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Social Connectedness and the Transition From Work to Retirement

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Objectives. Although there are numerous studies on the role of social connections in early working life, research that examines how social connectedness matters in the later stages of a career is scarce. The present study analyzes to what extent social connectedness affects the timing of the transition from work to retirement.

Methods. We draw on data from the German Socioeconomic Panel Study (GSOEP) from the years 1985–2009 ($N = 10{,}225$), and we apply techniques of event history analysis. Social connectedness includes social gatherings with friends, relatives, and neighbors (informal participation) as well as engagement in voluntary and civic associations and local politics (formal participation).

Results. The findings demonstrate that social connectedness matters for the transition from work to retirement, but its impact depends on the type of participation. Whereas informal participation results in earlier retirement, formal participation delays labor force withdrawal.

Discussion. The findings suggest a trade-off between informal participation and work in later life, which leads people with frequent social contacts to opt for early retirement. By contrast, the fact that formal participation is associated with postponed retirement points to employment benefits of volunteering and civic engagement among older workers.

Key Words: Aging—Event-history analysis—Labor market—Life course—Retirement—Social connectedness—Social participation.

SOCIAL relations affect people's working lives. The manifold effects of social capital upon entry to and performance in the labor market are well documented (Mouw, 2003; see for an overview Lin, 1999). Although there are numerous studies on the role of social relations in early working life, less research has examined how social connectedness influences employment in the later stages of a career. Given an aging workforce, it is important to understand how people combine different productive activities in later life. As Burr, Mutchler, and Caro (2007: 274) posit, "the field needs a better understanding of how older people use their time and what factors drive these choices." This study examines the role of social connectedness on the timing of the transition from work to retirement.

Previous studies have predominantly focused on how people's social connectedness develops after retirement (Cornwell, Laumann, & Schumm, 2008; Hank & Stuck, 2008; Mutchler, Burr, & Caro, 2003). For example, Cornwell and colleagues (2008) show that under ceteris paribus conditions, social connectedness is higher for retired persons than workers. There is also evidence that the number of ties decreases with age (Kohli & Künemund, 2010) or poor health (Van Tilburg & Van Groenou, 2002). From a comparative perspective, Kohli, Hank, and Künemund (2009) demonstrate that, although there are important cross-national differences in older people's social relations, their individual-level determinants are highly similar across countries.

So far, however, there is little research that examines how social connectedness influences the timing of retirement. Previous studies have concentrated on the design of pension systems (Gruber & Wise, 2004) and labor market institutions (Ebbinghaus, 2006). At the individual level, the timing of retirement has been shown to depend on, among other characteristics, education, social class, and gender (Blossfeld, Buchholz, & Kurz, 2011; Radl, forthcoming). Qualitative research has shown that there is great diversity of retirement orientations, and that social relations play an important role (Barnes & Parry, 2004; Ekerdt, 2010; Weiss, 2005). The social dimension that has been systematically studied in terms of its impact on retirement is intrahousehold relations, such as the interdependence of retirement decisions between spouses (Drobniĉ, 2002; Henkens, 1999; Moen, Sweet, & Swisher, 2005).

In this paper, we analyze whether social connectedness beyond the household also matters for the timing of retirement. We test two contrasting hypotheses that potentially explain the relationship between social connectedness and productive activities. One hypothesis stresses that the retirement decision poses a fundamental trade-off between work and leisure time. People with high levels of social participation are likely to have a strong leisure orientation because it

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enables them to spend time with friends and family. From that perspective, social connectedness should lead to early retirement. A competing hypothesis, however, predicts that well-connected persons retire later because social connectedness and work attachment are both manifestations of a common underlying motivation to participate in social life. Along this line of argumentation, social connectedness delays retirement, because actors aim to avoid being cut off from the social life they value.

Thus, the contribution of this paper is to examine if and how social connectedness affects the process of labor market withdrawal. The empirical analyses are based on the German Socioeconomic Panel Survey (GSOEP; 1985–2009), which contains detailed longitudinal information on the life course and a biyearly measure of social connectedness. Panel data on social participation are scarce, and no study has analyzed the impact of social connectedness on retirement behavior using panel data. This study employs techniques of event-history analysis to take account of the dynamic nature of retirement transitions.

Social Connectedness

Social connectedness refers to the number and quality of social interactions that people have. Studies on the social integration of older adults vary in the terminology used to conceptualize social connectedness (Kohli et al., 2009): many aging studies follow the distinction between informal and formal participation, which is also common practice in the wider social capital literature (Pichler & Wallace, 2009; Lancee & Van de Werfhorst, forthcoming). Informal participation refers to assisting neighbors, friends, and family (Mutchler et al., 2003); getting together with neighbors and with people with whom you discuss things that are important to you (Cornwell et al., 2008); and social interactions with friends, neighbors, colleagues, or acquaintances (Kohli et al., 2009). Conversely, formal participation refers to community involvement, volunteer work (Cornwell et al., 2008; Mutchler et al., 2003), and participation in associations, clubs, or other organizations (Kohli et al., 2009).

In this study, social connectedness is defined in a broad sense as participation in social life. We distinguish informal participation (social gatherings with friends, relatives, and neighbors) and formal participation (involvement in community, volunteer work, and local politics). Although formal participation is a key element of active aging, the meaning of informal participation is more ambiguous. Contact with friends and relatives prevents loneliness but it is not in itself an indicator of active aging. Unlike previous studies, we are able to observe social connectedness of older workers for a long time span (up to 25 years). Although relationships with coworkers are also part of people's social connectedness (Van Tilburg, 2003), this information is not available in our data. Our focus is therefore on social connectedness outside the workplace. We discuss the implications of this limitation later.

