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Shared friendship networks and the life course: an analysis of survey data on married and cohabiting couples

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Abstract

The dyadic withdrawal hypothesis argues that friendship networks become smaller when people enter a cohabiting relationship and that friendship networks become more overlapping with the partner during the course of the relationship. This hypothesis has received fragmented support in earlier research and has not been tested in The Netherlands. A nationally representative data set is analyzed which includes information on the five best friends of the respondent. A special feature of the data is that both partners were interviewed which allows us to check whether the friends reported by the respondent were also reported by the partner. In contrast to earlier studies, a broad set of life course stages is compared: single, dating, married (or cohabiting) without children, married with children, and the empty nest stage. Bivariate results and multilevel regression analyses indicate that friendship networks become smaller over the life course, although these changes primarily occur when people start dating and enter wedlock. Later changes are dominated by a simple age effect. For overlap, the models show that the percentage of shared friends and the number of joint contacts increase over the life course, both in a stepwise fashion and in a continuous fashion due to the aging process. In addition, shared friendship and joint contacts become more strongly related when people start living together. Implications for two underlying theoretical mechanisms are discussed, the competition principle and the balance principle.

Keywords: Networks; Marriage; Life course; Friendship; Aging

1. Introduction

The relationship between family forms on the one hand, and social networks on the other, has received considerable attention from both family researchers and social network

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researchers (e.g. Bott, 1957; Dykstra, 1990; Hurlbert and Acock, 1990; Kalmijn, 2002; Knipscheer et al., 1995; Milardo and Allan, 2000; Moore, 1990; Morgan et al., 1996; Munch et al., 1997). An important question in this area is how networks change in size and composition as people move through the life course stages. One of the hypotheses about this relationship argues that after marriage or cohabitation, people have fewer contacts with others, and in particular with the more intimate segments of their network. In addition, people would see their friends less often alone, without the partner, and partners would slowly develop a joint social network as the marriage progresses. In short, marriage and cohabitation would lead to smaller and more overlapping social networks, a phenomenon originally called 'dyadic withdrawal' (Johnson and Leslie, 1982; Milardo, 1982; Surra, 1985; Stein et al., 1992).

The notion of dyadic withdrawal is interesting for several reasons. First, it tells us something about how the family is positioned in society. Small and overlapping social networks have often been associated with the 1950s, a period in which the nuclear family was believed to be closed and introvert (Bott, 1957; Cherlin, 1992). Family members were highly dependent on each other and the family was believed to provide a 'safe haven' to its members. Large and separated networks, on the other hand, have been associated with the era of individualism in more recent times. Couples would now be oriented more toward individual autonomy and separate friendships or separate leisure pursuits are often interpreted as an expression of this orientation.

A second reason why dyadic withdrawal is important is that joint social networks are a form of marital capital. By having friends in common, spouses become more dependent on each other because the utility they derive from their friends is tied up with the partner. The so-called exit-costs of the marriage are higher because both spouses tend to lose more friends after a divorce if they have most of their friends in common (Milardo, 1987; Broese van Groenou, 1991; Kalmijn and Bernasco, 2001). In this sense, the social networks of couples are comparable to other and better known forms of marital capital, such as children and economic task specialization (Brines and Joyner, 1999; Huber and Spitze, 1988; Waite and Lillard, 1991).

A third and related reason for interest in couple networks is that shared personal networks of husbands and wives provide an environment of value consensus for the couple, which may lead to more traditional sex roles in the family (Bott, 1957), or at least to more norm-conform patterns of behavior (Milardo and Allan, 2000).

Dyadic withdrawal has been examined in sociological and social–psychological studies. Sociological studies have focused on the life course and have made comparisons between single persons, married persons, and married persons with and without children (Fischer and Oliker, 1983; Moore, 1990; Hurlbert and Acock, 1990; Van der Poel, 1993; Diewald, 1993; Munch et al., 1997). Social–psychological studies focus primarily on relationships of young adults and make comparisons between young people who are dating or not dating and between dating relationships varying in length or intensity (Johnson and Leslie, 1982; Milardo, 1982; Parks et al., 1983; Rusbult, 1983; Surra, 1985; Fischer et al., 1989; Stein et al., 1992; Kim and Stiff, 1991).

The two approaches have their own advantages and disadvantages. An advantage of sociological studies is that they analyze large and random samples from the population, whereas social–psychological studies use small and selected samples, usually consisting of

college students. An advantage of social–psychological studies is that they contain good measures of the degree to which couples share social contacts and the degree to which they like each other's friends. Sociological studies mostly focus on the size and composition of people's networks, without relating this explicitly to the spouse.

In this study, I re-examine the dyadic withdrawal hypothesis using data that combine the advantages of sociological and social–psychological designs. More specifically, I analyze a large and nationwide survey among couples and single persons in The Netherlands. These data contain a series of questions about the five best friends that people have. Both spouses were interviewed and it can be assessed whether friends were mentioned by both spouses or by just one of the two spouses. The data thus allow us to assess the degree of network overlap of couples, something that is relatively unique for population surveys. An additional feature of the data is that they cover a wide range of the life course. Not only is it possible to compare life course stages that sociologists have examined—single, married, children, divorced—there also is information on dating relationships, something which typically only social–psychological studies have considered.

