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Work Role Residuals among Fully Retired Individuals: Results of a 10 Year Panel Study

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Abstract

From a role theoretical perspective it can be expected that individuals differ in the extent to which they experience aspects of the work role after they have fully retired from it. This study presents a measure of these “postretirement work role residuals” and examines them in relation with structural preretirement factors, psychological preretirement factors, and the nature of the retirement transition. Heckman selection models were estimated based on three-wave panel data collected among 848 older Dutch individuals, who were employed at Wave 1 and fully retired thereafter. Even though for the majority of retirees prior work plays only a minor role in their current lives, also for a considerable share prior work is still important. Higher levels of postretirement work role residuals were observed among those who expected to miss work-related social status in retirement, who were less disengaged from work in preretirement years, and among those who retired involuntarily.

Key words: Careers, Older workers, Retirees, Role theory, Postretirement process

Introduction

The transition from work into retirement can be characterized as a complex process that takes place over a longer period of time and can take various forms (Beehr, 1986; Wang & Shultz, 2010).

Research has shown that already prior to retirement, the upcoming retirement transition starts playing a role in the way in which individuals experience their work (Damman, Henkens, & Kalmijn, 2013; Ekerdt & DeViney, 1993). The process character of retirement has also been reflected in studies on late-career employment pathways, which show that individuals increasingly make their actual transition out of work less abrupt by taking up so-called bridge employment (e.g., Kim & Feldman, 2000; Wang, Zhan, Liu, & Shultz, 2008), resulting in blurred exit pathways (Mutchler, Burr, Pienta, & Massagli, 1997). From a role theoretical perspective – one of the central theories in the literature on postretirement experiences (Van Solinge, 2012) – it is expected that also in the lives of individuals who have fully retired from paid work the former work role could still play a part (Ashforth, 2001). Ebaugh (1988) refers in her work on the process of role-exit to the notion of a “role residual”, which she defines as “the identification that an individual maintains with a prior role such that the individual experiences certain aspects of the role after he or she has in fact exited from it” (p.173). Quantitative empirical insights regarding postretirement work role residuals are scarce though. This study aims at filling this gap, by addressing the following research question: *To what extent do fully retired individuals experience “postretirement work role residuals” and how can differences between retirees be explained?*

Role residuals have received attention in qualitative studies in a variety of research areas, such as in studies on exiting marriage (Van den Hoonaard, 1997), on recovery from substance abuse (Marcus, 1998), on leaving professional sports careers (Drahota & Eitzen, 1998; Stier, 2007), and on organizational exits of business founders (Rouse, 2015). Also in a few qualitative studies on the retirement of older workers, role residuals have been observed (Harris & Prentice, 2004; Van den Hoonaard, 2015). Quantitative studies on postretirement processes have, however, commonly focused on general outcome measures – such as life satisfaction (Calasanti, 1996; Heybroek, Haynes, & Baxter, 2015; Pinquart & Schindler, 2007), psychological well-being (Wang, 2007), happiness (Calvo, Haverstick, & Sass, 2009), or satisfaction with retirement (Quick & Moen, 1998) – rather than on the

role that prior work plays in the lives of fully retired individuals. This is remarkable, given that dealing with the loss of the work role is one of the central developmental challenges older individuals face in the retirement process (Van Solinge & Henkens, 2008) and given that the remnants of the prior work role might impact the way in which older individuals shape and experience their life in retirement (Ebaugh, 1988).

Prior research has shown that some retirees still miss the income, social contacts, or status of their prior work (Damman, Henkens, & Kalmijn, 2015). This study argues that retirees might also still experience certain aspects of the former work role in their daily lives, for example, by engaging in activities that used to be part of their work. It is expected that these work role residuals are not only of importance among very specific occupational groups such as professional athletes or business founders, but might be a much more common phenomenon. The first way in which the current study aims to contribute to the literature is therefore by developing a broad measure of postretirement work role residuals, and by examining these role residuals in a large heterogeneous sample of retirees. The measure includes both general statements about the perceived role that prior work plays in retirees' current lives, and more specific statements about whether retirees are still talking about their prior work, keeping up with developments in the work field, and doing work-related activities as a hobby.

Second, this study aims to improve our understanding of variation in postretirement work role residuals. Based on a role theoretical perspective (Ashforth, 2001; Ebaugh, 1988), several groups of factors are identified that can be expected to affect the level of postretirement work role residuals: structural preretirement factors (involvement in work and alternative social roles), psychological preretirement factors (retirement anxiety and work disengagement), and the nature of the retirement transition (involuntary retirement). Also attention will be paid to the time that has elapsed since retirement. Given that current knowledge on postretirement work role residuals is scarce, hypothesis deduction and empirical examination of a broad range of potential predictors will offer an important step towards a better understanding of this dimension of the postretirement process.

Third, the hypotheses will be tested both with and without taking measures of postretirement resources into account. Previous research has shown that resources are highly important for understanding adjustment to retirement. Resources such as the financial situation, health, and partner

status of older individuals are well-established predictors of retirement satisfaction (Van Solinge & Henkens, 2008), life satisfaction (Pinquart & Schindler, 2007), and psychological well-being in retirement (Wang, 2007). In a recent review Wang and colleagues (2011) suggested to use a “resource-based dynamic perspective” for studying retirement adjustment. This study will explore whether these resources also play a role for explaining differences in postretirement work role residuals and whether the effects of preretirement factors remain intact when these postretirement resources are taken into account.