Aging and Social Connectedness

Although no studies have been conducted to examine the way in which social connectedness influences retirement processes, there is a small body of literature that looks conversely at the effect of retirement on people's social relations (Cornwell et al., 2008; Van Tilburg, 2003). Older age groups usually have fewer ties (Kohli & Künemund, 2010). However, contrary to common knowledge, retirement as such is not the reason for decreasing numbers of personal relationships (Cornwell et al., 2008). Rather, retirement typically goes along with a change in network composition, as coworker relationships are replaced by family relationships (Van Tilburg, 2003).

Although all these findings are valuable accounts of older people's social contacts, they do not provide a longitudinal assessment of the connectedness-retirement nexus. Kohli and Künemund (2010: 158) state that "while cross-sectional associations between the dimensions of network structures and participation and their antecedents and consequences can yield more or less plausible interpretations, reliable knowledge about trends (age-period-cohort matrix) and about causal processes presupposes longitudinal data." Put differently, retirement status may well be endogenous to social connectedness. There is some tentative evidence to support this view. For instance, having social ties to retirees is associated with a preference for early exit from work among married Dutch workers (Henkens, 1999).

The Relation Between Social Connectedness and Retirement

The activity-substitution hypothesis.—Retirement can be interpreted as an intertemporal optimization problem that is based on a trade-off between leisure and consumption (Gruber & Wise, 2004). Within the framework of labor supply theory, individual preferences regarding work versus nonwork activities guide the retirement decision. Workers who have many social contacts probably value private life relatively more than workers who have few social contacts. Although the timing of employment exit is not solely a matter of choice (Van Solinge & Henkens, 2007), to the extent that informal participation alters the desire for leisure, frequent participation can be expected to lead to a diminished labor supply. The evolution of work–leisure preferences over the life course can be explained with socioemotional selectivity theory: it stipulates that when time is perceived as limited—which typically occurs with age—people increasingly value their emotional goals and activities (Carstensen, Isaacowitz, & Charles, 1999). Hence, with increasing age, people with frequent contact to family and friends are more likely to give diminishing priority to work and seek early retirement. Vice versa, "individuals lacking salient family ties may be less inclined to retire anticipating that withdrawal from the labor force will curtail opportunities for

social and personal fulfillment" (Szinovacz, DeViney, & Davey, 2001: 21). In this way, social connectedness is likely to influence work–leisure orientations that enter the process of decision making regarding the timing of retirement. In accordance with labor supply theory and socioemotional selectivity theory, workers with a high level of informal participation can therefore be expected to exit the labor market earlier than workers with low informal participation (hypothesis 1a).

Formal participation may also lead to early exit from work. According to role theory (Hank & Stuck, 2008), core social roles such as work, family, and civic responsibilities are prerequisites for fulfilling self-regulatory needs. The social role of the retiree, however, is not well defined as retirement is often seen as role exit (Quick & Moen, 1998). In this view, people who participate little in civic life may anticipate potential role loss following withdrawal from work and, hence, prefer to retire later. By contrast, people with high levels of formal participation are likely to leave the labor market earlier because they can substitute paid employment for other socially recognized activities and thereby prevent role loss. In fact, role overload theory would suggest that people who are actively involved in civic life retire earlier than others, as they seek to diminish role strain stemming from the difficulty with complying with the expectations of multiple social roles (Lee, 1988). The "activity-substitution hypothesis," thus implies that formal participation fosters early retirement (hypothesis 1b). Role theory also links informal participation and early retirement: insofar as people embrace a new social role, for example as grandparents, informal participation may lead to early retirement.

The complementarity hypothesis.—Although it is intuitive, the substitution hypothesis has been challenged by contrasting evidence regarding the association between various types of activities in later life (Hank & Stuck, 2008; Kohli et al., 2009). Wilson and Musick (1997, 2003) show that voluntary work significantly enhances labor market opportunities in the long term. They contend that the relationship between employment and volunteering is cumulative, rather than a trade-off dilemma.

Continuity theory may help account for this pattern. As Cornwell and colleagues (2008: 186) explain, "continuity theory argues that people become accustomed to certain social roles and social activities throughout their lives, which older adults actively attempt to maintain through the many transitions they face." In other words, this perspective posits a clustering of persons into different time-use arrangements that remain rather stable over the life course (Burr et al., 2007). Burr and colleagues (2007) analyze the structure of productive activities among middle aged and older adults in the United States. One of the identified clusters consists of persons who work and volunteer at the same time. The authors conclude that civic participation and paid work are complementary because volunteering may be an extension of employment-related social relations (see further Mutchler et al., 2003: 1271–1272). As far as retirement behavior is concerned, this logic implies a positive association between formal participation and the age of retirement (hypothesis 2a).

The continuity argument can also be applied to informal participation. Along that line of reasoning, people who frequently interact with friends and relatives retire later because they fear the loss of social contacts that may come with retirement. If people who are socially active are also active in other life domains, informal participation may be associated with delayed withdrawal from work. An alternative explanation is the loss of the work-related status. Since status is realized in social relationships (Lin, 1999), people with frequent social contacts may have greater fear of status loss due to labor force exit. Informal participation would then diminish the likelihood of early retirement because people avoid losing social status acknowledged in their social ties. The "complementarity hypothesis" thus also posits a positive association between informal participation and the age of retirement (hypothesis 2b).

Methods

We drew on data from the GSOEP, a panel study with yearly waves since 1984 (Wagner, Burkhauser, & Behringer, 1993). As is common in studies on retirement, we restricted the sample to workers 50 years of age or older to differentiate retirement from other forms of labor market inactivity that frequently occur in earlier phases of the life course. Because the measurement of social participation in 1984 differs from the subsequent years, our analyses are based on the years 1985–2009. Attrition rates in the GSOEP oscillate around 12% across waves (Gramlich, 2007: 94). Continued participation is fostered through careful tracking and ensuring interviewer continuity. The main sources of attrition are refusal and unsuccessful follow-up (Kroh & Spieß, 2008).

