

## Influence of the friends' network in drug use and violent behaviour among young people in the nightlife recreational context

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Party networks of young people are important for socialization, but can also influence their involvement in risk behaviours. We explored the individual-centred networks (7.360 friends) of 1.363 recreational nightlife users in 9 European cities in 2006, through 22 friend characteristics. As expected, deviant networks are related to violence, smoking, illegal drug use and drunkenness. However, socializing and helping networks are also associated with fighting, smoking, use of illegal drugs —except for cannabis— and getting drunk. Not having a deviant network and not having a helping/socializing network can be protective against smoking, violence and illegal drug use, as well as protecting ex-users from relapse. Closeness to friends is also a network protective factor. A possible reason why socializing networks are related to fighting, illegal drugs and drunkenness is that these behaviours are somehow desired, adaptive and prosocial in recreational contexts.

*Influencia de la red de amigos en el comportamiento violento de jóvenes que frecuentan contextos recreativos nocturnos.* Las redes de amigos de los jóvenes cuando salen a divertirse son importantes para la socialización, pero también influyen en sus conductas de riesgo. Se exploran dichas redes (7.360 amigos) en 1.363 jóvenes de 9 ciudades europeas en 2006, a través de 22 características de los amigos. Las redes desviantes están relacionadas, como se esperaba, a la violencia, el tabaquismo, el consumo de drogas ilegales y la embriaguez. Sin embargo, las redes que facilitan la socialización y proporcionan ayuda también están asociadas con una mayor facilidad en la participación en peleas, tabaquismo, uso de drogas ilegales —excepto cannabis— y emborracharse. No tener una red desviada y no tener una red que facilite la ayuda / socialización puede tener un efecto protector contra el tabaquismo, la violencia y el consumo de drogas ilegales, así como la protección de ex usuarios de la recaída. La cercanía a los amigos es también un factor de protección de la red. Una de las posibles razones por las que las redes que facilitan la socialización se relacionan con las peleas, drogas ilegales y la embriaguez es que estos comportamientos dentro de los contextos recreativos nocturnos son bien vistos, son en parte adaptativos y pro-sociales.

Few phenomena studied by social scientists are as easily stereotyped as gang violence and drugs, particularly when they are considered in conjunction (Moore, 1990). At present times violence and use of alcohol and drugs is quite frequent in recreational settings (Blay et al., 2010) Current research consistently shows the peak time for violent offences is weekend nights and the peak location is in and around pubs and clubs (Allen, Nicholas, Salisbury, & Wood, 2003). In the United Kingdom, one fifth of all violent assaults take place in or around a pub or club, and almost half of all violence-and disorder-related incidents occur on weekend nights (Maguire & Nettleton, 2003). Moreover, both alcohol abuse (Farke & Anderson, 2007; World Health Organization, 2006) and illicit drug use (Boles & Miotto 2003; Goldstein, 1985) are related to violence.

Several studies have identified as violence risk factors being in a group of young people, and being male (Blay et al., 2010; Krug, Dahlberg, Mercy, Zwi, & Lozano, 2002; Muñoz-Rivas, Gámez-Guadix, Graña, & Fernández, 2010; Yonas, O'Campo, Burke, Peak, & Gielen, 2005). Research over many years has shown a clear relationship between the group of friends and the use and abuse of drugs (Kandel, Davies, Karus, & Yamaguchi, 1986; Latkin, Knowlton, Hoover, & Mandell, 1999). Furthermore, findings from recent longitudinal studies (Fergusson, Swain-Campbell, & Horwood, 2002; Gordon et al., 2004) have shown that involvement in deviant peer groups increases the likelihood and frequency of physical aggression and violence, even after controlling for prior behaviour problems or selection effects. However, it remains unclear how friends influence each other's delinquent behaviour and on what basis they choose their company.

Exploring how the network influences risk behaviours is not a straightforward matter. Most research has used perceived peer substance use or dyadic or small clique data to study these aspects, though there is increased recognition that it is necessary to consider the complete network (Kirke, 2006). Moreover,

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modelling of the peer network's drinking behaviour was greater the closer respondents felt to their peer network (Rethinam & Reifman, 2002). In Rogers' early work (1962) on the diffusion of innovations, opinion leaders were found to be early, but not the earliest, adopters of new behaviours and practices. Alexander, Piazza, Mekos, & Valente (2001) showed how popular students were more likely to smoke in general, and especially so in schools with high smoking prevalence.