The current study is based on panel data collected in 2001, 2006/7, and 2011 among 848 older individuals in the Netherlands. Given that all respondents were employed at Wave 1 and fully retired in the 10 years after that, we can predict the level of postretirement work role residuals (measured in 2011) by preretirement structural factors, preretirement psychological factors, and the nature of the retirement transition, when controlling for postretirement resources. The availability of panel data therefore has the advantage that structural and psychological preretirement factors were measured at the time individuals were still employed. To deal with potential selection bias given the focus on fully retired individuals, two-step Heckman selection models were estimated. The retirement landscape in the Netherlands reflected an “early exit culture” during the years of study (De Vroom, 2004). The mean retirement age of Dutch employees was considerably lower than the public pension age of 65 years. It has been around age 61 from 2001 to 2007, and gradually increased to age 63 in 2011 (Statistics Netherlands, 2013). The coming years the mean retirement age can be expected to increase further, given that policy measures have been taken to restrict early retirement options and to raise the public pension age.

Theory and hypotheses

One of the central theories that has been used to examine differences in postretirement experiences is role theory (Van Solinge, 2012). A role refers to “a position in a social structure” (Ashforth, 2001, p.4), such as being a worker in a specific organization, occupation, or career. Role transitions can be defined as “the psychological and (if relevant) physical movement between sequentially held roles”

(Ashforth, 2001, p.7), such as the transition from being a worker to being a retiree. According to role theory subsequent roles and their associated identities commonly show some overlap, that is, the process of role entry usually already starts before exiting a role, and the process of role exit usually continues after entering the new role (Ashforth, 2001; Ebaugh, 1988). A central role theoretical model on role exit by Ebaugh (1988) proposes that the process of role exit consists of four stages: first doubts about role commitments, seeking alternatives, a turning point that raises awareness that the old role is no longer desirable, and creating an ex-role after making the actual role transition. In this last phase, 'exes' may experience role residuals – a kind of “hangover identity” (Ebaugh, 1988, p.173) – of their prior role. Individuals might differ, however, in the extent to which this is the case.

Whether role residuals are something positive or negative, seems to be a point of debate. On the one hand, dealing with role residuals has been presented as a challenge to exes (Ebaugh, 1988, p.185), suggesting it is a lingering factor that might hinder well-being in a new role (Rouse, 2015). On the other hand, role residuals might also serve as a ‘transition bridge’ (Ashforth, 2001, p.12) that could provide a sense of continuity in life and therefore might positively affect well-being (Reitzes & Mutran, 2006). In both cases, however, it can be expected that retirees will gradually get used to the role change, which could result in a decline of role residuals. Over time, retirees might find solutions to the challenges associated with the role transition or no longer need the role residuals to maintain continuity in life. It can be hypothesized that the more time has elapsed since retirement, the less postretirement work role residuals will be reported (Hypothesis 1).

Structural preretirement factors: involvement in work and other social roles

From a role theoretical perspective it is assumed that individuals differ in the extent to which they are involved in or identify with certain roles (Ebaugh, 1988) – such as the work role – and this might influence the way in which individuals experience the loss of the role when exiting it. As Ebaugh (1988) notes, it “is safe to say that the more personal involvement and commitment an individual had in a former role, that is, the more self-identity was equated with role definitions, the more role residual tended to manifest itself after the exit” (p.178). Involvement in the work role can be expressed in several ways. One important factor that Ebaugh (1988) suggests as a predictor of postretirement role

residuals is the level of training and preparation that is required for conducting a certain type of work (p.178). The more training investments individuals have to make to acquire a specific work role, the more individuals tend to identify with the role, and the more work role residuals might appear after retirement. Generally we hypothesize that preretirement work in higher occupational levels is associated with more postretirement work role residuals (Hypothesis 2). Another indicator of role involvement is time investment in a certain role. It can be expected that individuals who have spent more time in a certain role over the life course are more likely to identify with a specific role and perceive it as more central to their identity. In line with this argument, retirees who have been in the labor market for more years, who worked more hours in preretirement years, or who frequently worked overtime hours can be expected to experience more postretirement work role residuals (Hypothesis 3).

In the literature, there is a debate about whether paid work and alternative (productive) social roles, such as informal social participation, volunteering, or care tasks are substitutive or rather complementary (e.g., Burr, Mutchler, & Caro, 2007; Hank & Stuck, 2008; Lancee & Radl, 2012; Mutchler, Burr, & Caro, 2003). When roles are perceived as substitutive, involvement in alternative social roles might be an indication of a lower centrality of the work role in the individual's life. Individuals who are engaged in these alternative roles already prior to retirement might retain more continuity in life when making the transition into retirement, given that they have alternative roles that they may preserve or potentially strengthen. From this perspective, it can be hypothesized that retirees who were engaged in associations/ sports clubs, volunteer work, or care tasks in preretirement years, experience less postretirement work role residuals compared to those retirees who did not have these alternative roles (Hypothesis 4a). When roles are perceived as complementary and indicative of a "general motivation to be active" (Hank & Stuck, 2008, p.1289), both alternative social roles and the work role might be central to an individual's identity. From this line of reasoning, especially these active individuals can be expected to need postretirement work role residuals to maintain a sense of continuity in life across the retirement transition. It can be hypothesized that retirees who were engaged in associations/ sports clubs, volunteer work, or care tasks in preretirement years, experience

more postretirement work role residuals compared to those who did not have these alternative roles (Hypothesis 4b).

Psychological preretirement factors: retirement anxiety and work disengagement

Already prior to retirement older workers might begin processes of anticipatory socialization into the retiree role and disidentification and disengagement from the work role (Atchley, 1976; Ekerdt, Kosloski, & DeViney, 2000). In anticipation of retirement, older workers might be anxious for the changes associated with the retirement transition, for instance in terms of its impact on their financial situation, health, social contacts, and social status (cf., Van Solinge & Henkens, 2008). In that case, postretirement work role residuals might serve as an adaptive strategy to cope with the retirement transition. When perceiving role residuals as part of a process of exiting a specific social role (Ebaugh, 1988) it can be expected that the anticipated consequences of a role change for one's social position in society (e.g., one's social contacts and status) are particularly important for explaining differences in terms of role residuals. We hypothesize that the more older workers expect to miss the social contacts or social status of the work role after retirement, the more postretirement work role residuals they experience (Hypothesis 5).