Method of Estimation

We applied a survival-analytic framework to examine the association between social connectedness and the timing of retirement. For the multivariate analyses, we estimated a piecewise-constant exponential model. Taking into account the clustering of retirement events at the statutory age boundaries, the baseline hazard used the following age brackets: 50–54 years, 55–59 years, 60 years, 61–64 years, 65 years, 66–69 years, and older than 70 years. The window of observation was capped at 80 years of age.

The event analyzed was exit from work. Though officially part of the labor force, we treated unemployed persons as retired unless an employment spell followed the period of joblessness. This operationalization is based on the documented difficulty of reentry for older workers and the heavy use of unemployment insurance as an early

retirement pathway in Germany (Knuth & Kalina, 2002). The final sample consisted of 54,873 person-year entries representing 10,225 subjects, of which 4,575 retired during the observation time.

Measures

Independent variables.—Every second year, the GSOEP includes a module on how people spend their free time (see Table 1 for the variable construction and the exact wording of the survey questions). Formal participation is measured with the following two survey items. Respondents were asked how often they perform volunteer work in clubs or social services and how often they are involved in a citizens' group, political party, or local government. Following previous work on formal participation (Ruiter & De Graaf, 2006), we combined both items into a single construct (Cronbach's alpha = .61). Informal participation is measured by a single survey item capturing the frequency of meeting for "social gatherings with friends, relatives or neighbors." All three items were part of the same battery of survey questions with the following response categories: "at least every week" (3); "at least every a month" (2); "less frequently" (1); "never" (0). Alternative coding schemes were tested for the distances between the categories, but this did not yield substantially different results.

Although the survey question refers to activities in people's free time, it was not possible to separate friendships with coworkers from nonwork-related friendships. In case people have predominantly work-related friendships, this might keep them in the labor force due to peer pressure and the fear to lose these friends. Probably, the share of coworkers in the number of friendships is, however, rather low (it was less than 10% in a study on retirees in the Netherlands; Cozijnsen, Stevens, & Van Tilburg, 2010). Nonetheless, if informal participation delays retirement, this can be partly due to ties with coworkers. If we find an accelerating effect of informal participation, however, the estimate is likely to be conservative due to the downward influence of potential friendships with co-workers.

The frequency of participation as a measurement (instead of, for example, tie strength) was especially suitable for our purpose because it is precisely the amount of time spent in social activities that potentially poses the trade-off problem between work and leisure time. Table 2 presents the mean and percentile distribution of informal and formal participation. On average, respondents who are 50 years or older and employed meet relatives, friends, or neighbors in their free time at least once a month. Thirty-five percent of the respondents participate in some type of association; 65% does not participate at all.

Control variables.—To control for composition effects, we included yearly measures of social class (using the Erikson–Goldthorpe schema), net labor income, a dummy

Table 1. Variable Coding and Wording of Survey Questions

Variable construction		Wording of survey questions/source
Social connectedness		
Informal participation[a]	1-item scale: 3 = *at least every week*; 2 = *at least every month*; 1 = *less frequently*; 0 = *never*.	"Which of the following activities do you take part in during your free time?"
Formal participation[a]	2-item scale: 3 = *at least every week*; 2 = *at least every month*; 1 = *less frequently*; 0 = *never*.	"Social gatherings with friends, relatives or neighbors" "Volunteer work in clubs, associations or social services," "Involvement in a citizens' group, political party, local government"
Number of years worked	Continuous variable ranging from 0 to 80 years working experience (months converted into decimals).	GSOEP generated variable
Unemployment experience	Continuous variable ranging from 0 to 35 years unemployment experience (months converted into decimals).	GSOEP generated variable
Satisfaction with health	1-item scale, ranging from 0 = *totally unhappy* to 10 = *totally happy*.	"How satisfied are you with your health?"
Net labor income	Natural logarithm of net labor income in Euros, 2009 prices.	"How high was your income from employment last month?"
Number of children	Count variable number of children of respondent and possible partner, ranging from 0 to 12.	Biography information
Sociodemographics	Categorical variable: male, West Germany; male, East Germany; female, East Germany; female, West Germany.	Biography information
Foreign born	Dummy variable with 1 = *foreign born*, 0 = *born in Germany*	"Where you born in Germany?"
Family situation	Categorical variable: married/cohabitating, spouse employed; married/cohabitating, spouse inactive; divorced or separated; single; widowed.	"What is your marital status?" "Are you currently engaged in paid employment? Which of the following applies best to your status?"
Person in household dependent on care	Dummy variable with 1 = *member of the HH needs care*; 0 = *no HH member in need of care*.	"Does someone in your household need care or assistance on a constant basis due to age, sickness or medical treatment?"
Social class	Categorical variable based on Erikson Goldthorpe class scheme (EGP).	GSOEP generated variable, based on: "What is your current position/occupation?" (International Standard Classification of Occupations [ISCO-88] occupational codes)
Age intervals	Categorical variable containing age groups	Date of birth biographical information and survey year.
Birth cohort	Categorical variable containing 10-year birth cohorts.	Date of birth biographical information

Note. Source: *GSOEP* = German Socioeconomic Panel Study, GSOEP-1985–2009.
[a]Available years: 1985, 1986, 1988, 1990, 1992, 1994, 1995, 1996, 1997, 1999, 2001, 2003, 2005, 2007, 2009.

