

Friendship Networks and Sexual Debut

A Study Based on Time-to-event Data

Reti Amicali e Prime Relazioni Sessuali. Uno Studio su Dati di Biografie

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Riassunto: L'impatto della dinamica delle reti amicali sull'età al primo rapporto sessuale viene studiato utilizzando un'indagine su studenti universitari italiani. Avere amici di sesso opposto e conversare di sesso accelera la transizione verso la sessualità adulta.

Keywords: first sexual intercourse, friendship networks, gender, conversational content.

1. Sexual Debut and Friendship Networks: Preliminary Analysis

We study the relationships between the characteristics of friendship networks and the entry into sexual life. The friendship network of young adults shapes their behavior, by providing information, norms, and potential partners: the dynamics in the characteristics of friendship networks might also explain part of the observed changes at the macro level. Despite the importance of the issue, so far it has not been possible to have data on social networks and the entry into sexual life. A recent survey of Italian university students allows us to study the dynamics of the gender-segregation and conversational content of young adults' social networks and its impact on age at sexual debut. In this paper, the data concerning such dynamics are used as explanatory variables in order to estimate an hazard model on age at first intercourse.

The transition from childhood friendship to adolescent friendship is marked by fluctuations in companionship and intimacy, asexuality and sexuality. There are changes in the degree of gender segregation in the friendship networks and in the development of affiliate relationships with other-sex friends and romantic partners. As the gender composition of friendship networks changes in early adolescence, opportunities to develop other-sex friendships and seek out romantic partners increase. Whereas same-sex friendships appear to dominate in childhood, a more gender-balance nature of the friendship network evolves throughout adolescence (Feiring, 1999; Crosnoe, 2000). Other-sex friends provide a pool of potential romantic partners and may serve to introduce adolescents to new other-sex peers who may become friends or lovers. Using a small-size longitudinal study of U.S. adolescents, Feiring (1999) indicates that having other-sex friends is related to the likelihood of having a romantic relationships.

We hypothesize that adolescents with friendship networks with a larger share of other-sex members are on the "early train" of romantic experience and therefore engage in

earlier sexual relationships. In addition, we hypothesize that conversation about sex within the friendship network accelerates sexual debut.

Our study is based on data from a survey among 4,792 first- and second-year university students of Economics and Statistics, undertaken at 15 universities in Italy during winter 2000 and spring 2001. The survey provides detailed information on sentimental and sexual life of respondents. Information was collected anonymously by means of a self-administered questionnaire. Respondents were both females (58.2%) and males aged between 18 and 26 years (mean and median age about 20.5). 67.4% of the males and 62.9% of the females had experienced sexual intercourse at the time of the survey and the median age at first intercourse was 18.9 years for males and 19.2 for females (Kaplan-Meier estimates).

In this study, we use the information (reported by respondents) on the gender composition of friendship networks and on the frequency of conversation about sex in four developmental periods of adolescence and early adulthood (11-13 years old, from 14 to 15, from 16 to 18, and at the moment of the survey). The share of other-sex friends in the friendship network significantly increases with age, in similar fashion for both genders, with a general tendency towards the diversification of the network (table 1). The transition from having a mixed friendship network back to a network unbalanced towards one's own sex is rare. However, there is also some stability over age in the composition of the network, particularly if the starting network is already gender-balanced. Also the frequency of conversation about sex increases with age (table 2). Conversation about sex is more frequent for males, independently of the composition of the network of friends. Females who talk more openly about sex have a cross-sex network. Among males, talking openly about sex is weakly associated with a friendship network of the opposite sex. The association decreases with age, and it is reversed at the period of the interview, when the highest score is registered among those with a gender male-segregated network (data not shown here).

Table 1 *Friendship network frequencies and transitions from early adolescence to current situation.*

		<i>Network at 11-13</i>		<i>Current Network</i>				
		None	All boys	Mostly boys	Balanced	All/mostly girls	N	%
<i>Males</i>	None	20.7	0.0	13.8	48.3	17.2	29	1.5
	All boys	0.8	5.0	29	54.2	10.9	238	12.1
	Mostly boys	0.2	0.6	26.5	64.4	8.3	972	49.5
	Balanced	0	0.1	9.8	79.5	10.6	671	34.2
	All/mostly girls	0	1.9	19.2	44.3	34.6	52	2.7
	N	10	20	407	1324	201	1962	
		0.5	1.0	20.7	67.5	10.2		
		<i>Network at 11-13</i>		<i>Current Network</i>				
		None	All boys	Mostly boys	Balanced	All/mostly girls	N	%
<i>Females</i>	None	11.1	7.4	11.1	40.7	29.6	27	1.0
	All girls	0.4	3.5	16.3	63.2	16.6	258	9.3
	Mostly girls	0.4	0.3	17.0	67.0	15.3	1034	37.3
	Balanced	0.2	0.6	12.5	69.8	16.9	1216	43.9
	All/mostly boys	0.0	0.4	7.6	52.5	39.4	236	8.5
	N	11	22	391	1840	507	2771	
		0.4	0.8	14.1	66.4	18.3		100

