 551$ ), which included the 186 mothers, the 162 fathers, and the 203 students for whom we had data for at least one parent. We then correlated the aggregate autonomy and choice variables with SWB. Echoing the mean differences reported above, the two correlations were both significant ( $r = 0.27$  and  $0.27$ ,  $p < 0.01$ ). Furthermore, relative autonomy for each of the three roles was significantly correlated with SWB ( $r = 0.16$ ,  $0.26$ , and  $0.23$  for the child, work, and citizen roles, respectively, all  $p < 0.01$ ), as was felt choice for each of the three roles ( $r = 0.15$ ,  $0.27$ , and  $0.19$ , respectively, all  $p < 0.01$ ).

We then evaluated the association between chronological age and SWB, using the same dataset. This association was significant ( $r = 0.18$ ,  $p < 0.01$ ), and thus we tested the possibility that autonomy and choice might mediate the relationship between age and SWB. To set the stage for this analysis we first correlated chronological age with aggregate autonomy and choice, finding significant effects paralleling the parent-student mean differences reported above ( $r = 0.28$  and  $0.17$ ,  $p < 0.01$ , respectively). To test for mediation (Baron & Kenny, 1986), we first averaged choice and relative autonomy to provide the most comprehensive construct indicator (this composite measure correlated  $0.27$  with SWB and  $0.28$  with age). We then regressed SWB upon age and the composite autonomy measure. The coefficient for age dropped from  $0.18$  to  $0.11$  in this analysis. We used Sobel's test (Sobel, 1982) to evaluate the significance of the indirect path from age to SWB, via the potential mediator. The indirect path was indeed significant ( $t = 5.4$ ,  $p < 0.01$ ), suggesting that in this sample age-related differences in autonomy could help to account for the age-related differences in SWB (Sheldon & Kasser, 2001).

## Brief discussion

Study 2 replicated the basic findings of Study 1, using a somewhat different conception of social duties and a somewhat different design. Specifically, in the worker and citizen roles, parents felt more autonomous (i.e. they felt more identified and intrinsic motivation, and less external and introjected motivation) than did their offspring, and they also felt more autonomous according to the aggregate or cross-role measure of relative autonomy. The same pattern of results emerged for the measure of perceived choice in performing the behaviours. Additionally, felt autonomy and choice were both associated with greater subjective well-being, consistent with SDT's postulate that autonomy is a psychological need that promotes thriving when it is satisfied (Deci & Ryan, 2000). Finally, in this

sample, chronological age was associated with SWB, and age differences in felt autonomy partially (but significantly) mediated the latter effect.

Notably, results concerning the 'child' role did not support our hypotheses. Mothers were no different from their offspring on either relative autonomy or felt choice in the child role, and fathers were actually significantly lower than their offspring on both measures. One possible explanation for this finding is that our middle-aged participants are beginning to have to take care of their own parents, who are becoming increasingly frail and dependent. This new care-taking function may be providing a significant challenge for the middle-aged parents, a duty they are struggling to internalize. The current data suggest that the mothers are better meeting this challenge, as might be expected given the assumption that mothers and fathers were socialized in an era in which female care-taking was more the norm. In short, a combination of the more difficult duties experienced by the parent sample within the child role, and also gender cohort effects, may explain the observed pattern. Obviously, however, these speculations require further research.

One limitation of Studies 1 and 2 is that both employed samples from the Midwestern region of the United States. Thus, it is unclear whether the results would generalize to people in other parts of the world. This question is of particular importance because cross-cultural psychologists have challenged SDT's claims that autonomy is a universal need that promotes SWB (Markus & Kitayama, 1994; Markus, Kitayama, & Heiman, 1996). Although there is now considerable published research rebutting this critique (see Deci & Ryan, 2000, for a review), we wished to examine the issue again, this time in the context of social duties.

### STUDY 3

Study 3 was conducted in Singapore, which is considered a collectivist culture by most cross-cultural scholars (Triandis, 2001). We returned to the methodology of Study 1, in which participants of a broad range of ages were questioned regarding their SWB and their motivation for common social duties. We again tested our two primary hypotheses—that chronological age would be associated with greater felt autonomy in performing duties, and that autonomy would be associated with SWB. Also, we planned to examine the association of age with SWB, and if one were found to again evaluate autonomy as a potential mediator of this relationship.