2. Background and theory

What evidence has thus far been accumulated for the dyadic withdrawal hypothesis? Sociological studies have shown that married persons on average have more friends than single persons (Moore, 1990; Diewald, 1993; Van der Poel, 1993), and that among married persons, there is a negative association between the duration of the marriage and the size of the friendship network (Fischer and Oliker, 1983). Although these conclusions are based on cross-sectional comparisons, small-scale longitudinal studies so far have not yielded different results (Wellman et al., 1997). Social–psychological studies generally find that people who begin dating have fewer contacts with friends than others (Johnson and Leslie, 1982; Surra, 1985; Fischer et al., 1989). When the dating relationship becomes more serious, it appears that overlap in the two friendship networks becomes larger, as is indicated by the frequency with which people have contact with the friends of their partner (Milardo, 1982; Kim and Stiff, 1991) and the degree to which people like the friends of their partner (Parks et al., 1983).

Before presenting the analyses, it is important to specify which changes are expected to occur and to discuss what theoretical reasons there are for expecting these changes. First, we would expect a decrease in the number of friends, which means that people have fewer and fewer friends as they enter an intimate relationship, marry, have children, and so on. Second, we expect a decrease in the number of friendship contacts, which means that people have fewer contacts with friends and fewer contacts per friend as they pass through the life course stages. Third, we expect an increase in the overlap of the number of friends that couples have, which means that people more often like the friends of their spouse and more often regard the spouses' friends as their own friends. Fourth and finally, it is expected that there will be an increase in the overlap of the number of contacts that couples have, which means that people more often have contact with the friends of their spouse and less often see their own friends alone, without the spouse.

The life course stages we are concerned with are: entering an intimate relationship, living together with the partner, having children with the partner, the children growing up, and children leaving the parental home. We also consider divorce and remarriage, but the hypotheses will primarily deal with the earlier stages. The dyadic withdrawal hypothesis implies changes over the life course and the question is how these changes look like: which transitions reveal the biggest change and for which characteristic of networks?

The literature has essentially presented two arguments to explain why network changes would occur. First, there is the principle of competition, which argues that friends and spouses fulfill similar functions, thereby competing with each other for the time of ego (Johnson and Leslie, 1982). The implication of this principle is that the friendship network will shrink in the sense that people will have fewer contacts with their friends during the life course. Changes should be most apparent when people begin dating and when people start living together. Children may serve as an additional source of competition, but there may also be some recovery in the number of friendship contacts as children grow older (Munch et al., 1997). Although changes should apply mostly to the number of contacts that people have, they may also lead to a reduction in the number of friends as a byproduct. It is still possible, however, that the number of friends stays the same, while only the amount of time people spend on each friend declines.

In theory, a reduction of the available time for friends can be compensated by seeing one's friends in the company of the spouse, an effect that would increase the share of joint contacts without reducing the total number of contacts. This effect will not occur, however, because the principle of competition works in two ways. The spouse brings friends into the marriage as well, which means that the time the couple has available must be divided. In other words, the friends of the two spouses compete with each other for the shared time of the couple. As a result, one would expect that the reduction in the time people see their own friends alone, can not fully be compensated by an increase in the time they see these friends in the company of the spouse. Note that this form of competition will not operate if there is a high degree of overlap in the networks of the two spouses before they met each other.

The principle of competition also implies differences between men and women. It is well known that the functions of friendship differ for men and women. In line with stereotypical views on gender, research has shown that men are oriented more toward doing activities together, whereas women are more oriented toward emotional support and exchange of intimacy (Aukett et al., 1988; Dykstra, 1990; Stein et al., 1992). It is plausible to assume that the functions of men's friends can be taken over by the wife more easily than the functions of women's friends can be taken over by the husband. If this assumption is true, there will be more competition between friends and the spouse for men than for women. This implies that men will reveal a greater decline in the number of friends than women, and that women will retain more separate friends than men.

A second explanation lies in the well-known balance principle. According to Heider's classic theory, triads between people or between people and/or objects should be transitive (Heider, 1958). More specifically, the product of the three sentiment relationships in a triad—with positive values for liking and negative values for disliking—should be positive. In the present application, a negative product emerges when someone does not like the friend of his or her spouse. Such a situation arouses tension which can be resolved by changing the value in one relationship or by dropping the relationship altogether. This means that the

person will either learn to like the friends of the spouse, or the spouse will discontinue the friendship (Parks et al., 1983). In the former case a positive triad emerges, in the latter case the triad no longer exists.

While the principle of competition says something about the number of contacts and the overlap of contacts, the balance principle says something about the affection people have for others. In other words, competition is about contact, balance is about friendship. The amount of affection for the partner's friends is expected to grow, and this may eventually lead to an increasing number of common friends. Note that the principle of balance does not suggest shrinkage, at least not in the long-term. Even though people may lose some of their own friends during marriage, they gain friends through the spouse as well. Whether these 'imposed' friends will be as important to ego as his or her own friends were before marriage is not clear, however. The total amount of affection that people exchange in friendship networks may decline if the new friends obtained through marriage are less intense than the old friends who were dropped.

3. Methods and preliminary findings

I use data from a nationally representative survey in The Netherlands (Weesie et al., 1995). In this survey, people were interviewed at home using structured face-to-face interview schedules as well as self-completion booklets. When respondents were living together (married or cohabiting), both spouses were interviewed independently with nearly identical questionnaires. I selected respondents who were younger than 65. The number of individual respondents in the analysis is 2977 and these come from 1706 households.

