



# The conscientious retiree: The relationship between conscientiousness, retirement, and volunteering



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## ABSTRACT

The current study examined the relationship between conscientiousness, work status, and volunteering utilizing two large samples, the St. Louis Personality and Aging Network (SPAN) and the Health and Retirement Study (HRS). It was hypothesized that conscientious adults who were retired would be more likely to volunteer because, after retirement, they gain a substantial amount of free time, while losing an outlet for their industrious and achievement-striving tendencies. Cross-sectional and longitudinal analyses revealed that conscientious, retired individuals were more likely to volunteer than conscientious, working individuals. Further analyses revealed that facets of conscientiousness provide differential information from the general trait. These findings indicate that volunteering during retirement fills an important niche for high-striving, conscientious individuals.

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## 1. Introduction

Conscientious individuals are industrious, responsible, goal-oriented and able to control their impulses (Mike, Harris, Roberts, & Jackson, in press). These traits are especially useful in achievement-orientated domains such as school and work, where conscientiousness individuals utilize their skills to excel. In school settings, conscientiousness predicts better academic performance, independently of intelligence (Bratko, Chamorro-Premuzic, & Saks, 2006; Nofle & Robins, 2007; Poropat, 2009) and is also related to higher satisfaction with school (Lounsbury, Saudargas, Gibson, & Leong, 2005). In the work force, highly conscientious individuals are, again, more successful—in terms of both job advancement as well as salary (Barrick & Mount, 1991; Judge, Higgins, Thoresen, & Barrick, 1999; Ng, Eby, Sorensen, & Feldman, 2005; Roberts, Jackson, Duckworth, & Von Cullin, 2011). In addition, they tend to be more satisfied with their careers (Ng et al., 2005).

The success of conscientious individuals in educational and occupational domains reflects the investment they put into their pursuits. They are more likely to work hard towards their goals, to work long hours, and to persist after failures or setbacks (Jackson et al., 2010). In school, conscientious students have greater achievement motivations and put a greater amount of effort into

their work. (Chamorro-Premuzic & Furnham, 2003a, 2003b; De Feyter, Caers, Vigna, & Berings, 2012; Nofle & Robins, 2007; Paunonen & Ashton, 2001; Richardson & Abraham, 2009; Trautwein, Lüdtke, Roberts, Schnyder, & Niggli, 2009). After leaving school, conscientious individuals reinvest their energies and motivation through increased involvement and commitment to their careers (Hudson, Roberts, & Lodi-Smith, 2012; Spurk & Abele, 2010). As a result they are more likely to work overtime, and volunteer to do extra work (Jackson et al., 2010). Conscientious individuals are also more likely to agree with statements like they would continue to work even if they won the lottery (Roberts, Caspi, & Moffit, 2003), suggesting that highly conscientious individuals prefer having structured, goal-directed work to fill their time.

While the move from school to work is a natural transition where conscientious individuals can fruitfully redirect their industrious and high-achieving drives, their transition out of work and into retirement has been less explored (Löckenhoff, Terracciano, & Costa, 2009). What happens to highly conscientiousness individuals when they no longer have an achievement domain in which to invest? The current study proposes that volunteering serves as an outlet for conscientiousness individuals' preferences during the transition into retirement.

### 1.1. Conscientiousness and retirement

Retirement is a major life transition where individuals gain a substantial amount of free time, while potentially losing the meaning and purpose they derive from their work (Reis & Gold, 1993;

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Wang & Shi, 2013). For most, retirement is viewed positively—as a rewarding life stage where one is relieved from obligations and pressures and is free to pursue one's own interests (Rosenkoetter & Garris, 2001). Even so, retirement is a radical change from the career path, so much so that preretirement courses are offered to help those approaching retirement prepare for the transition (Reis & Gold, 1993; Rosenkoetter & Garris, 2001). And while most adjust to retirement with ease, not everyone experiences such a smooth transition. Issues with retirement may in part stem from the loss of challenge and purpose that is associated with one's career (Van Solinge & Henkens, 2008). Leaving a challenging job, for example, is related to less satisfaction in retirement (Van Solinge & Henkens, 2008). Though retired individuals do spend more time doing enjoyable activities compared to full-time employees, they also have less variety in their daily tasks, do less problem-solving, are less likely to learn new things, and have significantly fewer positive social interactions (Ross & Drentea, 1998). Some of these issues may be addressed by taking up new activities. For example, engaging in activities during retirement is linked to better physical and mental health, higher quality of life, and more successful aging (Kaskie, Imhof, Cavanaugh, & Culp, 2008; Potočník & Sonnentag, 2013; Wang & Shi, 2013). Volunteering specifically has been linked to a number of positive outcomes in retirement including lower rates of mortality, fewer illnesses, fewer functional impairments, and higher psychological well-being (Musick, Herzog, & House, 1999; Wang & Shi, 2013).

While engaging in activities seems to be beneficial to all retirees, it may be especially important for the highly conscientious, who likely desire more structured, goal-oriented activities with which to fill their time. In fact, conscientious individuals report having more aspirational motivations for retiring, such as wanting to pursue new opportunities and aspirations outside of work, versus retiring because they have reached the appropriate age or because they feel pressured to do so (Robinson, Demetre, & Corney, 2010). Some hypothesize that conscientiousness is related to proactive coping during retirement (Reis & Gold, 1993), and there is evidence that conscientious individuals do in fact cope better with retirement than those low on conscientiousness (MacLean, 1983; Robinson et al., 2010). Similarly to conscientious individuals' enjoyment of school and work, so too is conscientiousness related to greater enjoyment of retirement (MacLean, 1983) and greater overall life satisfaction during this time (Robinson et al., 2010).