#### Method

##### *Participants and procedure*

Participants were 213 residents of Singapore, including 91 students enrolled in a business class at the National University of Singapore, and 122 adult participants recruited by some of the students. The initial data collection was administered in class. Twenty-two of the 91 students, who missed the original data collection or who desired extra research credits, were asked to give the questionnaire to at least five adults of their acquaintance, including at least one in each of the age categories of 25–40, 41–59, 60–75, and 76 or older. These students collected the completed questionnaires and returned them to the researchers.

The final sample ranged in age from 19 to 101, with a mean of 38 and a standard deviation of 19. One hundred and fourteen of the participants were male and 99 were female; 83 were married, 12 divorced, and 118 never married; and 3 were Caucasian, 183

were Chinese, 7 were Indian, 8 were Malay, and 12 were 'other'. The median level of education was 'college degree'.

### Measures

The two-page questionnaire was written in English, which is commonly spoken in Singapore and is also the language of instruction at the university. The questionnaire first asked participants to rate their well-being, using the same scales employed in Studies 1 and 2 (i.e. positive mood, negative mood, and life-satisfaction; alpha coefficients = 0.87, 0.86, and 0.84, respectively). Once again a single factor underlay the three measures (accounting for 54% of the variance), and thus we again created an aggregate SWB variable by standardizing the three measures and then subtracting negative mood from positive mood and life-satisfaction.

Next, participants were presented with three 'common behaviours'. We modified the list of duties from that used in Study 1 in order to derive an appropriate set of duties for a collectivist culture. The list of duties included 'Helping distant relatives', 'obeying authorities (e.g., teachers, parents, bosses)', and 'staying informed about political issues'. Again, we reasoned that these are obligations that adults of all ages are expected to fulfill. Participants rated why they perform each duty (when they do perform it), in terms of the same four reasons employed in Studies 1 and 2. External and introjected scores were again subtracted from identified and intrinsic scores to create a relative autonomy measure for each duty, and these variables were averaged across the three duties to obtain an aggregate relative autonomy measure (alpha = 0.62). To obtain a second measure of autonomy, we again asked participants to rate their typical experience when performing the behaviours, using a 1 (not at all my choice) to 5 (completely my choice) scale. An aggregate measure of choice was computed by summing across the three choice scores. Although coefficient alpha was only 0.31 for this three-item measure, we still employed it for comparison purposes with the first two studies.

## Results

### Preliminary analyses

As in Studies 1 and 2, we first examined within-subject differences in relative autonomy and choice for the three social duties (see Table 4), making no predictions. An ANOVA with type of duty as a repeated measure revealed significant differences for relative autonomy ( $F(2, 424) = 23.40, p < 0.01$ ; both 'helping distant relatives' and 'staying informed' felt more autonomous than 'obeying authorities', at  $p < 0.01$ ). A similar ANOVA using the

Table 4. Study 3: autonomy and choice scores, by type of duty

	Type of duty			
	Aggregate autonomy	Helping relatives	Obeying authorities	Staying informed
Autonomy	0.45 (2.88)	0.69 (3.12)	-0.48 (3.13)	1.10 (2.88)
Felt choice	3.42 (0.78)	3.36 (1.20)	3.34 (1.18)	3.61 (1.24)

Numbers in parentheses are standard deviations.

choice ratings revealed significant but smaller differences ( $F(4, 424) = 3.76, p < 0.05$ ; 'staying informed' was higher than the other two duties, at  $p < 0.05$ ).

Next, we examined the correlations between the relative autonomy and choice variables, as in Studies 1 and 2. Supporting our belief that these measures address the same underlying issues, these three correlations were positive and significant at the 0.01 level ( $r = 0.35$  for staying informed,  $r = 0.50$  for obeying authorities, and  $r = 0.51$  for helping distant relatives).

### Hypothesis tests

To test our first hypothesis, that chronological age would be associated with greater autonomy and choice, we conducted eight correlational analyses (four for relative autonomy and four for felt choice, including each of the three duties separately plus the aggregate measure). Table 5 presents the results. As can be seen, the association was positive and significant for all four of the relative autonomy measures. However, the association was significant for only one of the choice measures, namely helping distant relatives. The discrepancies regarding the 'choice' variables will be discussed below.