Also the process of work role exit might already start before actual retirement. In anticipation of retirement, older workers have been found to perceive their work as more burdensome (Ekerdt & DeViney, 1993) and to disengage from work (Damman et al., 2013). For retirees who were already disengaged from their work in preretirement years, it can be expected that the work role was already less central to their identity before retirement. Therefore, they can be expected to be relatively less likely to report a lingering work identity in retirement. Generally it can be hypothesized that the more disengaged older workers were from work in preretirement years, the fewer postretirement work role residuals they will report (Hypothesis 6).

Nature of the retirement transition: involuntary retirement

Most of the role theoretical literature focuses on voluntary role exits. The transition from work to retirement is frequently, however, not made voluntarily. Prior studies have shown that about 25 to 30

percent of retirement transitions are experienced as forced or involuntary (Szinovacz & Davey, 2005; Van Solinge & Henkens, 2007), which has negative implications for postretirement well-being and health (e.g., Calvo et al., 2009; van Solinge, 2007). Its implications for postretirement work role residuals are, however, not immediately clear. On the one hand, it can be expected for involuntary retirees – as compared to those retiring voluntarily – that the work role was more central in their preretirement lives and that they were less likely to have started the process of work role exit prior to retirement. Consequently, involuntary retirement might be associated with more postretirement work role residuals (Hypothesis 7a). On the other hand, as suggested by Ashforth (2001), after involuntary role exit, “individuals are likely to attempt to distance themselves from the role – or at least the organization – as a means of controlling their distress at the loss” (p.143). This may rather suggest that individuals who retired involuntarily experience less postretirement work role residuals as compared to those who retired voluntarily (Hypothesis 7b).

Design and Methods

Sample

Three-wave panel data of the NIDI Work and Retirement Panel were analyzed to test the hypotheses. In 2001 (Wave 1) data were collected among a random sample of civil servants aged 50-64 years working for the Dutch central government, and all workers aged 50-64 years of three large Dutch multinational private-sector organizations (active in manufacturing, retail, and information and communication technology). A questionnaire was sent by mail to 3,899 older workers. In total 2,403 questionnaires were returned (response rate 62%). The second wave of data collection took place in 2006/7 among surviving and traceable participants of the first wave. A total of 2,239 questionnaires were mailed out, of which 1,678 were completed (response rate 75%). Data collection of Wave 3 took place in 2011 among all 1,638 surviving and traceable respondents of the second wave. The Wave 3 questionnaire was completed by 1,276 respondents (response rate 78%). Given that the respondents used to be employed at only large organizations, it should be mentioned that the sample is not representative of the entire Dutch labor force. Information of Statistics Netherlands (2016) reveals that

approximately 43 percent of Dutch employees are working in large organizations (i.e., organizations of more than 500 employees).

The items concerning postretirement work role residuals were included in Wave 3 and were only applicable to individuals who had fully retired from paid work. Therefore, the base sample for the analyses consists of 881 respondents who were fully retired at Wave 3 (i.e., they made use of an (early) retirement arrangement during the study period and did not report any paid work hours at Wave 3). All these respondents also participated in Waves 1 and 2. Respondents who had a missing value on at least one of the items to measure postretirement work role residuals ($n = 33$) were excluded from the sample, resulting in an analytic sample of 848 fully retired individuals. On average it was 5.4 years ago that these respondents made use of an (early) retirement arrangement.

Measures

Dependent variable – Fully retired respondents were asked at Wave 3 about their level of *postretirement work role residuals* by using six Likert items with five response options (1 = *completely agree* to 5 = *completely disagree*). The items include both general statements about the perceived role that prior work plays in retirees' current lives, and more specific items about whether retirees keep up with developments in the field, do work-related activities as a hobby, and still like to talk about their prior work (see Table 1). When submitting the data to an exploratory factor analysis using the principal factors method, only one factor was extracted having an Eigenvalue larger than one (Eigenvalue = 2.13), suggesting that the items measure one underlying concept. Factor loadings of the items are reported in Table 2. We used the factor scores to construct the measure of postretirement work role residuals. Higher scores reflect higher levels of postretirement work role residuals. We standardized the scale to obtain effect sizes in terms of Cohen's d for the dummy variables in the analyses (Mean = 0, SD = 1, Min = -1.97, Max = 3.35).

Independent variables – The time elapsed since retirement was measured by subtracting the age at retirement from the respondent's age at Wave 3 (detailed information about wording of the survey questions, coding of variables, and descriptive statistics is presented in Table 3). To measure

preretirement work and career characteristics, information was collected about the preretirement occupational level (i.e., required credentials for current job), number of years in the labor market, work hours, and the frequency of working overtime hours. Three aspects of preretirement involvement in alternative social roles were included in the analyses: whether respondents were involved in associations/ sports clubs in preretirement years, whether they did volunteer work, and whether they had care tasks. Preretirement anxiety about the consequences of retirement was measured by asking the respondents about the extent to which they expect negative consequences of retiring in four domains: financial well-being, health, social contacts, and social status. Late-career work disengagement was measured by a six-item scale, which captures various work activities and investments that older workers might reduce in preretirement years. For measuring structural and psychological preretirement factors, we used the Wave 1 observation if the respondent retired between Waves 1 and 2, and the Wave 2 observation if the respondent retired between Waves 2 and 3. Whether the retirement transition was perceived as involuntary was measured at the wave immediately following upon retirement. In all models the basic demographic characteristics gender and age are controlled for. Moreover, given that resources are well-established correlates of postretirement adjustment processes (e.g., Donaldson, Earl, & Muratore, 2010; Pinguart & Schindler, 2007; Wang, 2007), measures of postretirement personal resources (subjective health, subjective income adequacy, wealth), and social resources (partner status, having grandchildren) were incorporated.