Table 2. Descriptive Statistics

Percentage distribution	Informal participation	Formal participation
At least every a week	35	10
At least every month	40	10
Less frequently	23	14
Never	2	65
	M	*SD*
Informal participation	2.07	0.81
Formal participation	0.65	1.02
Work experience (years)	30.52	8.32
Unemployment experience (years)	0.55	1.72
Satisfaction with health	6.36	2.15
Net labor income (ln)	6.85	.922
Number of children	1.94	1.28
Sociodemographics	%	
Male, West Germany	43	
Male, East Germany	13	
Female, West Germany	33	
Female, East Germany	11	
Foreign born	15	
Family situation		
Married/cohabitating, spouse employed	53	
Married/cohabitating, spouse inactive	32	
Divorced or separated	8	
Single	3	
Widowed	3	
Person in household dependent on care	3	
Social class (EGP)		
High service	14	
Low service	20	
Routine nonmanual	8	
Routine service-sales	11	
Self-employed	9	
Skilled manual	14	
Semi/unskilled manual	23	
Age interval (baseline hazard)		
Age 50–54	52	
Age 55–59	29	
Age 60	4	
Age 61–64	10	
Age 65	1	
Age 66–69	2	
Age 70 and older	1	
Birth cohort		
Born 1920/1929	6	
Born 1930/1939	23	
Born 1940/1949	35	
Born 1950/1959	36	

Note. Descriptive statistics based on multiple spell data, adjusted to time at risk. Source: German Socioeconomic Panel Study-1985–2009.

for home ownership, work experience (in years), the number of years that people have been unemployed in the past, and self-perceived health. Because retirement behavior depends on migration background (Mika & Baumann, 2008), we control for being born outside of Germany. Because our data capture the period of the early 1990s, when the job market in the East contracted sharply, we expect East Germans to retire earlier than West Germans. To account for persistent differences between East and West Germany, we included a dummy for residence in the former German Democratic Republic for men and women separately. We also included dummies for decennial birth cohorts to account for possible cohort differences.

Given previous evidence on spouses' joint retirement planning (Drobnič, 2002; Henkens, 1999), we controlled not only for marital status but also for the employment situation of spouses (married or cohabiting). Furthermore, although the empirical evidence on the effect of care obligations is inconsistent thus far, caregiving can be an obstacle to continued work (Dentinger & Clarkberg, 2002; Szinovacz et al., 2001). Every survey year, respondents were asked whether a member of the household needs care or assistance on a constant basis. We included this dichotomous variable as a proxy for care responsibilities. We also controlled for the number of children.

All variables were time dependent, that is, individuals were traced during analysis time, and workers' socioeconomic profiles were updated yearly as they drew closer to retirement. Table 1 provides an overview of the variable construction, and Table 2 displays the descriptive statistics for the sample.

Results

In Table 3, we used a semiparametric event-history model to assess the influence of social connectedness on the transition from work to retirement. The base model (Model 1) contains sociodemographic covariates. As expected, although men in West Germany remained employed until relatively late in life, women in East Germany retired earliest. East German men and West German women were found somewhere in between. The gender effect also corresponds with previous findings (Rinklake & Buchholz, 2011). Unemployment history, as well as the number of working years, is positively related with the pace of work–exit transitions. By contrast, good health is related with later withdrawal from work. Social class differentials are consistent with previous research on Germany (Rinklake & Buchholz, 2011). The number of children and the presence of a household member that needs constant care did not yield statistically significant effects. In line with previous work (Moen et al., 2005), people with a spouse not in the labor force retired earlier compared with married persons with a working spouse.

In Model 2, we added our measures of social connectedness. A higher contact frequency with friends, neighbors, and relatives, that is, informal participation, leads to anticipated labor market withdrawal. Formal participation in the form of volunteering activities and participating in local politics has the opposite effect: those who are heavily involved in civic life retire later. The magnitude of the effects is substantial: the difference between meeting friends and relatives never and at least once a week raises the pace of retirement by 16% (calculated as $[1.05^3 - 1]*100$). When we compare weekly contact with "less than monthly" contact, the estimated difference in transition rates is still 11% ($[1.05^3 - 1.05]*100$). The difference from the minimum to

Table 3. Survival Analysis Results, Piecewise-Constant Exponential Model of the Timing of Retirement