3.1. Network measures

We asked respondents about their five best friends, excluding the spouse or dating partner and excluding possible children. Respondents were allowed to give as many names as they wished, with a maximum of five. Since the theoretical focus in this paper is on friends, the term 'best friends' seems a logical choice to delineate the network, even though there are other ways to define affective ties. Note that the term friend may mean different things to different people. Research has shown, however, that demographic characteristics have few systematic effects on which (close) network members people label as friends (Fischer, 1982, p. 297). We subsequently asked questions about the characteristics of each friend, the frequency of contact with the friend, and the relationship of the friend with the partner (spouse or dating partner). Identical questions were asked to the spouse. Partners who were not living with the respondent were not interviewed.

The first network measure is simply the number of reported friends. Of married or cohabiting persons who reported at least one friend, the average is 3.3 (Table 1). On average, 20% of these are family members, 11% are neighbors, and 8% are colleagues. The remainder are simply friends, with no specific role relationship to the respondent. Important to observe is that about 7% of the respondents did not report any friends. Following earlier practice (Moore, 1990), these people are left out of the analysis. This would not be appropriate if such persons have zero friends, but additional analyses suggest that this is implausible.

Table 1
Characteristics of friendship networks

Total number of friends	3.3
Own friends (%)	42
Shared friends (%)	58
Asymmetrically shared (%)	43
Symmetrically shared (%)	15
Total number of monthly contacts	7.3
Contacts per friend	2.3
Separate contacts (%)	41
Joint contacts (%)	59
Joint contacts with own friends (%)	18
Joint contacts with shared friends (%)	41

Note: Percentages based on cohabiting individuals ($N = 2717$).

Persons who did not answer the network questions were significantly less positive about the interview and answered a significantly smaller number of attitude questions later on in the interview. In other words, these persons reported no friends because they were uninterested in the interview and not because they had no friends.

The second measure is the number of contacts with friends. This is based on a question about the frequency with which respondents saw or spoke the particular friend. The answering categories were recoded to the approximate number of monthly contacts, i.e. 4.3 for about once a week, 1 for about once a month, 0.3 for about once a year, and 0 for less often. Results show that people see or talk to their friends about seven times a month (Table 1). The average per friend is a little over two.

The third measure is the degree of shared friendship. Two methods are used to measure this type of overlap. We first asked respondents whether they thought that their friend was also a friend of the partner. If respondents answered 'definitely' or 'likely,' I count the friend as shared. Second, it was assessed whether the friends reported by the respondent were also reported by the spouse as among his or her five best friends. This assessment was based on a computing procedure developed by Bernasco (1996) who used information on initials, first names, age, and marital status to match the friends. The second measure of shared friends is more stringent than the first because it means that the friend belongs to the best five of both spouses. Additional analyses indicate that friends in the second group are indeed a subset of the friends in the first group. Of the friends who are perceived by the respondent as a friend of the spouse, only 58% could be found in the spouse's list. Of the friends who are in the list of both spouses, more than 90% were also perceived by the respondent as a friend of the spouse.

Given these results, it seemed logical to create a typology of three types of friends: symmetrically shared friends, asymmetrically shared friends, and own friends. Symmetrically shared friends are friends of whom the respondent thinks they are friends of the spouse and whom are also reported by the spouse in his or her own list. Asymmetrically shared friends are friends of whom the respondent thinks they are friends of the spouse but who are not reported by the spouse. Own friends, finally, are friends who are reported by the respondent and of whom the respondent thinks they are not friends of the spouse. The data show that

58% of people's friends are shared with the partner. Of all friends, 43% are asymmetrically shared and only 15% are symmetrically shared (i.e. mentioned independently by both spouses).

Shared friends do not differ with respect to the role relationship they have to the respondent. Own family members are just as likely to be shared with the spouse as are friends or neighbors. The only exception is that colleagues are less likely to be shared as a friend with the spouse (either symmetrically or asymmetrically).

The fourth and final variable measures the degree of joint friendship contacts. We asked respondents "When you have contact with this person, how often is this in the company of your spouse? Always, mostly, seldom, or never?" To create a scale, I recoded the four answering categories to proportions (1 for always, 0.8 for mostly, 0.2 for seldom, and 0 for never). Using this scale, I developed a measure of the number of separate contacts and the number of joint contacts. These calculations show that 59% of the contacts are joint. The exact percentage obviously depends on the recoding scheme that is being used but the percentage is more than 50 for all reasonable recoding schemes.

As would be expected, there is a correlation between the probability that contacts with a particular friend are joint and the degree to which the particular friend is (perceived as) shared, but this correlation is far from perfect ($r = 0.42$). Interesting also is that the correlation between joint contact and shared friendship is lower for family members ($r = 0.21$) than for neighbors ($r = 0.45$) or others friends ($r = 0.43$). In other words, when people often see their own family members in the company of the spouse, this says little about how much the spouse likes these family members. This clearly reflects the lower degree of voluntarism in interactions with inlaws than in interaction with friends.

The calculations just presented are based on individuals: single respondents are included and for couples, both men and women are included. An alternative is to present the measures for couples. These measures are instructive for descriptive reasons but they are less useful for testing the dyadic withdrawal hypothesis. The hypothesis applies to what happens to individuals as they move through the life course. Couple measures show that couples have an average of 5.6 friends. Of these, 40% are friends of the husband only, 47% are friends of the wife only, and 11% are symmetrically shared.