Studies have shown that adolescents who are isolated or rejected from the group are more likely to smoke (Ennett & Bauman, 1993). However, contrasting results were reported by Abel, Plumridge, & Graham (2002). Their findings confirmed that it was those *least* well connected, the 'loners', who were least likely to smoke cigarettes. Similar findings come from a recent research (Calafat et al., 2010). Having not network or a less prosocial network is related to be a low consumers. Having a non deviant, but prosocial network is related to being a person who gets drunk without using illegal drugs. Users of illegal drugs have a deviant and prosocial network.

Also ceasing drug use is often facilitated by dissociating from drug-using peers and receiving support from network members with more prosocial orientations or who are not involved with drugs (Calafat et al., 2010; Latkin et al., 1999; Valente, Gallaher, & Mouttapa, 2004).

In summary, there is a strong relationship between the use of drugs and violent behaviours; nevertheless, there is limited knowledge of how peer groups exercise their influence on specific individuals in relation to these behaviours. Groups are made up of different individuals who may be very different from one another, fulfilling different roles. We can expect that more violent people will have more deviant networks. But what happens with other friends characteristics? We intend to explore this variety of roles within the network in order to understand their influence on violent behaviours and the use and abuse of alcohol and drugs.

#### Method

##### *Participants and procedure*

The research sample was made up 1232 frequent users of recreational weekend nightlife locations in 9 European cities: Athens (Greece), Berlin (Germany), Brno (Czech Republic), Lisbon (Portugal), Ljubljana (Slovenia), Liverpool (United Kingdom), Palma de Mallorca (Spain) and Venice/Mestre (Italy). The field work was carried out between February and July 2006.

The sampling method employed was a variant of 'Respondent-Driven Sampling' (Wang, Carlson, Falck, Siegal, Rahman, & Li, 2005), which has been validated previously as a recruitment mechanism in nightlife contexts characterized by drug use (Mantecón, Juan, Calafat, Becoña, & López, 2008). The sampling process began with the selection of eight 'seed' informants in each city: two men and two women aged under 19, and two of each gender aged 19 or over. Participants had to be regular users of pubs, discos and/or clubs. They were asked to recruit two members of their social network, neither of them especially close friends of theirs, to begin the next «wave» of interviews. This second wave of recruiters repeated the process, which continued with two more waves, with the aim of obtaining a sample size of approximately 150 participants in each city.

##### *Instruments*

Data was gathered through self-applied anonymous questionnaire with a basic question-set on respondents' nightlife, partying habits, drug use and risk behaviours. The second part of the questionnaire was made of questions on respondents' party network. The maximum number of listed members accepted was 10.

To determine the sort of social support young people receive in their party networks it was used a 22 items table (see *Table 1*), grouped into five categories:

- *Drugs*: measuring drug and alcohol use and related behaviours.
- *Helper roles*: (looking after others, giving advice, etc.).
- *Socializing skills*: (popularity, making decisions when going out, having fun, etc.).
- *Antisocial behaviour*: (violence, trouble with police, etc.). There was one item ('doing mad or crazy things') that did not fit exactly in these five categories, but has been included in the antisocial group.
- *Sexual relationship* with the respondent and having sex-related problems.

Variables were measured on a dichotomous scale for each network member and averaged to obtain a proportion of network members with a specific role or characteristic in the respondent's network. With this generalization at the level of individual-centred networks we obtained normally distributed variables, which were used to perform exploratory factor analysis.

##### *Data analysis*

Maximum Likelihood (ML) factor analysis was used to merge the variables on specific linking characteristics of individual-centred networks (name-interpreter variables) into two factors. These were later used for positioning of respondents according to their demographic characteristics and information gathered in the first part of questionnaire. Net effects of personal characteristics and risk behaviour variables on levels of extracted factors were analyzed using multiple regression analysis.

#### Results

##### *Socidemographic data*

The majority of the respondents in the sample were women (53%) and the age of the sample was between 15 and 30 (see Figure 1). Half (48%) of the respondents were still in school or university, 42 % were temporary or permanently employed and 6% were looking for a job. On average, self-reported family income was slightly above 'medium'.

##### *Use of alcohol and drugs*

Although frequency of substance use varied among all countries, overall prevalence of is quite high. Lifetime prevalence of cannabis use is 73.8%, the figure for cocaine being 30.4% and for ecstasy 28.7%. As regards drunkenness, 69.2% reported having

been drunk during the last four weeks (and 19.6% more than 5 times in that period).