Item non-response was generally low (< 2.2%), except for the wealth variable (10.0%). Given that the Heckman selection models (see next paragraph) could not be estimated for multiple-imputed data, single regression imputation was generally used to deal with item non-response (for wealth we have set the missing values at the mean and included a dummy indicator in the model reflecting ‘wealth is missing’). This approach might result in underestimated standard errors. Therefore, we also ran multiple imputation models (Stata 12: `mi impute chained`; 25 imputed datasets) to check whether – at least in regression models without correcting for sample selection – multiple imputation procedures result in more conservative findings. The conclusions regarding associations between study variables and postretirement work role residuals did, however, not change when multiple imputation procedures were used.

Analyses

The dependent variable of this study – postretirement work role residuals – can only be observed among individuals who fully retired from paid work during the observation period. Whether respondents are fully retired or still working (either in a career or bridge job) might, however, be the result of a selective process. To deal with potential sample selection bias, two-step Heckman selection models were estimated. Selection into the sample (i.e., being fully retired versus working) was predicted using a probit model based on all independent variables that were applicable for both working and non-working respondents, as well as the organization the respondents used to work for, which is not included in the outcome equation. Given that organizations differ in their retirement arrangements, organizational membership affects the timing of retirement (organization is a highly significant predictor of selection into the sample, see the Appendix), but we did not expect an association with postretirement work role residuals (and at least the correlations with the dependent variable are not statistically significant among full retirees). The estimated probability of being included in the study sample (converted to Lambda) was incorporated in the outcome equation to account for sample selection.

Results

The incidence of postretirement work role residuals

The descriptive statistics of the items of the postretirement work role residual scale are reported in Table 1. The results suggest that for a majority of retirees their former work plays only a minor role in their current lives. Almost 60% (completely) agrees with the item that prior work plays absolutely no role anymore, and approximately 70% states that their prior work is “really something that I have left behind”. However, at the same time, a substantial minority of retirees is still highly engaged in their prior work role. About 40% still likes to talk about their prior work, 24% still keeps up with the latest developments in their field, and 15% is still doing work-related activities as a hobby. This work role engagement after retirement is more frequently observed among those retirees who used to work in

higher status occupations, as compared to lower status occupations (see Figure 1), but appears not to be exclusively observed in the higher status group. Among those retirees in lower status occupations still 18% is keeping up with the latest developments in the field, and 11% is doing work-related activities as a hobby, whereas in the higher status group the percentages are 26% and 16% respectively. Overall, the results show large variation among retirees in the extent to which they still experience aspects of the former work role in their current lives.

Explaining variation in postretirement work role residuals

Table 4 shows the results of the multivariate regression analyses to explain differences between retirees in their levels of postretirement work role residuals. In Model 1, the postretirement work role residual scale is regressed on the time elapsed since retirement and structural preretirement factors. The results show that – as predicted in Hypothesis 1 – the more time has elapsed since retirement, the lower the scores on the postretirement work role residual scale are. Especially retirees who made use of an (early) retirement arrangement more than 8 years ago report significantly lower levels of postretirement work role residuals as compared to the reference group of recent retirees. In line with the descriptive results of Figure 1, the findings show that preretirement work in a higher occupational level is related to a higher level of postretirement work role residuals, as was expected in Hypothesis 2. Also the frequency of working overtime hours in preretirement years appears to play a role. Older individuals who often worked overtime hours report more postretirement work role residuals compared to those who never worked overtime (see Hypothesis 3). Number of years in the labor market, preretirement formal work hours, and preretirement engagement in associations/ sports clubs, volunteer work, and care tasks are not significantly associated with postretirement work role residuals.

The psychological preretirement factors were added in Model 2. As expected in Hypothesis 5, older workers who expected to miss the social status of the work role after retirement experience more postretirement work role residuals compared to those who did not expect to miss social status. Financial preretirement anxiety is also positively associated with postretirement work role residuals. The effects of the other preretirement expectations about retirement were not statistically significant at the 5% level. In line with Hypothesis 6, the findings show that the more disengaged older workers

were from work in preretirement years, the fewer postretirement work role residuals they report. When taking the psychological factors into account, the effects of the structural work characteristics are no longer statistically significant. This might be seen as an indication that the psychological factors are mediating the effects of the structural factors on work role residuals.

In Model 3, information about the voluntariness of the retirement transition was added. The findings show that retirees who perceive they have made their transition into retirement involuntarily, report significantly higher levels of postretirement work role residuals than those who retired completely voluntarily. This result is in line with Hypothesis 7a. In the final model (Model 4) measures of postretirement personal and social resources were added, to examine whether the effects of the study variables can be explained by these well-established correlates of retirement adjustment. The results show that the effects of the preretirement factors hardly change when the postretirement resources were added to the outcome equation. Interestingly, none of the effects of postretirement personal and social resources is statistically significant.

In additional analyses (not reported in the Table), interaction effects were examined between the study variables and a continuous measure of time elapsed since retirement (range 0-10), to examine whether the effects of the variables are weaker among respondents who were retired for a longer time. For some variables – i.e., volunteer work ($b(\text{main}) = 0.37, z = 2.34, p = 0.02$; $b(\text{interaction}) = -0.05, z = -1.96, p = 0.05$) and involuntary retirement ($b(\text{main}) = 0.47, z = 2.97, p < 0.01$; $b(\text{interaction}) = -0.05, z = -1.88, p = 0.06$) – the pattern of the findings was in the expected direction, suggesting that effects are the strongest among those who retired recently.

Postretirement work role residuals and subjective well-being

The previous findings leave the question unanswered whether postretirement work role residuals are something positive or negative in terms of subjective well-being. For examining the relationship between role residuals and well-being, ideally longitudinal data are necessary, in which both role residuals and well-being are measured at multiple points in time. In our data, however, we only have a measurement of postretirement work role residuals available at Wave 3 and therefore we cannot take this longitudinal approach. We can, however, examine the association between role residuals and well-

being at Wave 3 (measured by the question “Which mark from 1 (highly dissatisfied) to 10 (highly satisfied) would you give your current life situation?”). When studying this association, it is important to take the character of the retirement transition into account, given that involuntary retirement is a well-established predictor of postretirement well-being, and is found in this study to predict postretirement work role residuals. The results show that postretirement work role residuals are negatively correlated with postretirement well-being ($r = -0.26, p < .001$). Work role residuals are more observed among those who report lower levels of postretirement well-being. Figure 2 shows that this negative association between postretirement work role residuals and postretirement subjective well-being is both found among those who retired voluntary, and those who retired involuntarily.