3.2. Independent variables and models

To examine the influence of the life course on friendship networks, eight mutually exclusive groups of respondents are distinguished:

- single persons without an intimate (dating) relationship;
- single persons with an intimate (dating) relationship (of more than 3 months),
- married/cohabiting persons without children;
- married/cohabiting persons with young children (the youngest being younger than 6);
- married/cohabiting persons with older children (the youngest being older than 6);
- married/cohabiting persons whose children have left home (empty nest);
- divorced persons who are not living with a partner (including breakups of long cohabiting relationships);
- persons who remarried or are living with a partner after a divorce.

For persons who experienced a divorce, one could in principle make more distinctions, but the number of divorcees in the sample is too small to do that. Note also that divorce and remarriage can not be placed well in the sequence of stages. Divorce can occur after each of the four married/cohabiting stages.

To test the hypothesis, I use three multivariate regression models in which network measures are compared across life course stages. The first model only contains life course variables. Rather than using a single reference category, I developed alternative specifications of the model to test theoretically meaningful contrasts. For the first six stages, I test adjacent contrasts which reflect the influence of making the following transitions:

- from being single to dating;
- from dating to living together;
- from living together to having a first child;
- from having a young child to having an older child;
- from having children to the empty nest stage.

These contrasts are tested by switching the reference category. For the last two stages, the following contrasts are used:

- divorced and single versus never married and single;
- remarried/recohabited after divorce versus first married/cohabiting (regardless of child status).

These contrasts test the influence of having been divorced. To make these contrasts, stages are combined in the reference group. Single and dating are combined when comparing to single divorced persons, and all married/cohabiting stages are combined when comparing to remarried persons.

In the second regression model, I include age (and age squared if it is significant). This model allows me to assess whether the effect of the life course is discrete, consisting of several steps and transitions, or whether it is a more continuous process due to the aging of the respondent. To put it simply, is it age or is it stage? Note that the life course dummy-variables correlate with age, but this correlation is not prohibitively strong given the large sample size (the multiple R is 0.74).

In the third model, I include other structural variables which are known to affect the size and composition of networks (Moore, 1990). Variables such as work, income, and place of residence are particularly important because they change over the life course as well. Effects of life course variables on social networks may in theory be attributed in part to structural correlates of the life course. The following variables are included in the model (means and standard deviations are in Table 2):

- socio-economic status—three (separate) indicators, level of completed education, the prestige of the current or most recent occupation, and household income;
- employment—in the equations for network size, information on individual employment is used (represented by a single dummy-variable indicating whether a person works for pay); in the equations for network overlap, information on the couple's employment is used (broken down into three categories: both partners are working for pay, one partner is working for pay, and neither partner is working for pay);

Table 2
Means and percentages of independent variables ($N = 2977$)

	Percentage or mean	*N*
Life course stage (%)		
Single persons without a relationship	5	149
Dating persons	3	76
Living together without having (had) children	27	804
Young children in the household (under 6)	29	866
Older children in the household (over 6)	19	563
Empty nest stage	9	274
Single divorced	1	35
Remarried or recohabited	7	210
Female (%)	50	
Age	37	
Educational level	3.2	
Occupational prestige	46	
Household income (guilders)	3772	
Working for pay (12 h or more)	59	
Dual earner households (couples only, %)	39	
Both spouses not working (couples only, %)	14	
Enrolled in school (%)	12	
Health problems (count of three dichotomous items)	0.37	
Degree of urbanization (1–11)	7.5	

- school enrollment—a single dummy-variable indicating whether a person is enrolled in school;
- health problems—a scale consisting of three indicators (two or more hospital admissions, twice ill for longer than 1 month, evaluating one's own health as "poor");
- urbanization—a characteristic of the current place of residence, on a scale from 1 (for rural) to 11 (for large cities).

Note that the analysis is cross-sectional: I infer life course changes from comparisons of persons who are in different stages of the life course at the time of the survey. Such comparisons can be biased by effects of (birth) cohort. The effect of age will take out most of the possible cohort effects, but the age effect itself can not exclusively be attributed to aging. Prospective designs are more appropriate in theory, but prospective network data are rare. There are some dynamic network datasets but these are less useful for the present purpose because they contain few cases and cover a small span of the life course (e.g. Morgan et al., 1996; Suitor et al., 1997).

4. Life course changes in friendship networks

The life course contrasts are presented in Table 3 for the number of friends and the number of contacts, and in Table 4 for the overlap of friends and for joint contacts. The effects are also presented graphically in Figs. 1 and 2. Effects of the other independent variables are

Table 3
Contrasts between life course stages in network size: tests from multivariate regression models

	Model I: bivariate		Model II: +age		Model III: +structure	
	Men	Women	Men	Women	Men	Women
No. of friends						
Dating vs. single	−0.11	−0.19	−0.13	−0.24	−0.20	−0.38**
Living together vs. dating	−0.24	−0.24	−0.19	−0.22	−0.15	−0.21
Young children vs. living together	−0.16*	−0.09	−0.12**	−0.04	−0.07	0.09
Older children vs. younger children	−0.36*	−0.26*	−0.19*	−0.09	−0.15**	−0.05
Empty nest vs. older children	0.03	−0.18**	0.21**	0.00	0.23*	0.05
Divorced vs. single/dating	−0.56*	−0.26	−0.39	−0.14	−0.25	−0.17
Remarried vs. first marriage	−0.15	−0.13	−0.07	−0.10	−0.08	−0.14
N	1467	1510	1467	1510	1467	1510
No. of contacts						
Dating vs. single	−0.37*	−0.51*	−0.43*	−0.59*	−0.34*	−0.37*
Living together vs. dating	−0.50*	−0.10	−0.37*	−0.08	−0.35*	−0.07
Young children vs. living together	−0.13**	−0.01	0.02	0.06	0.08	0.01
Older children vs. younger children	−0.31*	−0.28*	−0.02	−0.01	0.03	0.03
Empty nest vs. older children	−0.08	−0.39*	0.05	−0.10	−0.05	−0.10
Divorced vs. single/dating	−0.76*	−0.11	−0.46**	0.07	−0.34	0.20
Remarried vs. first marriage	−0.11	−0.13	−0.00	−0.09	0.02	−0.02
N	1467	1510	1467	1510	1467	1510