### 1.2. Conscientiousness and volunteering

Few studies have investigated what aspirations conscientious individuals have or what activities they use to fill their newfound free time during retirement. Do conscientious individuals reroute their effort and motivations into new, meaningful activities? Though this time may be spent in a variety of ways (increasing time spent on leisure activities, pursuing hobbies, traveling, or spending time with friends and family) such activities may not completely fulfill underlying drives to set goals, work hard, and be successful. One activity, volunteering, can be thought to strongly resemble employment. Volunteering can be defined as the “long-term, planned, prosocial behaviors that benefit strangers and occur within an organizational setting” (Penner, 2002, p. 448). Often, volunteers have to commit to a certain number of hours and adhere to a schedule, they have projects and/or tasks they are accountable for, and, unlike many other hobbies, volunteering presents the opportunity to work for a larger cause (Waikayi, Fearon, Morris, & McLaughlin, 2012). As individuals' roles in work and family settings change, volunteering offers the additional benefit of providing a new role (civic engagement) and domain (one's community) to step into in order to help define one's identity as a retiree (Kaskie et al., 2008).

Volunteering is an activity that could plausibly smooth the transition from work to retirement. Indeed, some hypothesize that retirees will fill their newfound free time volunteering, and that volunteering may replace benefits previously derived from careers (Wilson, 2000). However, while retirees have increased time to volunteer compared to their working selves, retirement alone does not result in increased levels of volunteering (Caro & Bass, 1997; Herzog, Kahn, Morgan, Jackson, & Antonucci, 1989). Perhaps this lack of findings is due to the fact that not all individuals have high work drives or high need for achievement. Some people work hard their entire careers and anticipate a time when they no longer have pressing obligations. Instead, they look forward to relaxing on a sandy beach. Others, in contrast, may feel like a part of their identity is missing when not working towards higher-order goals and engaging in tasks to keep busy. Level of conscientiousness, therefore, may be a key component in who chooses to volunteer once retired.

The relationship between the Big Five personality traits and volunteering has not been researched extensively, and the relationship between conscientiousness and volunteering has been examined even less. Existing literature has primarily examined the roles of extraversion and agreeableness in volunteering, focusing on social and prosocial motivations (Carlo, Okun, Knight, & de Guzman, 2005; Ozer & Benet-Martínez, 2006). Extraversion's relationship with volunteering may be predominantly driven by involvement in clubs, organizations, or church due to high sociability and energy levels (Okun, Pugliese, & Rook, 2007). Volunteering also fits very naturally with the prosocial drives and motives of agreeable individuals (King, Jackson, Morrow-Howell, & Oltmanns, 2014), as volunteering organizations often aim to provide assistance to others (Wilson, 2000).

In addition to being motivated by prosocial values and social drives, people may volunteer to learn new skills, enhance their careers, or to focus on personal development (Clary & Snyder, 1999; Waikayi et al., 2012). As such, volunteering seems like a natural outlet for conscientious traits. Indeed, there is preliminary evidence to suggest that conscientiousness may play a role in whether individuals choose to volunteer. In a study that examined broad behaviors associated with conscientiousness, the highly conscientious reported being more likely to volunteer (Jackson et al., 2010). In another study that examined the relationship between extraversion, agreeableness, prosocial motives, and volunteering, conscientiousness was positively correlated with both prosocial motives and volunteering. However, these relationships were no longer significant in the final models that included all Big Five traits, motives, and gender (Carlo, Okun, Knight, & Guzman, 2005). This indicates that conscientiousness likely does influence volunteering, but that that relationship is not as straightforward as that of extraversion or agreeableness. Instead, conscientiousness' unique role may be better determined if one's circumstances, such as work status, are taken into account.

### 1.3. The facets of conscientiousness

Conscientiousness is a broad personality trait that consists of behaviors and motivations that generally relate to being responsible, organized, and hardworking (Mike, Harris, Roberts, & Jackson J.J., in press; Roberts, Jackson, Fayard, Edmonds, & Meints, 2009 (chap. 25)). However, the relative strength of each facet of conscientiousness may differ across individuals; someone may be very hardworking, but not very organized, or highly achievement striving, but not concerned about societal rules. As a result, it can be beneficial to investigate the effects of personality at a facet level (Jackson et al., 2009; Paunonen, 1998). For example, the lower order facets of achievement striving and self-discipline have been found to have strong relationships with academic success, while

traits such as order and dutifulness are only weakly related (Gray & Watson, 2002; Nofle & Robins, 2007). Thus, it is likely that if conscientiousness is associated with a greater likelihood to volunteer, the achievement striving facet drives this association, rather than the orderliness facet.

#### 1.4. The present studies

We hypothesize that conscientious individuals may have clear motivations for volunteering during retirement, when individuals gain leisure time while simultaneously losing the drive and purpose they potentially derive from their careers. Two longitudinal studies (SPAN and HRS) consisting of adults 50 and up are used to test the relationship between conscientiousness, work status and volunteering. We hypothesize that conscientious retirees will be more likely to volunteer than their working counterparts. In addition, longitudinal and facet level associations are also examined. First, in Study 1, we examine which facets predict volunteering based on work status to clarify what components of conscientiousness are responsible for the association. We hypothesize that achievement striving will be an important predictor of volunteering, given the relationship between achievement striving and occupational outcomes (Christopher, Zabel, & Jones, 2008). In study 2, we test the relationship between conscientiousness, work status, and volunteering more stringently by examining the relationship longitudinally. This allows us to account for any influence volunteering may have on one's personality.

## 2. Study 1

Study 1 utilized data from the St. Louis Personality and Aging Network (SPAN) study, which examines personality and health among a representative sample of older adults in St. Louis (Oltmanns, Rodrigues, Weinstein, & Gleason, 2014). The SPAN study targeted individuals between the ages of 55 and 64 and gathered a variety of information, including information on personality, work status, and volunteering behaviors.

### 2.1. Method

#### 2.1.1. Participants

SPAN participants were 1630 individuals (55% female) living in the St. Louis area. Participants had a mean age of 59.53 years ( $SD = 2.70$  years). Approximately 65% of participants were Caucasian, 33% were black or African American, and 2% reported being from other ethnicities. Three percent of participants reported less than a high school education, 29% completed a high school degree, while 68% reported completing higher education (26% Bachelor's degree, 19% master's degree, 7% doctoral degree). Further descriptive statistics can be found in Table 1.