Discussion

The shift from being a worker to being a retiree is an important transition in the lives of older individuals. Where traditionally in the literature on retirement adjustment scholars have focused on general outcomes of retirement, for example by examining life satisfaction, there is an increasing attention for more specific outcome measures. Recent studies have examined self-evaluations of difficult adjustment (Van Solinge & Henkens, 2008), and whether retirees miss aspects of their work (Damman et al., 2015). These studies show that retirement adaptation is a multidimensional process in which people have to deal with the loss of economic and social resources. The current study of work role residuals fits well in this strand of literature, by examining the role that prior work plays in the daily lives of full retirees. Generally the results show that – even though for the majority of the fully retired individuals their prior work plays only a minor role in their current lives – for a considerable share of retirees their prior work is still an important part of their life. While the studied retirees were on average already retired for more than five years, still 15% is doing work-related activities as a hobby, one out of four keeps up with the latest developments in their field, and about 40% likes to talk about their former work. The extent to which the studied retirees experienced postretirement work role residuals was higher among those who retired recently, than among those who made use of a retirement arrangement almost a decade ago.

Given that current insights on postretirement work role residuals are limited, a broad range of potential explanatory factors was examined. Hypotheses were formulated based on a role theoretical perspective. Overall, the findings suggest that the way in which older individuals view their work and retirement role engagement – as captured by the psychological preretirement factors, and the nature of the retirement transition – is more important for understanding differences in postretirement work role residuals than the structural preretirement factors and postretirement resources. Even though those retirees who used to work in higher status occupations and who frequently worked overtime hours reported relatively high levels of postretirement work role residuals, these effects disappeared when late-career retirement anxiety, work disengagement, and the character of the retirement transition were taken into account. Generally the results show that older individuals who were more anxious for the loss of social status upon retirement, who were less disengaged from work, and who retired involuntarily report higher levels of postretirement work role residuals. These findings suggest that having a positive view on work and perceiving retirement as an undesirable state increases the likelihood of a lingering work identity in retirement, despite the fact that physical role exit has already taken place.

Even though previous research has shown that resources are highly important for understanding general well-being in retirement (e.g., Pinguart & Schindler, 2007; Wang, 2007), the studied postretirement resources were not significantly associated with postretirement work role residuals. This suggests that the newly developed measure of postretirement work role residuals captures a different aspect of the postretirement process than general outcome measures. Also the hypothesized relationships for various preretirement structural factors were not observed. For instance, the amount of time the employee formally has spent in the work role did not play an explanatory role. Also no effect was observed for engagement in alternative social roles. This might suggest that not so much the amount of time individuals have spent in the work role or alternative roles, but rather the investments they made and the level of work engagement they showed are of importance for understanding the role that prior work still plays in their lives after retirement. It should be noted, however, that the measurements of engagement in preretirement alternative roles in our study were based on broadly formulated questions, which might not have captured the engagement in

preretirement alternative roles in detail. Moreover, no specific information was available about other potentially relevant preretirement roles, such as caring for grandchildren.

Postretirement work role residuals appeared to be negatively associated with postretirement well-being. This findings might indicate that work role residuals are a kind of unsatisfying surrogate of the work role, instead of being a satisfying continuity-providing state. In this respect, the current findings are in line with the findings of the qualitative pilot study by Van den Hoonaard (2015), showing that retirees “try to hang on to the lingering identity associated with their professional careers, but they found it challenging, some commenting that they no longer knew who they were or what their purpose was” (p.56). Also in other areas of study, similar patterns between role residuals and well-being have been observed. For example, DeGarmo and Kitson (1996) show in a quantitative study among widowed and divorced women that higher identity relevance – i.e., continued importance of the marital identity and centrality of the relationship with the former spouse – was associated with more psychological distress. Moreover, in a more recent qualitative study among business founders, role exit pathways in which deidentification from the old role is salient, were found to be associated with negative emotions (Rouse, 2015). Further examining the relationships between role residuals and well-being by taking a longitudinal approach, might be a highly relevant direction for future research.

When interpreting the study findings some limitations should be kept in mind. Firstly, even though the availability of a broad range of items to measure work role residuals is an important strength of the data, there might be dimensions that are not captured by the current measurement. For example, a social network component – i.e., contacts with former colleagues – is currently not included. Extending and further validating the postretirement work role residual measure in other study samples might be a valuable direction for future research. Moreover, for future studies it will be informative to examine postretirement work role residuals at different points in time. This will provide the opportunity to examine postretirement dynamics, and to examine the role of period effects. Secondly, no information is available about some potentially relevant predictors of postretirement role residuals, such as preretirement planning and preparation. Also given the potential time lag between the measurements of the preretirement situation and actual retirement, changes in structural or psychological factors just before retirement will not all be captured by the data. Thirdly, although the

studied retirees form a highly diverse group, they all used to be employed at a limited number of organizations. The sample is not representative of all Dutch retirees and does not include some occupations in which potentially high levels of postretirement work role residuals could be expected, such as medical doctors, or scientists. Finally, we used a Heckman selection model to adjust for possible sample selection bias due to the focus on fully retired individuals. Since we had only few exogenous regressors available to predict selection it is likely that we were able to reduce, but not to fully eliminate selection bias. Furthermore, given that role residuals were measured at Wave 3 – in which respondents in higher status occupations were more likely to participate than those in lower status occupations – the incidence of postretirement work role residuals might be somewhat overestimated in this study.