Note: Tests obtained by switching reference groups. For assessing the divorce effect, dating and single are combined in the reference group. For assessing the remarriage effect, the four married stages are combined in the reference group. Remarriage includes cohabitation.

* $P < 0.05$.

** $P < 0.10$.

presented in Tables 5 and 6. Models are estimated for men and women separately because interaction effects showed that several transition effects are significantly different for men and women. For the overlap indicators, the analysis is limited to people who are in a relationship. For the distinction between symmetric and asymmetric friends, the analysis is limited to people who are living together with a partner.

Fig. 1 shows that the number of friends declines over the life course. The number of friends declines from about four for single men and women to about three for men and women in the empty nest stage. Table 3 confirms this and shows that almost all adjacent contrasts are negative. At the same time, however, Table 3 shows that only two adjacent contrasts are also statistically significant. Hence, even though the total change may be substantial, the stepwise effects are probably too small to become significant. In addition, we see that divorce and remarriage have little impact on the number of friends. Remarried persons do not differ from first married persons, and divorced women do not differ from other single women. For men we do observe an effect: divorced men report significantly fewer friends than other single men.

Table 4
Contrasts between life course stages in network overlap: tests from multivariate regression models

	Model I: bivariate		Model II: +age		Model III: +structure	
	Husbands	Wives	Husbands	Wives	Husbands	Wives
Percentage of shared friends						
Living together vs. dating	0.46*	0.55*	0.43*	0.54*	0.32*	0.28
Young children vs. living together	0.16*	0.01	0.13**	−0.03	0.15*	−0.12
Older children vs. younger children	0.07	0.18*	−0.02	0.04	−0.08	0.01
Empty nest vs. older children	0.42*	0.28*	0.32*	0.12	0.31*	0.07
Remarried vs. first marriage	−0.20*	−0.15	−0.27*	−0.18**	−0.28*	−0.16**
N	1362	1431	1362	1431	1362	1431
Percentage of joint contacts						
Living together vs. dating	0.93*	0.93*	0.93*	0.93*	0.82*	0.72*
Young children vs. living together	−0.04	−0.16*	−0.04	−0.15*	−0.02	−0.12**
Older children vs. younger children	0.05	−0.06	0.05	−0.02	0.04	−0.05
Empty nest vs. older children	0.27*	0.23*	0.27*	0.27*	0.24*	0.23*
Remarried vs. first marriage	−0.08	−0.03	−0.12	−0.04	−0.14	−0.07
N	1361	1427	1361	1427	1361	1427

Note: Tests obtained by switching reference groups. For assessing the divorce effect, dating and single are combined in the reference group. For assessing the remarriage effect, the four married stages are combined in the reference group. Remarriage includes cohabitation.

* $P < 0.05$.

** $P < 0.10$.

When we add age to the model, we observe a strong effect. The older people are, the lower the number of friends they report (Table 5). This effect is observed for both men and women. After age is included, all the life course effects for women are non-significant and only one effect is still significant for men. In other words, when we focus on the number of friends as a measure of network size, it is age rather than stage that is relevant. Adding structural variables to the model does not change this conclusion.

The number of contacts that people have changes over the life course as well. Fig. 1 shows that men's contacts decline from about 14 per month for single men, to about 5 for married men in the empty nest stage. For women, the decline is slower, from 13 to 6. The figure also presents the line for the number of contacts per friend. This decline turns out to be slower than the decline for total contacts. In other words, friendship contacts decline in number, in part because the number of reported friends decreases and in part because the number of contacts per friend decreases.

Table 3 tests these differences and shows that for both men and women, three of the five adjacent contrasts are statistically significant. Entering a dating relationship leads to a significant decline in the number of contacts that people have with their friends. Living together leads to a further decline in friendship contacts, but only for men. Some of the later transitions have significant effects as well, at least in the bivariate model. Divorce and