### 2.2. Measures

#### 2.2.1. Personality

The Big Five traits (extraversion, agreeableness, conscientiousness, neuroticism, and openness to experience) were assessed using the self-report NEO-PI-R (Costa & McCrae, 1992). Participants completed 240-items rated on a 5-point Likert scale from 0 (strongly disagree) to 4 (strongly agree). The alpha reliabilities were .89 for conscientiousness, .88 for extraversion, .86 for agreeableness, .92 for neuroticism, and .88 for openness to experience. Personality means and standard deviations can be found in Table 2. The NEO-PI-R measures six facets of conscientiousness: responsibility (Cronbach's  $\alpha = .69$ ), order (.65), dutifulness (.59), achievement striving (.68), self-discipline (.79), and deliberation (.70).

**Table 1**  
Descriptive statistics for covariates.

SPAN		HRS	
<i>Age</i>			
Mean	59.53	Mean	71.92
SD	2.7	SD	10.37
<i>Gender</i>			
Male	45%	Male	46%
Female	55%	Female	54%
<i>Education level</i>			
<High School	3%	No Degree	15%
GED	2%	GED	4%
High School	27%	High School	50%
2-yr College Degree	16%	2-yr College Degree	5%
Bachelor's Degree	26%	4-yr College Degree	14%
Advanced Degree	26%	Master's Degree	8%
		Professional Degree	3%
<i>Work status</i>			
		2006/2008	
Retired	22%	Retired	59%
Working	63%	Working	39%
Not employed	15%	Unemployed	2%
		2008/2010	
		Retired	63%
		Working	34%
		Unemployed	2%
<i>Volunteering</i>			
		2006/2008	
Yes	40%	Yes	38%
No	60%	No	62%
		2008/2010	
		Yes	14%
		No	86%

**Table 2**  
Variable means and standard deviations.

	SPAN		HRS	
	M	SD	M	SD
Extraversion	2.25	0.38	3.19	0.56
Agreeableness	2.70	0.32	3.52	0.47
Neuroticism	1.50	0.43	2.02	0.60
Openness	2.34	0.38	2.96	0.55
Conscientiousness	2.57	0.36	3.38	0.47

#### 2.2.2. Work status

Participants answered a series of questions regarding their current work status, indicating whether they were retired, whether they were currently employed, and if they worked full time or part time. These three variables were collapsed into a single variable indicating whether the participant was retired ( $N = 345$ ), working ( $N = 986$ ), or not employed ( $N = 241$ ). Individuals who said that they were retired and that they also continued to work were categorized as working. This variable was dummy coded so that working and individuals currently not employed were compared against those who were retired.

#### 2.2.3. Volunteering

Participants were asked whether they currently participated in any community service or volunteer activities. Approximately 40% of participants ( $N = 644$ ) reported volunteering. These participants were subsequently asked how many organizations they volunteered for and how many hours a week they volunteered at each organization. Their hours per week were summed across organizations and then combined with the dichotomous volunteering question for a new variable that indicated amount of time spent volunteering on a scale, starting at 0 h. A log of the variable was performed, due to the large proportion of individuals who reported

not volunteering. Two individuals reported volunteering 80 h and 103 h per week and were dropped from analysis.

### 2.3. Analyses

Binary logistic regression was used to analyze the relationship between conscientiousness and volunteering. Estimates in the text and tables are given in odds ratios. However, for ease of interpretation, log-odds were converted into probabilities for the figures. Probabilities can be derived from log-odds by taking the odds divided by the odds plus one.

A series of increasingly stringent models were run. First, we examined if conscientiousness predicted whether individuals chose to volunteer. Next, the other Big Five traits were added for a more thorough test of conscientiousness' role in volunteering. Finally, we examined the interaction between conscientiousness and work status predicting volunteering. In order to examine whether the facets of conscientiousness differentially predicted volunteering, a series of models were run with each facet individually using the other Big Five traits as covariates. Missing data were dealt with using pairwise deletion. Age, gender, and education were used as covariates, as past studies have found them to be associated with volunteering (Kosek, 1995; Penner, 2002; Schmitt, Voracek, Realo, & Allik, 2008; Wilson, 2000).

In order to determine the approximate power to detect an interaction effect in Study 1, simulations were run in *R*. *N* was set at 1600, alpha was set at .05, and simulations for both small and medium effect sizes were run (Cohen, 1992). Cohen's *d* was converted to an odds ratio by taking the exponent of  $d^2 \pi / \sqrt{3}$ . Simulating the relationship between volunteering, conscientiousness, and work status 10,000 times using a small effect size resulted in the ability to obtain a significant result in 19% with a small effect size and 59% for a medium effect size.

## 3. Results

### 3.1. Do conscientious individuals volunteer more in retirement?

Initial analyses indicated age was not a significant predictor of volunteering ( $OR = 1.01, p = .48, 95\% CI [.98, 1.05]$ ). However, age was retained in analyses for more stringent tests. Highly educated individuals and females were more likely to volunteer ( $OR = 1.45, p < .05, 95\% CI [1.34, 1.57]$ ,  $OR = 1.32, p < .05, 95\% CI [1.08, 1.63]$ ). Retired individuals were compared against full time workers and those who were unemployed. There was not a significant difference between retired individuals and working individuals ( $OR = 1.09, p = .49, 95\% CI [.85, 1.40]$ ), though unemployed individuals volunteered significantly less than retired individuals ( $OR = .64, p = .01, 95\% CI [.45, .90]$ ).

First, we tested conscientiousness as a predictor of volunteering while controlling for age, education level, and gender. Results are displayed in Table 3. Higher levels of conscientiousness predicted a higher likelihood of volunteering ( $OR = 1.43, p < .05, 95\% CI [1.06, 1.93]$ ). The other Big Five traits were then added to better test the unique predictive validity of conscientiousness, accounting for any shared variance between traits. Here, conscientiousness was no longer a significant predictor ( $OR = .80, p = .28, 95\% CI [.54, 1.20]$ ). However, in line with previous findings, extraversion and agreeableness significantly predicted volunteering ( $OR = 2.18, p < .05, 95\% CI [1.54, 3.10]$ ,  $OR = 1.79, p < .05, 95\% CI [1.20, 2.66]$ ). Neuroticism and openness were not significant predictors ( $OR = .80, p = .21, 95\% CI [.57, 1.13]$ ;  $OR = .85, p = .35, 95\% CI [.61, 1.19]$ ).