Next, we examined demographic variables, to ensure that these non-developmentally relevant factors do not account for the age effects. As in Study 1, the associations of age with relative autonomy and felt choice were not significantly different when participant marital status, gender, and education were partialled out via regression analyses, indicating that the effects are not reducible to participant differences on these variables. In addition, there was no interaction between chronological age and gender in predicting either aggregate autonomy or aggregate choice.

To test our second hypothesis, that relative autonomy and choice would be associated with SWB, we conducted eight more correlational analyses (four for relative autonomy and four for felt choice). As can be seen in Table 5, autonomy and choice were associated with significantly higher well-being in all eight cases.

Next, we evaluated the association between chronological age and SWB. The correlation was non-significant ( $r = -0.08$ ). Therefore, we could not evaluate the possibility that autonomy mediates between age and SWB.

Table 5. Study 3: associations of age and SWB with autonomy and choice

	Autonomy variables			
	Type of duty			
	Aggregate autonomy	Helping relatives	Obeying authorities	Staying informed
Age	0.22**	0.22**	0.23**	0.05
SWB	0.23**	0.14*	0.19**	0.20**
	Choice variables			
	Type of duty			
	Aggregate choice	Helping relatives	Obeying authorities	Staying informed
Age	0.03	0.16*	-0.02	-0.08
SWB	0.37**	0.15*	0.28**	0.29**

\* $p < 0.05$ , \*\* $p < 0.01$ .

### Brief discussion

Study 3 replicated the basic patterns of Studies 1 and 2, this time in a collectivist sample. Specifically, chronological age was again associated with greater relative autonomy in performing social duties, and relative autonomy and felt choice were again associated with SWB. These findings are significant because they help establish that the processes posited by SDT (Deci & Ryan, 2000) occur within non-Western as well as Western cultures. Similar to Study 1 and in contrast to Study 2, Study 3 found no association between age and SWB. Also similar to Study 1 and in contrast to Study 2, Study 3 found no gender difference in the association between chronological age and autonomy. Because Studies 1 and 3 assessed a wider range of ages over the lifespan, we tentatively propose that the association of age with autonomy does not vary consistently by gender.

One anomaly emerging in these data is that chronological age predicted only one of the four felt choice variables (although age predicted all four of the autonomy measures based directly on SDT). One possible explanation, based on the rapid changes in Singaporean society within the last generation (Tan, 2003), is that the older adults in the Singapore sample are more traditional or collectivistic than the younger adults, with a sense of having less choice in many of life's necessities. As suggested by the relative autonomy results, however, this does not mean that they have not internalized and accepted these necessities. Another possibility is that some participants may have been thinking of choice in objective terms (i.e. one has no choice in obeying certain authorities such as policemen or judges), making this single-item measure a less sensitive index of felt autonomy. Further research will be required to evaluate these possibilities.

## GENERAL DISCUSSION

In this research we sought to provide a new type of support for the idea that, more often than not, people continue to grow and develop across the lifespan (Erikson, 1963; Ryff, 1995; Sheldon & Kasser, 2001). Although psychosocial, existential, and organismic theories propose that this is so, other theorists have argued that there are no such increases, or that they boil down to self-serving temporal biases (Wilson & Ross, 2001). In order to further explore this issue we used measures of autonomy derived from self-determination theory (Deci & Ryan, 1991, 2000) and examined how well individuals of varying ages had internalized various social duties.

We found consistent support for our first primary hypothesis, namely that chronological age would be associated with experiential autonomy. In Study 1, older community members from the US felt greater relative autonomy (i.e. more intrinsic and identified motivation, and less external and introjected motivation) than younger persons for performing the social duties of tax-paying, voting, and tipping service people; they also felt a greater sense of choice in voting and tipping service people, compared with younger participants. In Study 2, parents felt more relative autonomy and more choice in playing their worker roles and their citizen roles, compared with their own offspring. In Study 3, older residents of Singapore felt greater relative autonomy than younger residents concerning the social duties of helping distant relatives, obeying authorities, and keeping informed about political events. Importantly, Study 3's findings suggest that feelings of autonomy increase with age in non-Western as well as Western cultures, as suggested by SDT's universalistic perspective upon human nature (Deci & Ryan, 2000).