Despite these limitations, this study is an important step toward a better understanding of the postretirement work role exit process. The results show great variation among retirees in terms of the role that prior work plays in their current lives, and suggest that the way in which older individuals perceive work and retirement is particularly important for understanding these differences. Among a substantial minority of retirees, the transition into retirement is not equal to a full detachment from their work. Although the results show a small decline of postretirement work role residuals the longer respondents are retired, even many years after transitioning into retirement the work role still appears to be of importance in the lives of retirees. Not only for understanding retirement processes, but also for examining attitudes and behaviors of aging individuals more generally, this study provides evidence that it is relevant to consider the continuing role of prior work in their lives.

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Table 1 Descriptive statistics of postretirement work role residual items

Items (translated from Dutch)	Completely agree	Agree	Not agree/ not disagree	Disagree	Completely disagree
1. My prior work plays absolutely no role in my life anymore	25.1	33.7	19.8	18.3	3.1
2. I do not occupy myself with things from my prior work anymore	14.4	33.5	24.9	21.3	5.9
3. My prior work is really something that I have left behind	23.6	47.6	17.5	9.1	2.2
4. I still keep up with the latest developments in my field ^a	2.4	21.6	20.6	31.4	24.1
5. Many things I used to do in my work, I now do as a hobby ^a	1.9	13.0	16.9	42.6	25.7
6. I still like to talk about my prior work ^a	6.3	34.0	32.4	18.6	8.7

^aThese items are reversely coded when constructing the postretirement work role residual measure

Table 2 Correlations and factor loadings of postretirement work role residual items

Items (translated from Dutch)	Correlations (all statistically significant)					Factor loadings
	1.	2.	3.	4.	5.	
1. My prior work plays absolutely no role in my life anymore						0.62
2. I do not occupy myself with things from my prior work anymore	0.45					0.69
3. My prior work is really something that I have left behind	0.50	0.58				0.70
4. I still keep up with the latest developments in my field (reversely coded)	0.36	0.38	0.35			0.58
5. Many things I used to do in my work, I now do as a hobby (reversely coded)	0.26	0.27	0.27	0.41		0.47
6. I still like to talk about my prior work (reversely coded)	0.30	0.33	0.32	0.31	0.25	0.48

Table 3 Means, standard deviations, coding of independent variables, and wording of survey questions

Variables	Mean / %	SD	Measurement wave ^a	Coding and psychometric properties	Description/ Wording (questions translated from Dutch)
Gender	26%		W1	Dummy variable coded 0-1, 1=woman	
Age	64.92	2.76	W3	Continuous variable, range 60-75 years	
<i>Time since retirement</i>					
Time elapsed since retirement			W3	Four-category variable: 0-2 years, 3-5 years, 6-8 years, > 8 years	Time between Wave 3 and age of making use of (early) retirement arrangement, grouped into 4 categories
0-2 years (reference group)	22%				
3-5 years	21%				
6-8 years	45%				
> 8 years	12%				
<i>Structural preretirement factors</i>					
Occupational level			W1	Three-category variable: lower (primary or lower secondary), middle (middle or higher secondary), higher (tertiary)	Question: What is the educational level required for your current job? (1 = primary to 7 = tertiary)
Lower (reference group)	16%				
Middle	34%				
Higher	50%				
Years in labor market at retirement	38.96	6.32	W1	Continuous variable, range 12-51 years	Questions: At what age did you start working? Have you temporarily stopped working for more than 1 year after that? If yes, for how many years in total?
Work hours	36.21	7.16	W1 or W2	Continuous variable, range 8-40 hours	Question: How many hours do you work per week (excluding overtime work)? The values at Wave 1 are based on the information provided by the participating organizations
Overtime work			W1 or W2	Three-category variable: never, sometimes, often	Question: How often do you work overtime (paid or unpaid)? (1 = often to 4 = never)
Never (reference group)	23%				
Sometimes	54%				
Often	23%				
Associations/ sports clubs	53%		W1 or W2	Dummy variable coded 0-1, 1=member of association/ sports club	Question: Are you a member of one or more associations/ sport clubs (1 = no; 2 = yes)?
Volunteer work	27%		W1 or W2	Dummy variable coded 0-1, 1=engaged in volunteer work	Question: Are you engaged in volunteer work (1 = no; 2 = yes)?
Care tasks	18%		W1 or W2	Dummy variable coded 0-1, 1=engaged in care tasks	Question: Do you have care tasks, for example, do you care for your ill mother or a disabled family member (1 = no; 2 = yes)?
<i>Psychological preretirement factors</i>					
Retirement anxiety: Financial	2.79	0.99	W1 or W2	1-item scale, range 1 (few negative consequences) to 5 (many negative consequences)	Question: Could you indicate for the following aspects to what extent you expect to miss these when you are retired (1 = very much to 5 = not at all, reversed): money/ income
Retirement anxiety: Health	2.68	1.20	W1 or W2	1-item scale, range 1 (few negative consequences) to 5 (many negative consequences)	Item: Retirement from work will be beneficial to my health (1 = completely agree to 5 = completely disagree)
Retirement anxiety: Social contacts	2.79	1.03	W1 or W2	1-item scale, range 1 (few negative consequences) to 5 (many negative consequences)	Question: Could you indicate for the following aspects to what extent you expect to miss these when you are retired (1 = very much to 5 = not at all, reversed): social contacts via work
Retirement anxiety: Social status	1.59	0.72	W1 or W2	2-item scale, range 1 (few negative consequences)	Question: Could you indicate for the following aspects to what