Next, we tested whether work status influenced the relationship between conscientiousness and volunteer status by adding

their interaction terms to the model (Table 3, Model 3). Age, gender, education, and the other Big Five traits were retained as covariates. A significant conscientiousness by work status interaction emerged. Compared to people who were retired, conscientious individuals who were working were significantly less likely to volunteer ( $OR = .33, p = .02, 95\% CI [.13, .80]$ ). As seen in Fig. 1, as conscientiousness increased across retired individuals, they became more likely to volunteer, while working individuals' odds of volunteering increased much more slowly as a function of conscientiousness. This relationship was preserved when the model included no covariates ( $OR = .47, p = .06, 95\% CI [.21, 1.02]$ ), as well as when tested with hours spent volunteering as the DV ( $b = -.38, p < .05, 95\% CI [-.70, -.06]$ ). The relationship between conscientiousness and volunteering did not differ across the unemployed group and the retired group ( $OR = .96, p = .77, 95\% CI [.76, 1.23]$ ).

Next, we examined whether any of the other Big Five traits interacted with work status to predict volunteering. The other Big Five traits were retained as covariates in each analysis. While agreeableness and extraversion had both positively predicted volunteering, neither interacted with work status to predict volunteering ( $OR = .77, p = .59, 95\% CI [.30, 1.95]$ ;  $OR = .60, p = .21, 95\% CI [.27, 1.30]$ ). Similarly, retired and working groups did not differ in their like likelihood to volunteer as a function of neuroticism or openness ( $OR = 2.06, p = .06, 95\% CI [.98, 4.44]$ ;  $OR = 1.10, p = .81, 95\% CI [.50, 2.40]$ ).

### 3.2. Are the facets of conscientiousness important when predicting volunteering?

When examining the facets of conscientiousness, no single facet demonstrated a main effect. However, the facet of deliberation was a marginally significant, negative predictor of volunteering ( $OR = .78, p = .06, 95\% CI [.60, 1.01]$ ), opposite the direction of the other facets and overall conscientiousness. Next, the facets of conscientiousness were tested for an interaction with work status predicting volunteering. Only achievement striving significantly interacted with work status to predict volunteering, though dutifulness, orderliness, and self-discipline demonstrated relationships in the same direction and all had *p*-values less than .10. Upholding the pattern found at the general trait level, achievement striving individuals who were working were less likely to volunteer than achievement striving individuals who were retired ( $OR = .45, p < .05, 95\% CI [.24, .82]$ ). There was no difference in the relationship between achievement striving and volunteering between retired and unemployed achievement striving groups ( $OR = 1.08, p = .85, 95\% CI [.47, 2.51]$ ). Thus, it appears that achievement striving component is the facet most responsible for the interaction between work status and volunteering.

## 4. Study 1: Summary

Analyses revealed that conscientiousness was an important predictor of volunteering: conscientious, retired individuals were more likely to volunteer than conscientious, working individuals, even when controlling for other Big Five traits. As for the other Big Five traits, only agreeableness and extraversion positively predicted volunteering. However, neither of these traits' predictions varied by work status.

When examining the relationship between conscientiousness and volunteering at the facet level, findings supported our prediction that achievement striving would be a particularly important component of whether individuals chose to volunteer. Indeed, those high in achievement striving who were currently retired were more likely to volunteer than those who were high in achievement striving and currently working. No other facets

**Table 3**  
SPAN logistic regression models predicting volunteering.

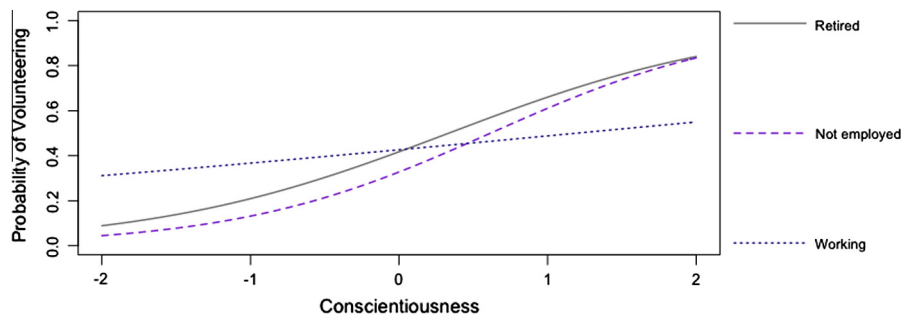
Variable	Model 1		Model 2		Model 3	
	B	Odds [95% CI]	B	Odds [95% CI]	B	Odds [95% CI]
Age	.01	1.01 [.98, 1.05]	.01	1.01 [.97, 1.06]	0	1.00 [.96, 1.05]
Gender	.39*	1.48 [1.20, 1.84]	.31	1.37 [1.07, 1.75]	.35*	1.42 [1.11, 1.82]
Education level	.35*	1.42 [1.31, 1.55]	.38*	1.46 [1.32, 1.61]	.37*	1.45 [1.31, 1.61]
Conscientiousness	.36*	1.43 [1.06, 1.94]	-.22	.80 [.54, 1.20]	.49	1.63 [.73, 3.79]
Extraversion			.93*	2.53 [1.76, 3.65]	.97*	2.65 [1.84, 3.84]
Agreeableness			.56*	1.75 [1.16, 2.63]	.58*	1.78 [1.18, 2.70]
Neuroticism			-.22	.80 [.57, 1.13]	-.22	.80 [.56, 1.14]
Openness			-.16	.85 [.61, 1.19]	-.16	.85 [.61, 1.20]
Working group compared to retired group					-.20	.82 [.60, 1.12]
Not employed group compared to retired group					-.33	.72 [.47, 1.09]
Conscientious × working dummy variable					-1.11*	.33 [.13, .80]
Conscientious × not employed dummy variable					.03	1.03 [.31, 3.51]

Model 1: NEO-PI-R conscientiousness with age, gender, and level of education,  $N = 1502$ .

Model 2: NEO-PI-R conscientiousness with age, gender, level of education, and other Big Five traits,  $N = 1333$ .