	Model 1: Base model		Model 2: M1 + Social connectedness		Model 3: M2 + income and home owner		Model 4: M2 + age specific social connectedness		Model 5: M3 + age specific social connectedness	
	hr	*SE*	hr	*SE*	hr	*SE*	hr	*SE*	hr	*SE*
Informal participation			1.050**	(.019)	1.051**	(.019)				
Formal participation			.943***	(.015)	.939***	(.015)				
Informal participation, Age 50–59							1.005	(.025)	1.006	(.025)
Informal participation, Age 60 +							1.101***	(.029)	1.104***	(.029)
Formal participation, Age 50–59							.910***	(.021)	.908***	(.021)
Formal participation, Age 60 +							.971	(.020)	.966	(.020)
Home owner					.999	(.033)			.999	(.033)
Net labor income (ln)					.889***	(.019)			.889***	(.019)
Sociodemographics (reference male, West Germany)										
Male, East Germany	1.138**	(.053)	1.152**	(.054)	1.061	(.052)	1.153**	(.054)	1.062	(.052)
Female, East Germany	1.451***	(.073)	1.433***	(.073)	1.260***	(.071)	1.430***	(.073)	1.257***	(.071)
Female, West Germany	1.273***	(.052)	1.249***	(.052)	1.148**	(.051)	1.249***	(.052)	1.147**	(.051)
Foreign born	1.019	(.045)	.984	(.044)	.994	(.046)	.984	(.044)	.995	(.046)
Family situation (reference married, spouse working)										
Married, spouse inactive	1.353***	(.045)	1.351***	(.045)	1.370***	(.046)	1.351***	(.045)	1.371***	(.046)
Divorced or separated	1.040	(.064)	1.032	(.063)	1.053	(.065)	1.027	(.063)	1.047	(.065)
Single	1.175	(.110)	1.158	(.108)	1.178	(.111)	1.150	(.108)	1.170	(.110)
Widowed	1.215**	(.086)	1.209**	(.086)	1.223**	(.087)	1.204**	(.085)	1.217**	(.086)
Number of children	.980	(.011)	.979	(.011)	.981	(.011)	.979	(.011)	.980	(.011)
Person in HH dependent on care	1.094	(.086)	1.106	(.087)	1.100	(.086)	1.105	(.087)	1.100	(.086)
Satisfaction with health	.905***	(.006)	.905***	(.006)	.906***	(.006)	.905***	(.006)	.906***	(.006)
Social class (reference unskilled worker)										
High service	.688***	(.039)	.700***	(.039)	.783***	(.047)	.699***	(.039)	.782***	(.047)
Low service	.832***	(.039)	.848***	(.040)	.911	(.045)	.849***	(.040)	.913	(.045)
Routine nonmanual	.881*	(.056)	.894	(.057)	.944	(.061)	.894	(.057)	.944	(.061)
Routine service sales	1.022	(.054)	1.030	(.055)	1.052	(.056)	1.032	(.055)	1.054	(.056)
Self-employed	.528***	(.034)	.536***	(.034)	.561***	(.036)	.538***	(.034)	.563***	(.037)
Skilled manual	1.123*	(.053)	1.122*	(.053)	1.148**	(.054)	1.126*	(.053)	1.151**	(.055)
Work experience	1.008***	(.002)	1.007***	(.002)	1.009***	(.002)	1.007***	(.002)	1.009***	(.002)
Unemployment experience	1.073***	(.008)	1.073***	(.008)	1.067***	(.008)	1.073***	(.008)	1.067***	(.008)
Age interval (reference age 50–55)										
Age 55–59	2.663***	(.130)	2.664***	(.130)	2.688***	(.131)	2.664***	(.130)	2.687***	(.131)
Age 60	5.613***	(.352)	5.627***	(.353)	5.642***	(.354)	4.524***	(.436)	4.525***	(.436)
Age 61–64	6.378***	(.362)	6.396***	(.364)	6.401***	(.364)	5.114***	(.480)	5.105***	(.478)
Age 65	11.878***	(1.002)	11.938***	(1.007)	11.679***	(.987)	9.496***	(1.077)	9.268***	(1.051)
Age 66–69	6.479***	(.543)	6.504***	(.546)	6.153***	(.521)	5.163***	(.586)	4.870***	(.556)
Age 70 and older	7.411***	(.859)	7.453***	(.865)	7.179***	(.834)	5.921***	(.820)	5.686***	(.789)
Birth cohort (reference born 1940/1949)										
Born 1920/1929	.470***	(.025)	.471***	(.025)	.425***	(.024)	.475***	(.025)	.429***	(.024)
Born 1930/1939	1.072*	(.037)	1.072*	(.037)	1.002	(.037)	1.071*	(.037)	1.001	(.037)
Born 1950/1959	.616***	(.037)	.616***	(.037)	.637***	(.039)	.619***	(.037)	.639***	(.039)
Log likelihood	−4789.313		−4779.678		−4765.432		−4773.834		−4759.563	
AIC	9636.627		9621.356		9596.864		9613.668		9589.127	
BIC	9895.097		9897.652		9890.985		9907.790		9901.074	
Royston & Sauerbrei R^2	.331		.332		.334		.333		.335	

Note. Coefficients are hazard ratios (standard errors [*SE*] of estimates in brackets). R^2 calculated following Royston (2006). $N = 54{,}873, 4{,}575$ events. Source: German Socioeconomic Panel Study-1985–2009.
*$p < .05$. **$p < .01$. ***$p < .001$, two-tailed tests.