Late-career work disengagement	2.64	0.68	W1 or W2	6-item scale, range 1 (highly engaged) to 5 (highly disengaged), alpha = 0.69	to 5 (many negative consequences), alpha = 0.80	extent you expect to miss these when you are retired (1 = very much to 5 = not at all, reversed): self-esteem and prestige/status
<i>Nature of the retirement transition</i>						
Involuntary retirement transition	29%		W2 or W3	Dummy variable coded 0-1, 1=retired involuntarily		Question: Was your decision to retire entirely voluntary or not?
<i>Resources</i>						
Subjective health	3.99	0.83	W3	1-item scale, range 1 (poor health) to 5 (good health)		Question: How would you characterize your health in general? (1 = very good to 5 = very poor, reversed)
Subjective income adequacy	3.96	0.81	W3	1-item scale, range 1 (poor financial situation) to 5 (good financial situation)		Question: How well can you make ends meet with your current income (1 = very good to 5 = very poor, reversed)
Wealth (log)	11.58	1.60	W3	Quasi-interval measure, range 7.82–13.53		How large do you estimate your total wealth (own house, savings, stocks, etc., minus debts/mortgage) to be? (1 = less than 5,000 Euros to 7 = more than 500,000 Euros). We used the natural logarithm of the class averages.
Wealth missing	10%		W3	Dummy variable coded 0-1, 1=wealth is missing		
Partner status	87%		W3	Dummy variable coded 0-1, 1=has a partner		Questions: What is your marital status? Do you have a partner?
Grandchild(ren)	67%		W3	Dummy variable coded 0-1, 1=has grandchild(ren)		Question: Do you have grandchildren?

^aWhether we used the answers provided at Wave 1, 2 or 3, is dependent upon the type of variable and the moment at which the respondent transitioned into retirement. For measuring preretirement characteristics, we most often used the Wave 1 observation if the respondent retired between Waves 1 and 2, and the Wave 2 observation if the respondent retired between Waves 2 and 3.

Table 4 Results of multivariate regression analyses (second stage output from a two-step Heckman model) to explain differences in levels of postretirement work role residuals (standardized scale score)^a. Coefficients and standard errors

Explanatory variables	Model 1		Model 2		Model 3		Model 4	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Constant	-4.05**	1.27	0.81	1.44	0.18	1.44	-0.82	1.58
Gender: Woman	0.20	0.11	-0.00	0.11	0.01	0.11	0.06	0.11
Age	0.06**	0.02	-0.01	0.02	0.00	0.02	0.02	0.02
Time since retirement								
Time elapsed since retirement (ref=0-2 years)								
3-5 years	-0.15	0.11	-0.17	0.11	-0.18	0.11	-0.17	0.11
6-8 years	-0.15	0.11	-0.16	0.10	-0.16	0.10	-0.15	0.10
> 8 years	-0.31*	0.15	-0.26	0.14	-0.27	0.14	-0.26	0.14
Structural preretirement factors								
Occupational level (ref=lower)								
Middle	0.16	0.11	0.11	0.11	0.08	0.11	0.09	0.11
Higher	0.23*	0.12	0.16	0.11	0.13	0.11	0.14	0.12
Years in labor market at retirement	-0.01	0.01	-0.00	0.01	-0.00	0.01	-0.00	0.01
Work hours	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.01
Overtime work (ref=never)								
Sometimes	0.03	0.09	-0.01	0.08	-0.00	0.08	-0.02	0.08
Often	0.23*	0.11	0.15	0.10	0.15	0.10	0.12	0.11
Associations/ sports clubs	0.00	0.07	0.00	0.07	0.00	0.07	-0.01	0.07
Volunteer work	0.10	0.08	0.11	0.08	0.10	0.08	0.10	0.08
Care tasks	0.06	0.09	0.06	0.09	0.04	0.09	0.03	0.09
Psychological preretirement factors								
Retirement anxiety: Financial			0.07*	0.04	0.05	0.04	0.03	0.04
Retirement anxiety: Health			-0.01	0.03	-0.02	0.03	-0.03	0.04
Retirement anxiety: Social contacts			0.03	0.04	0.03	0.04	0.04	0.04
Retirement anxiety: Social status			0.20**	0.05	0.18**	0.05	0.17**	0.05
Late-career work disengagement			-0.34**	0.06	-0.32**	0.06	-0.30**	0.06
Nature of the retirement transition								
Involuntary retirement transition					0.21**	0.07	0.21**	0.08
Resources								
Subjective health							0.03	0.04
Subjective income adequacy							-0.09	0.05
Wealth (log)							0.01	0.02
Wealth missing							-0.03	0.11
Partner status							0.00	0.10
Grandchild(ren)							0.02	0.07
Lambda	0.52**	0.18	-0.19	0.21	-0.10	0.21	0.09	0.25
N(censored/ uncensored)	395/ 848		395/ 848		395/ 848		395/ 848	
Wald chi2	32.42**		92.66**		101.99**		106.03**	

Note 1: * p<0.05; ** p<0.01; ^a High scores indicate that respondents report higher scores on the postretirement work role residual scale