Model 3: NEO-PI-R conscientiousness and work status interaction with all controls,  $N = 1307$ .

\*  $p < .05$ .



**Fig. 1.** SPAN conscientiousness and work status interaction predicting volunteering.

interacted significantly with work status to predict volunteering, though a number of them demonstrated a similar trend as overall conscientiousness.

## 5. Study 2

We sought to replicate the conscientiousness by retirement interaction in another large sample, the Health and Retirement Study (HRS), using a different measure of personality traits. The HRS is an ongoing, longitudinal panel study, started in 1992 that targets individuals age 50 and up (Juster & Suzman, 1995; Roberts et al., 2011). Using longitudinal data allowed us to expand our analyses from Study 1 and further test the relationship between conscientiousness, work status, and volunteering by examining the relationship across time. The longitudinal analyses allows a stronger test of the association between conscientiousness and volunteering by ruling out any influence volunteering may have on personality (i.e., reverse causality), by only examining individuals who did not volunteer at an earlier time point. Thus Study 2 addressed whether conscientious individuals were more likely to start volunteering while retired compared to when working.

### 5.1. Method

#### 5.1.1. Participants

In 2006, a personality questionnaire was introduced as part of a larger psychosocial questionnaire. This questionnaire was administered to 50% of randomly selected participants and was completed by 90% of those individuals. In 2008, the questionnaire was administered to the other half of participants and was completed by approximately 89% of those individuals. Because participants

completed the personality questionnaire at different time points, responses for personality, work status, and volunteering were collapsed across 2006 and 2008. These scores served as Time 1 and were used for cross-sectional analyses. Participants also completed information on their current volunteering and work status in 2008 and 2010. For the longitudinal analyses, the 2008 variables served as Time 2 for individuals who had originally completed conscientiousness measures in 2006, while the 2010 scores served as Time 2 for individuals who had completed conscientiousness measures in 2008. For cross-sectional analyses, the total number of individuals who completed information on conscientiousness, volunteering, and reported that they were working, unemployed, or retired was 11,492. For longitudinal analyses, data was further restricted to only include individuals who did not volunteer at Time 1. The total number of individuals who fulfilled these requirements was 5371.

The average age of participants included in analyses was 71.92 years ( $SD = 10.37$ ), comprised of slightly more females than males (54% female). Approximately 85% of participants were Caucasian, 11% were black or African American, and 4% reported being from other ethnicities. The majority of participants completed some type of degree: 4% had their GED, 50% had completed high school, 5% completed a 2-year degree, 14% had a 4-year degree, 8% had a master's degree, and 3% had a professional degree, while only 15% reported having no degree. Age, gender, and level of education were used as covariates unless otherwise noted. Further descriptive statistics can be found in Table 1.

### 5.2. Measures

#### 5.2.1. Personality

The Big Five personality traits were assessed using the Midlife Development Inventory (MIDI) Personality Scales (Lachman &

Weaver, 1997). Participants rated 26 adjectives on how well they described the participant from 1 (a lot) to 4 (not at all). Conscientiousness was assessed using five adjectives: organized, responsible, hardworking, careless, and thorough. The alpha reliabilities were .66 for conscientiousness, .75 for extraversion, .78 for agreeableness, .70 for neuroticism, and .79 for openness to experience. Personality means and standard deviations can be found in Table 2.

### 5.2.2. Work status

Participants completed one variable indicating their current work status. Levels of the work variable included working now, unemployed and looking for work, sick or on leave, disabled, retired, homemaker, and other. Only those who were currently working, unemployed, or retired were included in analyses. For cross-sectional analyses, 4499 individuals reported working, 6759 reported being retired, and 234 reported that they were unemployed. For longitudinal analyses, 1831 individuals reported working, 3410 reported being retired, and 130 reported that they were unemployed. In line with Study 1, the working and unemployed groups were compared against the retired group.

### 5.2.3. Volunteering

Participants were asked whether they had spent any time in the past year volunteering. If participants indicated that they volunteered, they were subsequently asked three separate questions regarding how many hours they volunteered: did they volunteer less, about, or more than 50, 100, or 200 h in the past twelve months? These three questions were combined with the dichotomous volunteering variable so that responses reflected whether participants had not volunteered (0 h), volunteered less than 50 h, about 50 h, between 50 and 100 h, about 100 h, between 100 and 200 h, or more than 200 h. Consistent with Study 1 the resulting continuous variable was logged. For cross-sectional analyses, 7095 individuals reported that they did not volunteer, while 4397 did. For longitudinal analyses, 4639 individuals reported that they did not volunteer at Time 2, while 732 reported that they had begun volunteering.

## 5.3. Analyses

### 5.3.1. Do conscientious individuals volunteer more in retirement?

Analyses and models mirrored those in Study 1. First, volunteering was regressed onto conscientiousness, age, gender, and education. Next, the remaining Big Five traits were added. Finally, the interaction term between conscientiousness and work status was tested. The remaining Big Five traits were also tested.

### 5.3.2. Does conscientiousness predict whether individuals start volunteering?

We wanted to test whether the conscientiousness by work interaction upheld longitudinally and predicted volunteering from Time 1 to Time 2. Data were trimmed to include only those who reported they did not volunteer at Time 1. Consequently, those who reported volunteering at Time 2 represented individuals who had newly started volunteering since the last time point. This allowed us to test whether the interaction predicted if individuals were more likely to start volunteering between Time 1 to Time 2 and control for any influence volunteering may have on personality.

Power simulations for small and medium effect sizes with an  $N$  of 11,000 estimated power to be .97 with a small effect size and over .99 for a medium effect size. For the longitudinal analyses, using an  $N$  of 5000, power was estimated to be .76 for a small effect and over .99 for a medium effect size.

## 6. Results

### 6.1. Do conscientious individuals volunteer more in retirement?

Being female ( $OR = 1.28, p < .05, 95\% CI [1.19, 1.38]$ ) and more highly educated ( $OR = 1.39, p < .05, 95\% CI [1.36, 1.43]$ ) were again related to higher probability of volunteering. In the HRS, age was negatively related to volunteering, though the relationship was modest ( $OR = .98, p < .05, 95\% CI [.98, .99]$ ). Working individuals were more likely to volunteer than their retired counterparts ( $OR = 1.25, p < .05, 95\% CI [1.15, 1.35]$ ), but unemployed and retired groups were not significantly different from one another ( $OR = .74, p = .09, 95\% CI [.53, 1.04]$ ).