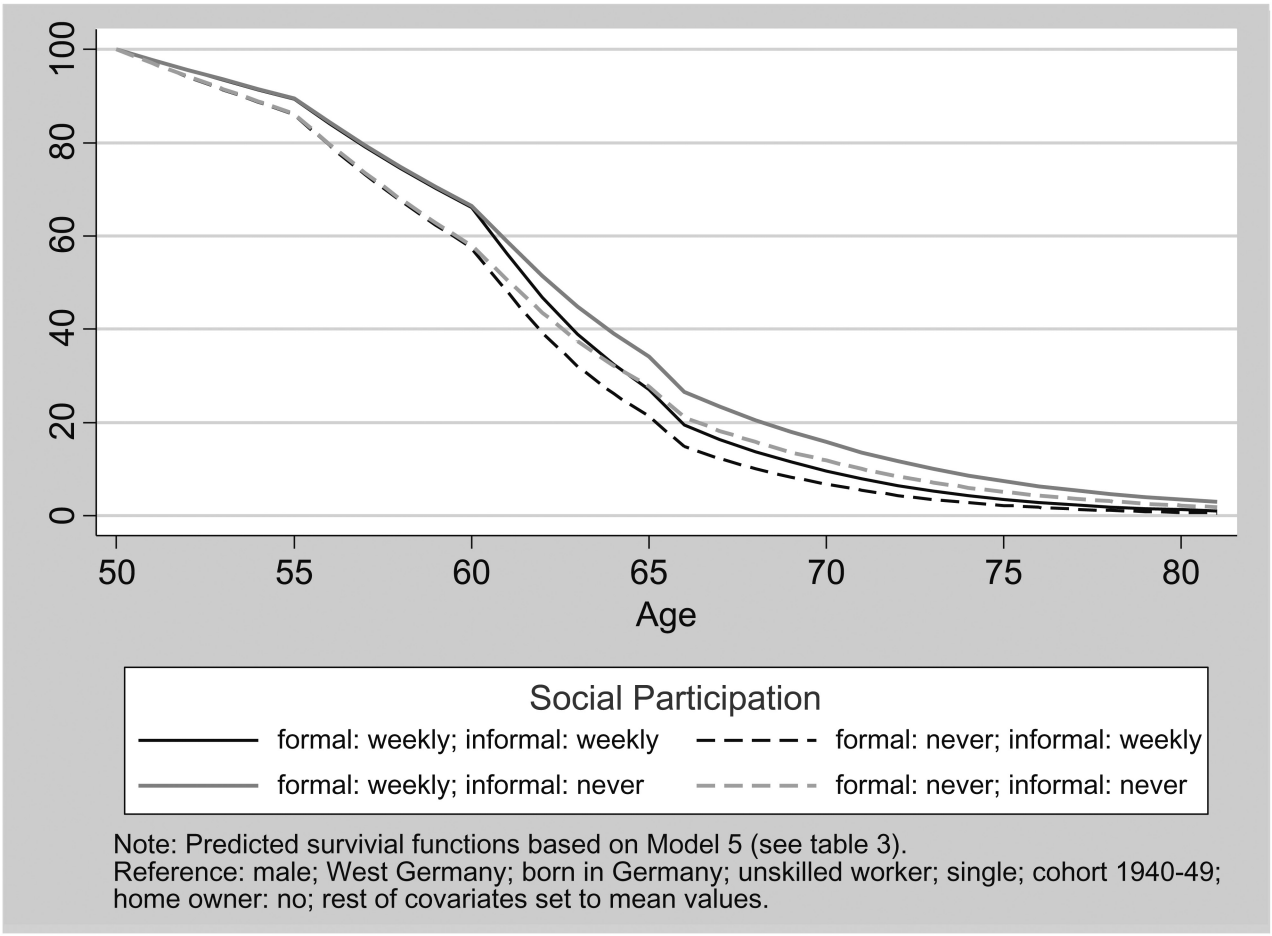

Figure 1. Predicted survival curves of exit from employment by social participation.

the maximum of formal participation decelerates retirement by 16% ([0.943^3 – 1]*100). We tested for a multiplicative effect of formal and informal participation by including an interaction term, but this was not statistically significant. Thus, we treated the two variables as additive.

To better account for financial incentives to retire, we included workers' net wage and a dichotomous variable for home ownership in Model 3. Although the latter is not statistically significant, the negative effect of labor income most likely reflects the lower incidence of involuntary exit from work among high wage earners. In any case, the coefficients and standard errors corresponding to the social connectedness variables remain largely unaltered.

The model diagnostics that were carried out reveal that the proportional hazard assumption does not hold for the variables of interest. Therefore, in columns 4 and 5, we present a set of models that depart from the assumption of constant hazards. More specifically, we allow the effects of formal and informal participation to vary across the intervals of the analysis time (Bernardi, 2001). In other words, we examine whether the effect of social connectedness is age dependent. Model 4 shows that the effect of formal participation is only statistically significant in the workers' 50s and not afterward. As for informal participation, in contrast, the effect increases with age. Although the number of contacts with friends and relatives does not have any relevance for retirement patterns for workers younger than 60 years of age, after that threshold, the effect size is even larger than in Model 3.

In Model 5, we see that these age-specific patterns are independent of the shape of age-wage curves, as the inclusion of net labor income does not significantly alter the results. Effect sizes are considerable: the retirement propensity of a worker over 60 of age with "at least weekly contact" is 35% ([1.104^3 – 1]*100) higher than that of a worker without any informal participation and still 24% ([1.104^3 – 1.104]*100) higher than for someone with "less than monthly" contact; a maximal difference in the frequency of formal participation accounts for a difference in instantaneous transition rates of 25% ([0.908^3 – 1]*100) among workers younger than 60 years.

In Figure 1, we use the estimates from Model 5 to plot predicted survival curves for the different combinations of

high and low levels of formal and informal participation. The figure shows that until the age of 60, what matters is the contrast between high and low formal participation. The survival curves diverge: a larger share of people that are engaged in voluntary work remain employed than among those who do not do any volunteering, and this difference increases until reaching 9 percentage points at the age of 60, irrespective of levels of informal participation. However, from the age of 60 onward, people with high levels of informal participation—who meet their friends, neighbors, and relatives at least once a week—retire at a much higher pace than people with no informal contacts. As a consequence of this pull effect, when approaching age 65, the share of employed persons among people with a high degree of informal participation is more than 7 percentage points lower than among workers without informal participation.

To test the robustness of our findings, we estimated the models on various subsamples (men and women, West Germany only, different time periods), but the results did not differ substantially. The effect of social connectedness could also differ across birth cohorts due to changing sociocultural context (Cozijnsen et al., 2010), or because of historically varying generosity of early-retirement pathways (Blossfeld et al., 2011). We tested this idea by including interaction terms between birth cohorts and social connectedness, but could not find any significant differences.

Discussion

In this paper, we analyzed whether social connectedness affects the transition from work to retirement. Thus far, no study has presented longitudinal evidence as to how social connectedness is related to labor market withdrawal. Social connectedness is differentiated into formal and informal participation. Based on the activity-substitution hypothesis, we expected that informal participation increases the demand for leisure time and, hence, triggers a substitution process resulting in earlier retirement for well-connected people. Similarly, role theory leads to the expectation of early retirement among workers with high levels of formal participation. Conversely, the complementarity hypothesis predicts that, to the extent that social connectedness and work attachment are driven by a general predisposition to participate in social life, be it formally or informally, the two kinds of activities are likely to be complementary.