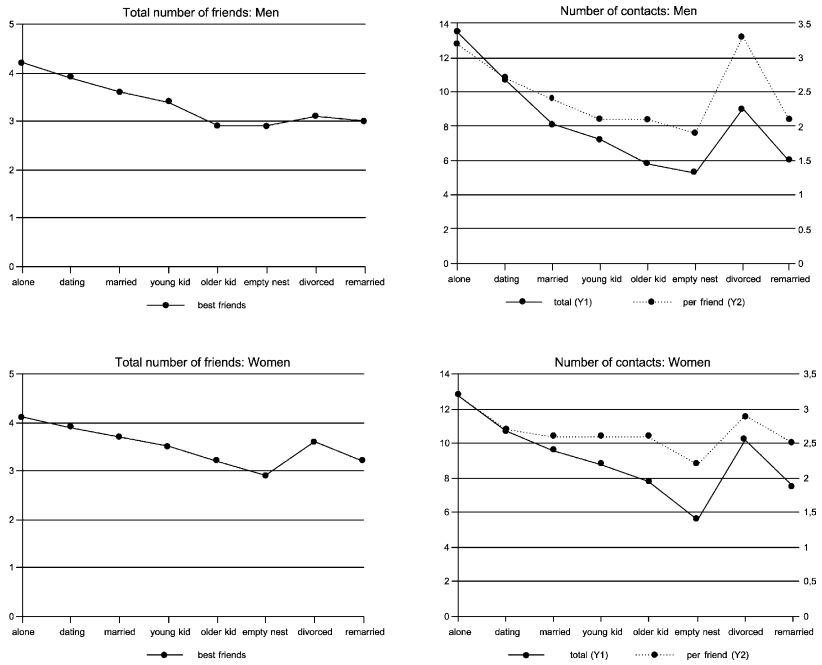

Fig. 1. Differences in the number of friends and the number of contacts by sex and by life course stage.

remarriage do not appear to have strong effects. Divorced men are again an exception: they have fewer contacts than other single men.

When age is added to the model, we again see strong effects. For women, the effect is pretty much linear: the older they are, the fewer contacts they report. For men, the effect is non-linear. The quadratic term is significant and the turning point lies at age 61, which is close to the end of the observed age range (Table 5). Hence, friendship contacts decline continuously but they decline faster during the young ages than during older ages.

The effects of the early transitions remain significant when age is included. Interesting to observe, however, is that the later transitions do not affect contact volume anymore in the second model. In other words, friendship contacts decline in a stepwise fashion when people start dating and begin living together, but for the rest of their life, changes are due to the aging process. Again, we observe that men's contacts are affected more strongly by cohabitation than women's contacts. Structural variables do not lead to a further reduction in the effects that we observe.

Are friends becoming more shared, in other words, is the amount of affection for the partner's friends growing? Among persons who are dating, about 20–25% of the friends are shared (Fig. 2). When people start living together with their partner, about 50% of the friends are perceived as shared. The relative portion of shared friends continues to increase in the following stages, but the change is never as important as it is during the transition from dating to cohabitation. We also observe that the change is less pronounced for women than for men and that women retain a larger portion of separate friends during the life course.

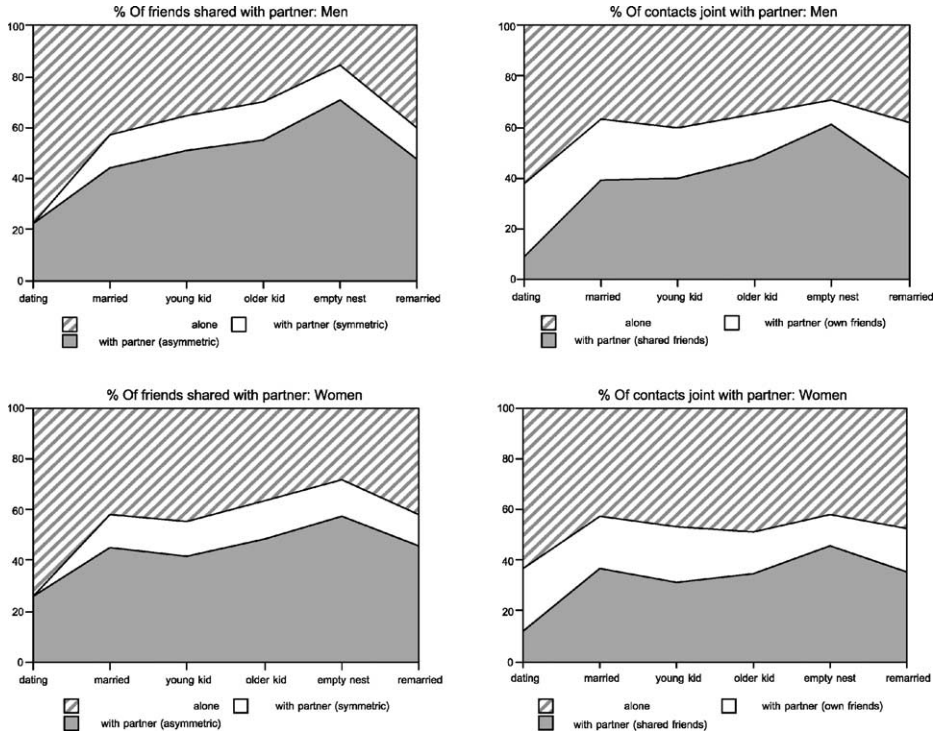

Fig. 2. Differences in the percentage of shared friends and the percentage of joint friendship contacts by sex and by life course stage.

Table 4 tests these changes. All adjacent contrasts are positive and three of the four are statistically significant (for men and women). The effects are sizable although they are strongest for the first transition. The degree to which friends are shared increases strongly when people start living together with their dating partner. The relative portion of shared friends continues to increase in the following stages, but the change is never as important as it is during the transition from dating to cohabitation. We also observe that remarriage has a negative effect, showing that people have fewer shared friends in their second marriage than people have in their first marriage.