First, conscientiousness was tested as a predictor of volunteering while controlling for age, gender, and education. Results are displayed in Table 4. Higher levels of conscientiousness were related to a higher likelihood of volunteering ( $OR = 1.36, p < .05, 95\% CI [1.24, 1.49]$ ), though this relationship was no longer significant when the other Big Five traits were added to the model ( $OR = .96, p = .40, 95\% CI [.86, 1.06]$ ). In line with past findings, highly extraverted and highly agreeable individuals were more likely to volunteer ( $OR = 1.65, p < .05, 95\% CI [1.49, 1.83]$ ;  $OR = 1.33, p < .05, 95\% CI [1.19, 1.50]$ ). Furthermore, neuroticism was negatively related to volunteering ( $OR = .76, p < .05, 95\% CI [.71, .82]$ ), as was openness ( $OR = .90, p < .05, 95\% CI [.81, .99]$ ).

Next, the interactions between working status and conscientiousness were added to the model. Compared to people who were retired, conscientious individuals who were working were significantly less likely to volunteer ( $OR = .58, p < .05, 95\% CI [.48, .71]$ ). As seen in Fig. 2, a similar pattern emerged as in study 1, wherein the odds of volunteering increased quickly at higher levels of conscientiousness in the retired group, but increased more slowly at higher levels of conscientiousness in the working group. This relationship was preserved when the model included no covariates ( $OR = .61, p < .05, 95\% CI [.51, .73]$ ) and when predicting total hours volunteered ( $b = -.32, p < .05, 95\% CI [-.46, -.18]$ ). The relationship between conscientiousness and volunteering did not differ across the retired group and the unemployed group ( $OR = .84, p = .68, 95\% CI [.38, 1.94]$ ).

Next, we examined whether the other Big Five traits also interacted with work status to predict volunteering. The remaining Big Five traits were retained as covariates in each analysis. Although agreeableness and extraversion positively predicted volunteering (Table 4), neither demonstrated an interaction by work status ( $OR = .59, p = .16, 95\% CI [.28, 1.27]$ ;  $OR = .70, p = .28, 95\% CI [.74, 1.02]$ ). Similarly, though neuroticism and openness had both negatively predicted volunteering, neither interacted with work status to predict volunteering ( $OR = 1.13, p = .09, 95\% CI [.98, 1.31]$ ;  $OR = 1.04, p = .90, 95\% CI [.59, 1.75]$ ).

### 6.2. Does conscientiousness predict whether individuals start volunteering?

First, the Time 2 volunteering variable was regressed onto the conscientiousness scores from Time 1, while controlling for age, gender, and education. Once again, conscientiousness predicted volunteering on its own ( $OR = 1.28, p < .05, 95\% CI [1.11, 1.49]$ ), but not when all Big Five traits were analyzed together ( $OR = 1.04, p = .69, 95\% CI [.87, 1.24]$ ). With all Big Five traits included in the model, individuals high on extraversion were more likely to start volunteering during the two years after Time 1 ( $OR = 1.38, p < .05, 95\% CI [1.16, 1.64]$ ), while highly neurotic individuals were less likely to start volunteering ( $OR = .88, p < .05, 95\% CI [.78, .99]$ ).

**Table 4**  
HRS: logistic regression models predicting volunteering.

Variable	Model 1		Model 2		Model 3		Model 4	
	B	Odds [95% CI]	B	Odds [95% CI]	B	Odds [95% CI]	B	Odds [95% CI]
Birth year	.01*	1.01 [1.00, 1.01]	.01*	1.01 [1.01, 1.01]	.01*	1.01 [1.01, 1.02]	.01*	1.02 [1.00, 1.03]
Gender	.27*	1.30 [1.20, 1.41]	.22*	1.25 [1.15, 1.36]	.23*	1.26 [1.15, 1.37]	.21*	1.23 [1.04, 1.47]
Education Level	.32*	1.38 [1.34, 1.42]	.34*	1.40 [1.36, 1.44]	.34*	1.41 [1.36, 1.45]	.24*	1.28 [1.21, 1.35]
Conscientiousness	.31*	1.36 [1.25, 1.49]	-.05	.96 [.86, 1.06]	.15*	1.16 [1.02, 1.32]	.25	1.28 [.99, 1.66]
Extraversion			.50*	1.65 [1.49, 1.83]	.49*	1.64 [1.48, 1.82]	.29*	1.34 [1.10, 1.63]
Agreeableness			.29*	1.33 [1.19, 1.50]	.29*	1.33 [1.18, 1.50]	0.15	1.16 [.93, 1.45]
Neuroticism			-.27*	.76 [.71, .82]	-.27*	.76 [.71, .82]	-.13	.88 [.76, 1.01]
Openness			-.10*	.90 [.82, .99]	-.11*	.90 [.81, .99]	-.10	.91 [.75, 1.10]
Working group compared to retired group					-.03	.97 [.87, 1.08]	.10	1.10 [.89, 1.36]
Not employed group compared to retired group					-.45*	.64 [.44, .92]	.04	1.04 [.59, 1.75]
Conscientious × working dummy variable					-.54*	.58 [.48, .71]	-.75*	.47 [.32, .69]
Conscientious × not employed dummy variable					-.17	.84 [.38, 1.94]	-.16	.85 [.28, 2.94]

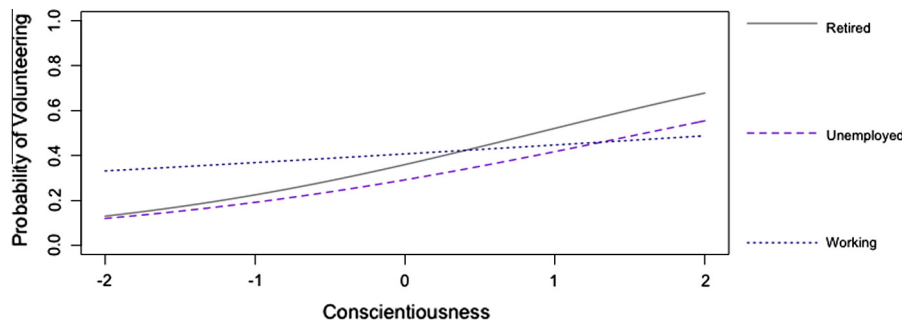
Model 1: MIDI conscientiousness with age, gender, and level of education,  $N = 11,360$ .