Our findings show that social connectedness influences the transition from work to retirement, but these effects depend on age. After age 60, the transition rate is 35% higher among workers who frequently meet with friends and relatives than among workers without informal participation. The corresponding difference in predicted employment rates becomes larger than 7 percentage points. Between 50 and 59 years, when retirement is often involuntary, this effect was not statistically significant. This age-graded effect is in line with socioemotional selectivity theory, which stipulates that as time horizons shrink, people increasingly value emotional goals and activities (Carstensen et al., 1999). Well-connected older workers may thus substitute leisure time for work and retire early. Furthermore, after age 60, the degree of control over the retirement decision is greater. This pattern supports the idea that older workers deliberately retire early to enjoy a socially rich third age. We interpret it as evidence for the importance of informal social relations for people's work–leisure orientations. The underlying mechanism might, however, not only be a changing demand for leisure. People with frequent contacts may also be subject to peer-group effects of retired friends and family members who pressure them to leave their job.

Conversely, formal participation is associated with later retirement, although only among individuals younger than 60. Among workers in their 50s, being active in civic and voluntary associations is associated with a 25% reduction in retirement propensities compared to people who are not involved in formal associations. This amounts to a 9-percentage point increase in predicted age-specific employment rates. In line with the complementarity hypothesis, formal participation represents an indicator of self-selection into active aging. Although more engaged people remain attached to their work until late in life, less engaged persons withdraw from work much sooner. For people with high levels of formal participation, work and leisure are not competing activities but are closely intertwined. Put differently, the boundary between work and formal participation may be blurred (see also Ekerdt, 2010). In line with continuity theory, combining work and volunteering can be seen as a way of holding on to one's accustomed social roles.

Because the effect disappears after age 60, when workers have more control over their withdrawal from work, we reject a purely choice-based interpretation. The finding that volunteering and employment are complementary activities in late working life is in line with the studies by Wilson and Musick (1997, 2003). Although their analyses focus on early adulthood and midlife, our results suggest that there are also labor-market benefits to volunteering for older workers. Because it enhances job-relevant skills, formal participation could help reduce the risk of involuntary retirement. It could also be speculated that the low risk of early retirement among workers with high levels of formal participation indicates a reward on the behalf of employers who recognize the value of voluntary work. Employers may even actively encourage civic participation for reasons related to company image or lobbying, which would seem more likely in higher status jobs. However, further robustness checks involving interaction effects showed that the effect of formal participation was not significantly different across social classes.

It could be that the effect of informal participation that we observe is due to people investing in relations in anticipation of retirement. Possibly, people do not retire earlier because of their active social life, but they become more socially active because they know that retirement is near.

However, given existing time restrictions and established daily routines among older workers, it is unlikely that the entire effect we observe is due to anticipation. As Cornwell and colleagues (2008) suggest, changes in social participation are more likely to occur after retirement than before. This is supported by our data; the level of informal participation is relatively stable over the life course and, more importantly, does not go up in the years before retirement. Furthermore, we carried out robustness checks by including within-individual changes of informal participation in the models (not shown here). This covariate did not significantly affect the timing of retirement. It seems therefore unlikely that reversed causality biases our results.

To the extent that social connectedness affects the timing of retirement, retirees should be seen as a self-selected group. This selection process has implications for studies on the patterns of social connectedness among the retired population. For example, Cornwell and colleagues (2008) find that retirees have higher levels of informal participation. In view of our findings, this is not necessarily because retirement triggers social activities; it may instead be due to these social activities fostering an early transition into retirement. Furthermore, it is important to separate retirement as a transition from retirement as a state (Bossé, Aldwin, Levenson, Spiro, & Mroczek, 1993). It is possible that, on the one hand, formal participation is lower for people in the labor force than it is for retirees (Hank & Stuck, 2008), whereas on the other hand, older workers who volunteer retire later than older workers who do not.

It should be emphasized that this study did not examine the relationship between retirement timing and active aging. Particularly, informal participation as measured here does not necessarily imply that social interactions are meaningful. Nevertheless, employment, civic engagement, and informal social contacts are three central elements of active aging (United Nations, 2002: 16) and the way older people combine different productive activities has important implications for the challenges of aging societies. Therefore, the empirical support for the complementarity hypothesis is good news for a policy strategy aiming at fostering active aging across life domains: there seems to be no adverse effects of unpaid work on prolonged employment. Rather than being substitutive, volunteering, and employment in later life are complementary. In view of these results, the promotion of workers' participation in the public sphere is a potentially promising policy strategy.

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References

Barnes, H., & Parry, J. (2004). Renegotiating identity and relationships: Men and women's adjustments to retirement. *Ageing & Society*, *24*, 213–233.

Bernardi, F. (2001). Is it a timing or a probability effect? Four simulations and an application of transition rate models to the analysis of unemployment exit. *Quality and Quantity*, *35*, 231–252.

Blossfeld, H.-P., Buchholz, S., & Kurz, K. (Eds.). (2011). *Aging populations, globalization and the labor market: Comparing late working life and retirement in modern societies*. Cheltenham: Edward Elgar.

Bossé, R., Aldwin, C. M., Levenson, M. R., Spiro, A., & Mroczek, D. K. (1993). Change in social support after retirement: Longitudinal findings from the normative aging study. *The Journals of Gerontology, Series B: Psychological Sciences*, *48*, 210–217.

Burr, J. A., Mutchler, J. E., & Caro, F. G. (2007). Productive activity clusters among middle-aged and older adults: Intersecting forms and time commitments. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *62*, 267–275.

Carstensen, L., Isaacowitz, D., & Charles, S. (1999). Taking time seriously. A theory of socioemotional selectivity. *American Psychologist*, *54*, 165–181.

Cornwell, B., Laumann, E., & Schumm, P. (2008). The social connectedness of older adults: A national profile. *American Sociological Review*, *73*, 185–203.

Cozijnsen, R., Stevens, N. L., & Van Tilburg, T. G. (2010). Maintaining work-related personal ties following retirement. *Personal Relationships*, *17*, 345–356.