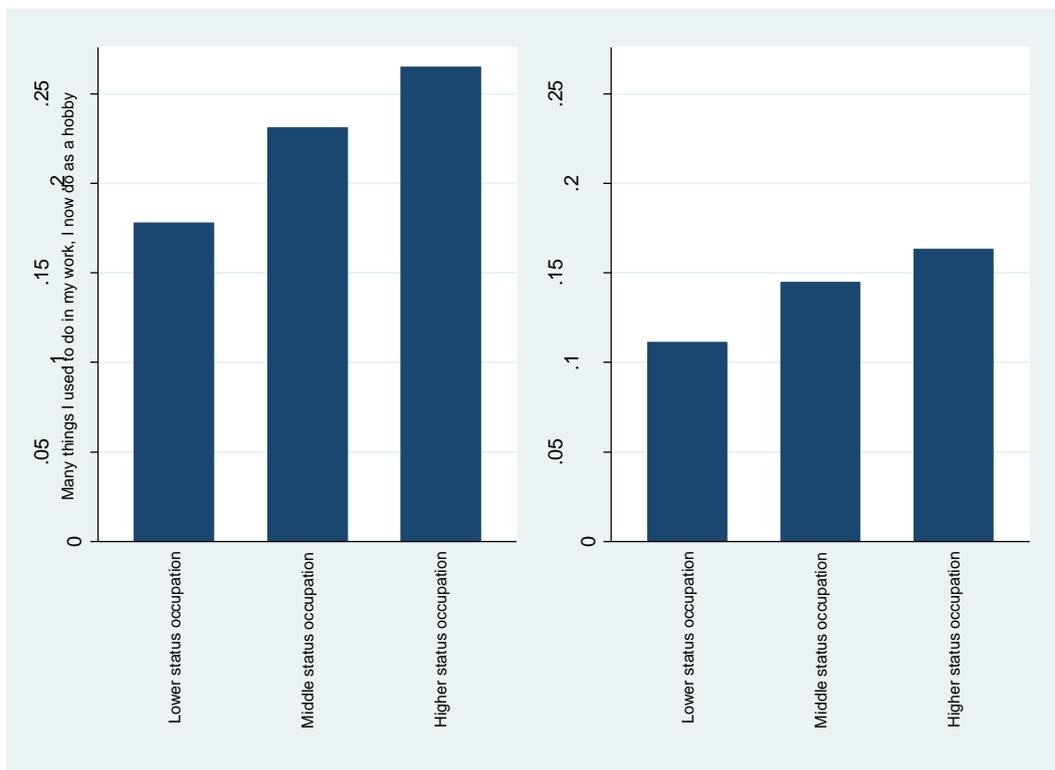


Figure 1 Share of respondents that (completely) agrees with the items “I still keep up with the latest developments in my field” and “Many things I used to do in my work, I now do as a hobby”, by occupational level.

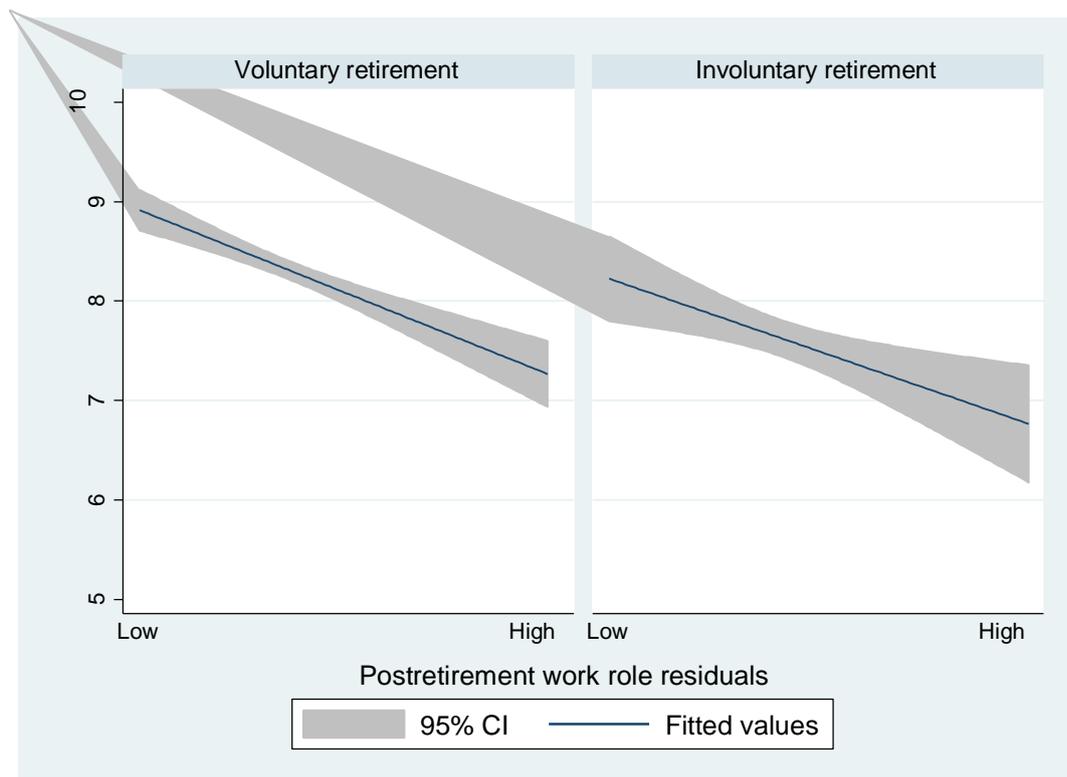


Figure 2 Association between subjective well-being in retirement (1 = very low mark assigned to current life situation to 10 = very high mark assigned to current life situation at Wave 3) and postretirement work role residuals at Wave 3, by voluntariness of retirement.

Appendix

First stage output from a two-step Heckman model: probit model to predict whether respondents are fully retired at Wave 3 (i.e., included in the sample = 1) or working (=0)

Explanatory variables	Coef.	SE
Constant	-13.22**	1.28
Organization (ref = public)		
Private-sector organization 1	0.47**	0.13
Private-sector organization 2	0.55**	0.12
Private-sector organization 3	0.29*	0.14
Gender: Woman	0.49**	0.14
Age	0.24**	0.02
Occupational level (ref=lower)		
Middle	0.16	0.15
Higher	0.04	0.16
Work hours	0.01	0.01
Overtime work (ref=never)		
Sometimes	-0.18	0.11
Often	-0.36**	0.14
Associations/ sports clubs	-0.07	0.09
Volunteer work	0.00	0.10
Care tasks	-0.03	0.11
Retirement anxiety: Financial	-0.20**	0.05
Retirement anxiety: Health	-0.12**	0.04
Retirement anxiety: Social contacts	0.01	0.05
Retirement anxiety: Social status	-0.19**	0.06
Late-career work disengagement	0.13	0.08
Subjective health	-0.09	0.06
Subjective income adequacy	-0.30**	0.06
Wealth (log)	0.04	0.03
Wealth missing	0.14	0.16
Partner status	-0.01	0.14
Grandchild(ren)	-0.03	0.09
<i>N</i> (censored/ uncensored)	395/ 848	

Note 1: * p<0.05; ** p<0.01