Model 2: MIDI conscientiousness with age, gender, level of education, and other Big Five traits,  $N = 10,682$ .

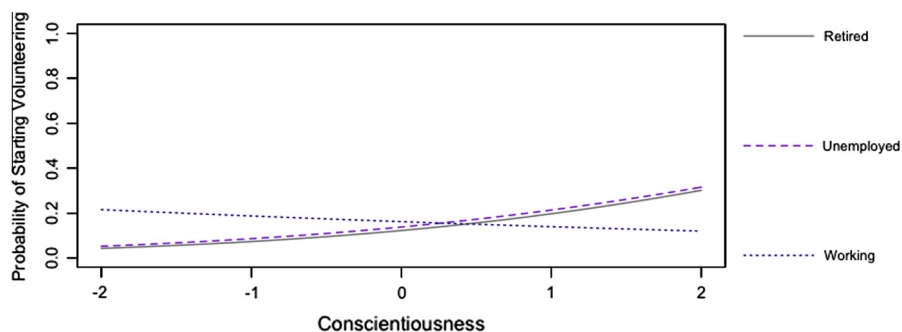
Model 3: MIDI conscientiousness and work status interaction with all controls,  $N = 10,682$ .

Model 4: MIDI conscientiousness time 1 and work status time 2 predicting volunteering time 2 with all controls,  $N = 5017$ .

\*  $p < .05$ .



**Fig. 2.** HRS conscientiousness and work status interaction predicting volunteering.



**Fig. 3.** HRS conscientiousness and work status interaction predicting volunteering longitudinally.

Next, volunteering scores for Time 2 were regressed onto the interaction term between conscientiousness Time 1 and work status Time 2. Work status again proved to be an important component in conscientiousness' relationship with volunteering. Results are displayed in Table 4. Individuals who reported being high on conscientiousness at Time 1 were less likely to begin volunteering at Time 2 if they were currently working versus if they were retired ( $OR = .47, p < .05, 95\% CI [.32, .69]$ ) (see Fig. 3). This interaction replicated when examining the logged continuous measure of number of hours spent volunteering ( $b = -.18, p < .05, 95\% CI [-.31, -.05]$ ). Unemployed and retired groups were not significantly different from one another ( $OR = .85, p = .78, 95\% CI [.28, 2.94]$ ).

The remaining Big Five traits were also tested for an interaction with work status longitudinally. Only openness demonstrated a

positive interaction, such that open, working individuals were less likely to begin volunteering than open, retired individuals ( $OR = .67, p < .05, 95\% CI [.48, .91]$ ).

## 7. Study 2 Summary

Study 2 replicated the findings from Study 1 indicating that conscientious, retired individuals were more likely to volunteer than conscientious, working individuals. Of the Big Five traits, conscientiousness was the only trait to replicate the form of interaction across the two samples, as well as replicate across the cross-sectional and longitudinal analyses. Not only were conscientious, retired individuals more likely to volunteer than

their working counterparts, they were also more likely to start volunteering two years down the line. These findings indicate that the relationship between conscientiousness and volunteering cannot be attributed to reverse causality (i.e., the act of volunteering may influence one's perceived levels of conscientiousness).

## 8. General discussion

Conscientiousness's role in volunteering has not been extensively examined in past research, though conscientious individuals may have clear motivations for volunteering. Similarly, while there is evidence to suggest conscientious individuals do well in retirement (MacLean, 1983; Reis & Gold, 1993; Robinson et al., 2010), the reasons why they flourish have not been systematically examined. The current study found that conscientious individuals were more likely to volunteer if they were retired, whereas conscientiousness individuals who were still working were less likely to volunteer in comparison. These findings held across two samples, as well as longitudinally. Furthermore, analyses revealed that achievement striving might be the driving force behind this relationship, while facets like deliberation and orderliness may be less important. Overall, the study suggests a number of important implications about conscientiousness during retirement and the meaning of volunteering.

Our findings indicate that the utility of volunteering likely changes for conscientiousness individuals once they enter retirement. According to social investment theory, people form their identities through commitment to their social roles (Roberts, Wood, & Smith, 2005). In young to middle adulthood, people transition from the role of a student to one of a worker and use these roles to help guide their goals and time commitments. During this time, conscientious individuals invest heavily in their careers (Lodi-Smith & Roberts, 2007) and therefore might not have much time or resources to devote to volunteering or other outside interests. When individuals retire, however, they lose the occupational role, which, in part, yields a loss of an important aspect of their identity. A smooth transition into retirement is likely accomplished through replacing the occupational role with a new role that offers many of the same features as work. Focusing on family life, hobbies, or giving back to society could each fill up time in retirement and add meaning to one's life. For example, previous evidence suggest that as one's work role ends, family and community roles and commitments may become more important (Wang & Shi, 2013). It is likely that conscientious individuals view volunteering differently in retirement versus during their careers, as volunteering would no longer be seen as a commitment that they do not have time for, but rather as a type of meaningful activity that can help with the transition into retirement.