The numbers presented in Fig. 2 show that the increase in the overlap of friends is more pronounced for asymmetric friends than for symmetric friends. The percentage of symmetrically shared friends varies from 15% for recently married persons to 17% for married persons in the empty nest stage. The percentage of asymmetrically shared friends, in contrast, increases from 36% for married men without children to 65% for men in the empty nest stage. For women, the percentages increase from 37 to 51%. The absence of a trend for symmetrically shared friends suggests that the effect of the balance principle is limited. People begin to like the friends of their partner, but these rarely make it to the most important friends of ego. Alternatively, one could argue that the balance principle primarily has an effect on ego's beliefs that a friend is shared, without the friend becoming shared in reality.

Table 5
Regression of network size characteristics on life course and structural variables

	No. of friends		No. of contacts	
	Men	Women	Men	Women
Life course stage (single is reference)				
Dating	−0.20	−0.38**	−0.34*	−0.36*
Living together without children	−0.36*	−0.58*	−0.68*	−0.44*
Having young children	−0.43*	−0.49*	−0.60*	−0.39*
Having older children	−0.58*	−0.54*	−0.57*	−0.34*
Empty nest	−0.35*	−0.49*	−0.62*	−0.51*
Divorced and single	−0.31	−0.29	−0.44**	0.10
Remarried	−0.52*	−0.67*	−0.60*	−0.41*
Age of respondent (z-score)	−0.19*	−0.16*	−0.24*	−0.19*
Age of respondent (z-score squared)	–[a]	–[a]	0.06*	–[a]
Educational level (z-score)	0.15*	0.14*	−0.14*	−0.11*
Occupational prestige (z-score)	0.02	0.07*	−0.03	−0.02
Household income (z-score)	0.06*	0.08*	0.06*	0.03
Working (vs. not working)	−0.01	0.06	−0.07	−0.08**
Enrolled in school (vs. not enrolled)	0.27*	0.24*	−0.11	−0.25*
Health problems (z-score)	0.08*	0.01	0.04**	0.05*
Degree of urbanization (z-score)	−0.00	0.01	0.01	−0.01
Number of friends (z-score)			0.57*	0.59*
R^2	0.11	0.11	0.43	0.45
N	1467	1510	1467	1510

Note: Continuous independent and dependent variables are standardized.
[a] Not significant and omitted.
* $P < 0.05$.
** $P < 0.10$.

When age is added to the model for shared friends, we observe a positive and significant effect. The older people become, the larger the number of friends they share with the partner. This is true for men and women to the same extent. Age effects are smaller than they were for the number of friends and contacts. Hence, network size declines faster than network overlap increases. The life course effects are reduced when age is included, but the first transition effect is not affected (Table 4). In other words, network overlap increases in a stepwise fashion when people start to live together but after that, it is age that dominates the change. This conclusion applies more to women than to men. For men, we retain a significant effect of the transition to the empty nest stage. Also interesting is that structural variables are able to explain part of the marriage (or cohabitation) effect. Effects of remarriage remain significant in the last model.

Does the degree of overlap in social contacts change? To answer this question, we first look at the regression contrasts in Table 4. The pattern is somewhat different than the pattern for shared friends. For both men and women, we observe significant effects of the first and the last transition only. Joint contacts increase strongly when people move in together, an effect that is hardly surprising. Children do not lead to a further increase in contact overlap and appear to even reduce the degree of overlap for women. After the first child is born,

Table 6
Regression of network overlap characteristics on life course and structural variables

	Shared friends (%)		Joint contacts (%)	
	Husbands	Wives	Husbands	Wives
Life course stage (dating is reference)				
Living together without children	0.32*	0.28	0.82*	0.72*
Young children	0.46*	0.16	0.81*	0.60*
Older children	0.38*	0.17	0.84*	0.56*
Empty nest	0.69*	0.25	1.08*	0.78*
Remarried	0.14	0.05	0.72*	0.57*
Age of respondent (z-score)	0.12*	0.12*	0.00	−0.05
Age of respondent (z-score squared)	_[a]	_[a]	_[a]	_[a]
Educational level (z-score)	−0.16*	−0.14*	−0.06*	−0.11*
Occupational prestige (z-score)	−0.07*	−0.09*	−0.02	−0.01
Household income (z-score)	0.02	0.01	−0.02	−0.06*
Dual earner household (vs. one earner)	0.10	0.07	0.12**	0.26*
Both not working (vs. one earner)	0.08	0.23*	0.13	0.22*
Enrolled in school (vs. not enrolled)	−0.02	−0.46*	−0.14	−0.28*
Health problems (z-score)	0.00	0.04**	0.01	0.06*
Degree of urbanization (z-score)	−0.05**	−0.06*	0.01	0.06*
R^2	0.10	0.10	0.05	0.06
N	1362	1431	1361	1427

Note: Continuous independent and dependent variables are standardized.
[a] Not significant and omitted.
* $P < 0.05$.
** $P < 0.10$.

the percentage of separate contacts for women increases while it stays the same for men. Moving into the empty nest again increases the level of joint contacts for both men and women. Both effects are statistically significant.

More details are presented in Fig. 2. Here, I make a further distinction in joint contacts with own friends and joint contacts with shared friends. Within the category of joint contacts, we also see a shift. In the early stages, most of the joint contacts are with own friends; in later stages, the majority of joint contacts are with shared friends.

Another way of examining how this relationship changes is by calculating the correlation between joint contacts and shared friendship (as perceived by ego) and by comparing this correlation across life course stages. This analysis shifts to friends as the unit and uses the continuous versions of the original variables. The results are partially in line with what Fig. 2 suggests. The correlation between sharing friendship and having joint contacts is 0.27 for persons who are dating, and increases to 0.46 for people who are cohabiting. After that stage, the correlation does not increase further and even decreases somewhat, to 0.40 for couples whose children have left home. The earlier increase is more important however. Joint contacts thus become associated with shared friendship, which is in line with the balance principle.