Dentinger, E., & Clarkberg, M. (2002). Informal caregiving and retirement timing among men and women: Gender and caregiving relationships in later midlife. *Journal of Family Issues*, *23*, 857–879.

Drobnič, S. (2002). Retirement timing in Germany: The impact of household characteristics. *International Journal of Sociology*, *32*, 75–102.

Ebbinghaus, B. (2006). *Reforming early retirement in Europe, Japan, and the USA*. Oxford: Oxford University Press.

Ekerdt, D. J. (2010). Frontiers of research on work and retirement. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *65*, 69–80.

Gramlich, T. (2007). *Analyse der Panelausfälle im SozioOekonomischen Panel SOEP*. Diplomarbeit, Konstanz: Universität Konstanz.

Gruber, J., & Wise, D. (Eds.). (2004). *Social security programs and retirement around the world: Micro-estimation*. Chicago, IL: The University of Chicago Press.

Hank, K., & Stuck, S. (2008). Volunteer work, informal help, and care among the 50+ in Europe: Further evidence for 'linked' productive activities at older ages. *Social Science Research*, *37*, 1280–1291.

Henkens, K. (1999). Retirement intentions and spousal support: A multi-actor approach. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *54*, 63–73.

Knuth, M., & Kalina, T. (2002). Early exit from the labour force between exclusion and privilege: Unemployment as a transition from employment to retirement in West Germany. *European Societies*, *4*, 393–418.

Kohli, M., Hank, K., & Künemund, H. (2009). The social connectedness of older Europeans: Patterns, dynamics and contexts. *Journal of European Social Policy*, *19*, 327–340.

Kohli, M., & Künemund, H. (2010). Social networks. In L. Bovenberg, A. Van Soest, & A. Zaidi (Eds.), *Ageing, health and pensions in Europe: An economic and social policy perspective* (pp. 141–167). Basingstoke: Palgrave.

Kroh, M., & Spieß, M. (2008). *Documentation of sample sizes and panel attrition in the German Socio Economic Panel (SOEP) (1984 until*

2007). (Data Documentation, No. 39). Berlin, Germany: Deutsches Institut für Wirtschaftsforschung.

Lancee, B., & Van de Werfhorst, H. G. (forthcoming). Income inequality and participation: A comparison of 24 European countries. *Social Science Research*, doi:10.1016/j.ssresearch.2012.04.005

Lee, G. (1988). Marital satisfaction in later life: The effects of nonmarital roles. *Journal of Marriage and Family*, *50*, 775–783.

Lin, N. (1999). Social networks and status attainment. *Annual Review of Sociology*, *25*, 467–487.

Mika, T., & Baumann, J. (2008). Soziale Konsequenzen der Abschaffung des Vorruhestands für Langzeitarbeitslose. *WSI-Mitteilungen*, *2008*, 605–611.

Moen, P., Sweet, S., & Swisher, R. (2005). Embedded career clocks: The case of retirement planning. In R. Macmillan (Ed.), *The structure of the life course: Standardized? Individualized? Differentiated?* (pp. 237–265). Amsterdam, The Netherlands: Elsevier.

Mouw, T. (2003). Social capital and finding a job: Do contacts matter? *American Sociological Review*, *68*, 868–898.

Mutchler, J. E., Burr, J. A., & Caro, F. G. (2003). From paid worker to volunteer: Leaving the paid workforce and volunteering in later life. *Social Forces*, *81*, 1267–1292.

Pichler, F., & Wallace, C. (2009). Social capital and social class in Europe: The role of social networks in stratification. *European Sociological Review*, *25*, 319–332.

Quick, H., & Moen, P. (1998). Gender, employment, and retirement quality: A life course approach to the differential experiences of men and women. *Journal of Occupational Health Psychology*, *3*, 44–64.

Radl, J. (forthcoming). Labour market exit and social stratification in Western Europe: The effects of social class and gender on the timing of retirement. *European Sociological Review*, doi:10.1093/esr/jcs045

Rinklake, A., & Buchholz, S. (2011). Increasing inequalities in Germany: Older people's employment lives and income conditions since the mid-1980s. In H.-P. Blossfeld, S. Buchholz, & K. Kurz (Eds.), *Aging populations, globalization and the labor market: Comparing late working life and retirement in modern societies*. Cheltenham: Edward Elgar.

Royston, P. (2006). Explained variation for survival models. *Stata Journal*, *6*, 83–96.

Ruiter, S., & De Graaf, N. D. (2006). National context, religiosity, and volunteering: Results from 53 countries. *American Sociological Review*, *71*, 191–210.

Szinovacz, M. E., DeViney, S., & Davey, A. (2001). Influences of family obligations and relationships on retirement. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *56*, 20–S27.

United Nations. (2002). *Report of the second world assembly on ageing* (A/CONF.197/9). New York: United Nations.

Van Solinge, H., & Henkens, K. (2007). Involuntary retirement: The role of restrictive circumstances, timing, and social embeddedness. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, *62*, 295–303.

Van Tilburg, T. (2003). Consequence of men's retirement for the continuation of work-related personal relationships. *Ageing International*, *28*, 345–358.

Van Tilburg, T., & Van Groenou, M. B. (2002). Network and health changes among older Dutch adults. *Journal of Social Issues*, *58*, 697–713.

Wagner, G. G., Burkhauser, R., & Behringer, F. (1993). The English language public use file of the German Socio-Economic Panel. *Journal of Human Resources*, *28*, 429–433.

Weiss, R. (2005). *The Experience of Retirement*. New York: Cornell University Press.

Wilson, J., & Musick, M. (1997). Work and volunteering: The long arm of the job. *Social Forces*, *76*, 251–272.

Wilson, J., & Musick, M. (2003). Doing well by doing good: Volunteering and occupational achievement among American women. *Sociological Quarterly*, *44*, 433–450.