The current study also demonstrates that facets offer important information when predicting outcomes. Surprisingly, deliberation was negatively associated with volunteering, opposite the direction of the broad trait of conscientiousness. While conscientious individuals are high achieving and proactive, they also think through their decisions and inhibit their impulses. Facets such as deliberation represent this more thoughtful, cautious side of conscientiousness (Mike et al., in press; Roberts et al., 2009 (chap. 25)). It is possible that those high on deliberation are more hesitant to take on new activities or deliberate on them so long that they no longer seem like appealing options. Facets also proved important when examining the interaction between work status and conscientiousness. In line with our initial predictions, achievement striving upheld the interaction found at the general trait level, while other facets did not. These findings suggest that wanting to excel and to have goal-oriented, structured activities is primarily what drives conscientious individuals to seek out volunteering

opportunities in retirement. Previous research has indicated that facets have the potential to predict in an opposing direction of their overall trait (Chen, Hayes, Carver, Laurenceau, & Zhang, 2012), but studies have not thoroughly investigated how lower order traits may work in opposing ways. Given our findings that facets may out predict or predict in opposition to one another or to their overall trait, we believe that future research should focus on facets in more depth. Research may explore facets' relationships with outcomes as well as delineate how underlying drives may work in opposition to one another.

Our findings indicate that the relationship between conscientiousness and volunteering is not as straightforward as that of other personality traits. None of the other Big Five traits consistently demonstrated an interaction with work status when predicting volunteering, suggesting traits like agreeableness and extraversion positively influence whether one volunteers, regardless of work status. However, volunteering likely only becomes appealing to conscientious individuals when they are not currently investing in other domains, such as work.

### 8.1. Future directions

The current findings prompt several other possible avenues of research. Because people's investments in their roles throughout life are associated with personality development (Lodi-Smith & Roberts, 2007), future research might investigate how taking on a volunteering role impacts personality development. Volunteering's influence on personality, particularly conscientiousness, may be especially important in retirement. Research has indicated that individuals tend to decrease in conscientiousness in older adulthood and that individuals who retire decrease faster than those who remain in the workforce (Specht, Egloff, & Schmukle, 2011). Volunteering could offer a way for individuals to maintain their conscientious traits and may therefore slow or delay declines in conscientiousness after retirement. Previous research has also indicated that facets can demonstrate differential developmental trajectories from overall conscientiousness (Jackson et al., 2009; Soto, John, Gosling, & Potter, 2011). Given our findings that achievement striving seemed to be a particularly important facet when predicting volunteering, future studies may also delve into how specific facets change in response to certain life experiences.

Future studies might also examine the role of conscientiousness in a younger population, where volunteering may confer different benefits and costs compared to retired and working adults. For example, it is now standard for high school and college students to volunteer to boost résumés as well as to satisfy program requirements. In this case, conscientious students may be more likely to volunteer because the benefits of volunteering are related to occupational and achievement gains: increased experience, enhanced resumes, and expanded social networks. While retired individuals utilize volunteering to keep busy, working individuals and students must balance time spent working and time spent volunteering. However, compared to working individuals, students may view volunteering as a natural extension of their current pursuits. In other words, volunteering may be a way to invest in one's role as a student, while simultaneously preparing for one's future career. The current study provided initial evidence that conscientious, non-working adults may also be more likely to take on volunteering, suggesting that volunteering may not be exclusive to conscientiousness individuals who are retired, but may also offer meaningful work and a way to enhance career related skills for those who wish to do so.

Finally, volunteering is related to better physical and mental health, as well as greater life satisfaction in older adults (Piliavin & Siegl, 2007; Van Willigen, 2000; Wilson, 2000). Volunteering has also been found to be related to reduced mortality rates in



older adults (Musick et al., 1999; Oman, Thoresen, & McMahon, 1999). Given these findings, some have suggested that volunteering may be especially important in older adults in order to buffer health declines associated with inactivity (Fischer & Schaffer, 1993). However, there is evidence that these findings may be driven by personality (King et al., 2014). Our findings indicate that conscientious individuals are more likely to volunteer after retirement. Future research may further explore the relationship between the conscientiousness, retirement, volunteering, and health.

## 8.2. Limitations

The current study had several limitations. First, the retired groups and not working groups were not significantly different from one another in either sample when predicting volunteering by level of conscientiousness. It is possible that this relationship arises because being unemployed can function similar to being retired. Conscientious individuals who are unemployed have more free time and may be proactive in seeking out other opportunities to fill their time. Volunteering may be an especially well-suited activity for the unemployed because it allows them to network, sharpen work-related skills, and enhance one's résumé (Clary & Snyder, 1999; Waikayi et al., 2012; Wilson 2000). However, it is difficult to draw conclusions about the nature of this finding. The number of individuals in the not employed groups for both the SPAN and HRS was small. This is particularly problematic in the HRS, where only 2% of participants report being unemployed. Furthermore, while the HRS unemployed participants reported being unemployed and actively seeking work, those classified in the SPAN as not employed did not further specify the nature of their working status. This group could represent fairly heterogeneous situations, such as individuals who are actively seeking work as well as those that consider themselves homemakers. Future research may wish to specifically examine how conscientious individuals deal with unemployment.

Second, we were not able to examine the types of organizations for which people volunteered. People volunteer for a variety of organizations for a wide variety of reasons (e.g., religious, political, humanitarian), and personality may play a differential role depending on the nature of people's motives. Future studies may examine whether personality is predictive of the reasons or the type of organization for which people volunteer. In addition, conscientious individuals may simply be more likely to engage in activities in general after retirement, not just volunteering. Future research may investigate whether conscientious individuals are more likely overall to fill their time with activities and also examine what other types of activities conscientious individuals are likely to take up, such as exercise, travel, hobbies, or time spent with family.

## 9. Conclusion

Overall, conscientiousness does seem to play an important role in choosing to volunteer, though the relationship is not as simple as that of agreeableness or extraversion. Instead, conscientiousness becomes an important factor when work status is taken into account. This pattern replicated in both the SPAN and the HRS datasets, when using different measures of conscientiousness, when data were examined longitudinally, and when volunteering was treated continuously. Furthermore, analyses demonstrated that the lower-order facet of achievement striving was particularly important in driving this relationship. These findings suggest that volunteering changes meaning for conscientious individuals: when conscientious individuals are working they invest in their careers

and do not have the time or resources to commit to volunteering. However, when they retire and lose a domain in which to invest, they become more likely to fill their time with a meaningful activity, such as volunteering. Thus these findings have broad implications for the study of person-environment transactions. Our findings indicate that the influence of conscientiousness on decisions to enter into life-experiences can differ across the lifespan.

## Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.jrp.2014.07.002>.

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## Further reading

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