Table 2: *Talking openly about sex with friends: frequencies and transitions from early adolescence to current situation.*

At 11-13		Now				N	%
		No f. /never	Sometimes	Often	Very Often		
<i>Males</i>	No friends or never talk	3.9	34.4	39.4	22.2	810	41.3
	Sometimes	1.7	32.6	40.0	25.8	900	45.8
	Often	1.1	24.3	56.6	18.0	189	9.6
	Very Often	4.7	15.6	15.6	64.1	64	3.3
	N	52	628	796	487	1963	
	%	2.6	32.0	40.5	24.8		100
<i>Females</i>	No friends or never talk	7.5	49.7	31.0	11.8	1585	57.2
	Sometimes	3.2	39.5	40.0	17.3	1048	37.9
	Often	2.6	27.2	46.5	23.7	114	4.1
	Very Often	0.0	18.2	13.6	68.2	22	0.8
	N	156	1236	967	410	2775	
	%	5.6	44.5	34.8	14.8		100

2. Results of a Cox Regression Model on Age at First Intercourse

In this section we study age (in months and years) at first sexual intercourse using a Cox proportional hazard model. We stratify the model according to the geographical area of residence during secondary school (North, Center, South and Islands, Abroad). We use some variables related to the family of origin as control variables (namely, the presence of elder brothers and/or sisters, and the level of education of the father). Our main interest is in the effect (separate by gender) of the gender composition of the friendship network and of the conversational content. As these variables were collected retrospectively referring to age 11-13, 14-15, 16-18 and present, we use age 11 as the starting time for the exposure to risk of having first sexual intercourse. We split episodes at exact ages 14, 16, and 18, and to each split we attach the value of the time-varying network characteristics, hypothesizing that network characteristics are constant within each period. We test the proportionality assumption for all variables, using the test of Grambsch and Therneau (1994). The assumption is rejected only for the conversational content for women. We thus introduce an interaction between conversational content and age. For both men and women and for all variables, the proportionality assumption of the model we present here is not rejected (we only report the value of the global test). Results of the model are reported in table 3.

Results are in accordance with the hypothesis that having friendship networks that include more members of the other gender accelerate sexual debut. For men, having a gender-balanced or predominantly female friendship network doubles the relative risk of having first sexual intercourse with respect to having no friends or only male friends. The effect is slightly smaller for women, especially for networks of balanced composition. Still, having at least some male friends raises the relative risk by 45% with respect to having only female friends. The results also support the hypothesis that young adults who talk about sex with friends have a higher relative risk of first sexual intercourse. For men, the relative risk from talking openly "very often" as compared to "never" is about 230%. About the same ratio is observed after the age of 16 for women. For girls aged less than 16, however, conversational contents are more important, which is due to a polarization between those who never talk about sex and other girls. As regards control variables, having elder siblings does not have a significant impact on age at first intercourse, and coming from a family where father's educational level is

relatively high raises the hazards (note that we are only analyzing university students). Although results are in conformity with the theoretical hypotheses, as a caveat, let us remind that the effect of the gender composition of networks as well as of conversational content might be overestimated. Firstly, both network characteristics and age at first intercourse may depend on unobserved variables; by controlling for family of origin and stratifying by area we partially accounted for some of these potential factors. Secondly, network characteristics are measured as constant in an age interval, and they might also reflect sexual experiences within that interval. Disentangling causality in network effects from observational data requires anyway several additional assumptions (Behrman et al., 2001). Further research will also need to address dependent variables other than age at first sexual intercourse.

Table 3: Results of Cox proportional hazard models on age at first intercourse (stratified on 4 geographical areas).

	Men			Women		
	Estimated relative risk	Std. error (robust)	p- value	Estimated relative risk	Std. error (robust)	p-value
<i>Network (ref. all own gender/no friends)</i>						
Prevalence own gender	1.646	.342	.016	1.447	.362	.139
Balanced	1.987	.407	.001	1.640	.405	.045
Prevalence other gender	1.979	.446	.002	1.943	.489	.008
<i>Conversation (ref. no conversation/no friends).</i>						
<i>For men: all ages. For women: up to 16</i>						
Sometimes	1.357	.225	.066	1.662	.334	.011
Often	1.935	.322	.000	2.598	.607	.000
Very often	2.279	.399	.000	2.679	1.123	.019
<i>For women: over 16</i>						
Sometimes				1.075	.146	.593
Often				1.619	.220	.000
Very often				2.212	.329	.000
<i>Presence of elder brothers (ref. No)</i>						
Yes	.976	.062	.703	.934	.052	.222
<i>Presence of elder sisters (ref. No)</i>						
Yes	1.060	.069	.367	.997	.055	.959
<i>Educational level of the father (ref. Low/medium)</i>						
High school or more	1.140	0.066	.023	1.185	.059	.001
<i>Global proport. Test</i>	9.88	9 d.f.	.360	11.40	12 d.f.	.495
<i>(H₀: non prop. hazards)</i>						

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