Adding age to the model does not change these results, in large part because age does not affect joint contacts. Age did have an effect on shared friendships so that there is a

gradual increase in shared friends without a gradual increase in joint contacts. This result is consistent with our conclusion that joint contacts slowly lead to shared friendships.

What is the influence of structural variables on the size and overlap in friendship networks? Tables 5 and 6 show that most indicators of socio-economic status have significant effects. The educational effect is the strongest. Educational level has a positive effect on the number of friends and a negative effect on the number of contacts, after controlling for the number of friends. In other words, the higher educated report more friends but see them less often (Table 5). A new finding is that education also affects the overlap of networks (Table 6). The higher educated have more separated friendship networks and fewer joint contacts with friends than the lower educated. Effects of occupational prestige are smaller than the effects of education, but the pattern is the same. All in all, these findings are consistent with earlier findings that social networks are smaller among lower status groups and they show in a novel way that networks are more connected or more dense in lower status groups as well (Campbell et al., 1986; Moore, 1990). The influence of household income is different since higher income groups not only report more friends but also more contacts per friend. Income also has a negative effect on women's joint contacts.

Work also affects networks. While individual employment has weak effects on network size, the couple's employment situation does affect the degree of network overlap. Dual earner couples have more joint contacts than single earner couples (Table 6). The effect is particularly strong for the degree to which women's contacts are shared with the partner. This finding probably has to do with occupational homogamy and the resulting similarity of cultural values and lifestyles in couples (Kalmijn, 1994). When both spouses are employed, they will have more common interests which may result in more opportunity for joint contact. We also observe that students report more friends but fewer contacts per friend. In the equations for women, we find that students also have fewer shared friends and fewer contacts in the company of the partner than others.

The place of residence has no effect on the size of friendship networks and inconsistent effects on overlap. We expected less overlap in urban areas, but that is only true for shared friends; for joint contacts we observe either no effect (for men) or a positive effect of urbanization (for women). Health problems are associated with network characteristics as well, but they do not serve as a restriction. People with health problems have more friends and contacts than others. A common interpretation of this finding is that health problems increase the demand for contact rather than limiting the opportunities to meet other people. Health problems are also associated with more joint contacts, at least for women.

5. Conclusion and discussion

This study has re-examined the dyadic withdrawal hypothesis using data which combine the advantages of previous sociological and social–psychological studies. The dataset is large and nationally representative and is based on face-to-face interviews with both spouses of a couple. Single persons are included in the models as well and we also have information on dating relationships. The dyadic withdrawal hypothesis was reformulated in terms of four more specific life course effects: a decrease in the number of friends, a decrease in the number of friendship contacts, an increase in the overlap of the number of friends that

couples have, and an increase in the overlap of the number of contacts that couples have. I examined each of these changes using both bivariate and multivariate analyses.

The results first confirm a shrinkage of the friendship network. The number of friends declines, and so does the number of friendship contacts, both in total and per friend. These life course effects consist of discrete and continuous elements. The biggest effect occurs when people start dating and start living together with their partner. In later stages, no further declines occur. The life course pattern is dominated by strong continuous effects: the older people are, the fewer friends and the fewer friendship contacts they report.

The results also confirm the notion of increasing overlap, but in more complex ways than has been suggested. The percentages of shared friends and joint contacts increase across the life course. This change consists of a stepwise increase after people start living together with their dating partner and a subsequent continuous increase when people become older. The later stages do not contribute to the change but moving into the empty nest leads to a further increase in overlap. One important exception is the transition to having children, which has a negative effect on women's joint contacts. In other words, women have fewer friendship contacts in the company of the spouse after they have their first child.

We finally conclude that there are important sex differences. Women have more frequent contacts with friends than men, both in total and per friend. While this finding is not new, the models also reveal that women have more separate contacts than men and that they less often share friends with their spouse than men. In addition, having children seems to decrease the relative share of joint contacts for women, whereas most of the life course reveals an increase in this respect. Together, these findings show that women are socially less dependent on the marriage than men, a pattern which is directly the opposite of dependencies in the economic domain.

What do these findings tell us about the theoretical principles that were outlined in the beginning? Although the paper was not intended as a direct test of underlying mechanisms, it is still possible to say something about their validity.

The principle of competition receives considerable support. One reason for concluding this is that the decline in the number of friends and contacts is strongest in the early transitions, from single to dating and from dating to cohabitation. These are also the transitions where we would expect competition to play the biggest role. That the decline is stronger for men than for women can also serve as evidence favoring the competition principle. After all, it is plausible to assume that the functions of women's friendships can not be fulfilled easily by a husband.

The balance principle is supported as well. That we find significant effects of age and stage on network overlap is consistent with the balance principle. In addition, we find that the association between joint contacts and shared friendship increases over the life course as well, a pattern that is also consistent with the balance principle. This change is located in the early stage of the relationship, however, and does not appear to increase any further It should also be noted that increasing overlap is limited to asymmetric friends, i.e. friends who are among the five best friends of one spouse but not among the five best friends of the other. When focusing on friends that are mentioned by both spouses—symmetrically shared friends—we do not see an increase in the degree of overlap. The balance principle apparently applies to more weaker forms of friendship and the core of spouses' friendship networks remains separated.

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