We also found consistent support for our second primary hypothesis, that feeling autonomous about one's duties is associated with enhanced SWB. In all three studies, people who felt more autonomy for their social duties also reported greater SWB. Although the general association between relative autonomy and SWB is now well established (Deci & Ryan, 2000), the current research is the first to find the effect in the domain of social duties, which lie directly at the intersection of individual and society. In addition, this study adds to the growing literature supporting the argument by Deci and Ryan that autonomy is a universal need (Deci & Ryan, 2000), as autonomy was related to SWB in Singaporean as well as American adults.

We also evaluated the association of chronological age with SWB, as this association is sometimes found in the literature (Myers & Diener, 1995). There were no correlations between age and SWB in Studies 1 and 3. However such an association emerged in Study 2, the study comparing parents with their children. In that study, we were able to show that age-related differences in autonomy partially mediated the positive association between age and SWB. Although we cannot definitively explain why the correlation between age and well-being did not emerge in all three studies, it is worth pointing out that the parent sample (Study 2) included no very old participants (the oldest mother was 63 and the oldest father was 60, with the exception of one 85 year old father), whereas Studies 1 and 3 contained many more participants in their 60s, 70s, and beyond. Perhaps age is only associated with increasing SWB until late mid-life, at which point the association flattens. Although the age to SWB association was not the primary focus of the current article, obviously more research is needed on this topic (Argyle, 1999).

### **Broader issues and remaining questions**

#### *Explaining the link between age and autonomy*

Why do older persons feel greater autonomy in performing social duties? Although the present study does not directly address this question, several interesting possibilities can be suggested. First, older people may develop greater respect for social institutions, as they gain a greater appreciation of such institutions' roles in making life better for everyone. This greater respect may lead to a greater degree of internalization. Another reason why older people better 'own' their behaviour may be that they wrestle increasingly with moral and spiritual questions (i.e. 'ego-integrity' tasks; Erikson, 1963), which prompt them to take increased responsibility for their own choices. In other words, they may feel that failing to fully accept their obligations would bespeak a lack of integrity. Still another possibility is that older persons simply give in to the inevitability of 'death and taxes', feeling that 'I might as well do it, and do it wholeheartedly while I'm at it'. These and other possible process mediators of the age-to-autonomy association remain to be explored in future research.

#### *Limitations*

One limitation of these studies is that they employed only survey methodologies. Unfortunately, it is difficult to conduct experimental research upon personality processes (such as internalization) that are expected to change slowly (although see Deci, Eghrari, Patrick, & Leone (1994) or Sheldon, Arndt, & Houser-Marko (2003) for some experimental approaches). Fortunately, in this case we can be sure that the reverse causal arrow is incorrect—increasing autonomy definitely does not cause chronological aging (Argyle, 1999)! A second limitation of these studies is that they employed cross-sectional,



rather than longitudinal, methodologies. Thus we cannot be sure that the observed differences do not represent cohort, rather than developmental, effects. Unfortunately, given the relative recency of the SDT approach to measuring autonomy (first outlined by Ryan and Connell, 1989), it is not yet possible to examine these issues over the entire lifespan. A third limitation is that our studies relied on self-reports. Perhaps older persons merely want to believe that they are 'getting better' with age (Wilson & Ross, 2001), a desire that biases their reports. This possibility probably cannot be ruled out without using more indirect methodologies to measure autonomy and SWB, such as projective tests (deCharms & Plimpton, 1992), implicit association tests (Greenwald, McGhee, & Schwartz, 1998), or peer and family report (Sheldon & Houser-Marko, 2001). A fourth limitation is that we only assessed three duties or roles per study; future research should expand the range of duties considered.

## CONCLUSION

The current studies suggest that life-long movement towards greater autonomy and choice may be normative after all. Consistent with psychosocial, existential, and organismic theoretical perspectives, as people 'come of age', they also come to 'own their duties'. When they do so, both they and their societies benefit.

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