#### *Violent behaviour*

Clubbers in all countries presented a high frequency of violent incidents in nightlife settings over the previous 12 months. A fifth (19.5%; 11.4% of women and 28.4% of men) has been involved in a physical fight. Percentage of women who usually carry a weapon in recreational contexts were 2.7% and for men 9.7%. The 5.9% of women and 14.5% of men had been threatened or injured with a weapon in recreational contexts at night

The highest percentage involved in physical fighting is found among those combining frequent drug use and frequent bouts of drunkenness. Whilst for men only the highest frequency of drunkenness (>4 times in the last four weeks) has a significant effect on fighting, even women who had been drunk twice in the last four weeks are at a significantly higher.

#### *General characteristics of respondents' networks (friends with whom they normally go out with for nightlife activities)*

Average size of reported network was 7.2 friends for each respondent. Respondents were recommended to name a maximum of 10 with whom they partied. Most (40.4%) named six, though

there was also a relatively large percentage (25%) who listed 10 members in their «party network». Respondents had known most of their friends for more than four years. They also spent most of their general leisure time in the company of members of their recreational network. Half of the sample (52%) built their party networks on the basis of drinking/drug-taking habits and a third on similar sexual interests.

#### *Structure of the friend's network: two factors (Deviant ties and helping and socialising ties) as a result of factor analysis*

Using the scale of 22 items (table 1) to determine the sort of social support young people receive in their party networks, measuring questions like friends drug use, friends helping roles, socializing skills, antisocial behaviour *and sexual issues*:

The analysis of the data revealed that the 22 variables measured two components or factors, which were extracted (Figure 2 and Table 1) using ML factor analysis with varimax rotation of scores. The first factor (horizontal) could be labelled as 'Deviance-related ties'. It measures the presence of behaviours related to alcohol and drug abuse, and also antisocial behaviours. The second factor (vertical), 'Helping- and Socializing-related ties', accounts for a substantial number of people presenting helping behaviours and socializing skills. It can be said that the two factors measure two different kinds of social support from the respondent's network.

*Table 1*  
Measured characteristics of network members and factor loading

Abbreviation and classification	Characteristic of the network members of the respondent	Factor loadings	
		F1	F2
Drugs1	Occasionally sells drugs to pay for their night out	0.48	
Drugs2	Gets drunk frequently or goes over the top when taking drugs	0.47	0.21
Drugs3	Has problems with alcohol and drugs	0.46	
Drugs4	Pushes others in the group to take drugs	0.43	
Drugs5	Provides you or others in the group with drugs	0.51	
Helpers1	Will tell others if they have drunk too much or taken too many drugs		0.47
Helpers2	Looks after others if they loose control		0.61
Helpers3	Lend money to others in the group when they need it	-0.12	0.63
Helpers4	Is good at giving advice in preventing drug or sexual problems		0.54
Helpers5	Helps you to find a sexual partner	0.13	0.21
Socialising1	Only drinks alcohol or takes drugs in moderation		0.38
Socialising2	With whom do you have the most fun with		0.29
Socialising3	Often makes the decisions when you go out		0.31
Socialising4	Knows a lot of people when you go clubbing	0.16	0.43
Socialising5	Has a lot of success finding sexual partners	0.17	0.3
Sex1	With whom you had sex during the last year	0.14	
Sex2	Who has had sexual problems (e.g. sexual transmitted infection)	0.2	
Antisocial1	Drives under the influence of alcohol or drugs	0.48	0.13
Antisocial2	Gets involved in arguments and fights	0.51	0.14
Antisocial3	Generally does mad or crazy things	0.35	0.34
Antisocial4	Has carried a weapon when going out at night	0.28	
Antisocial5	Has been in trouble with the police in the last twelve months	0.48	0.12

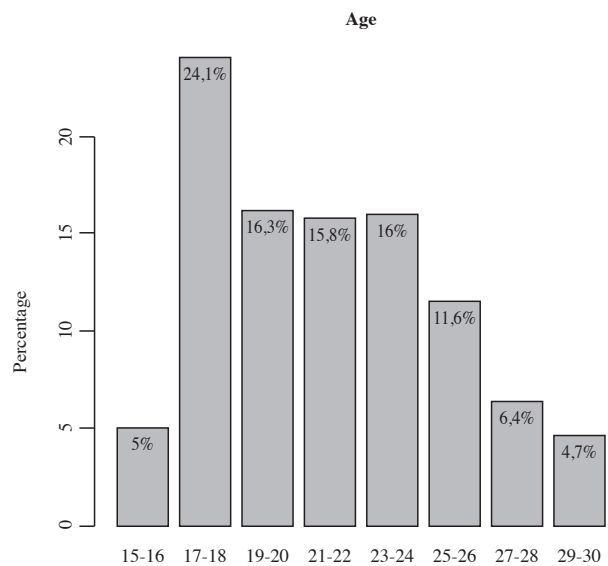


Figure 1. Age distribution of the network

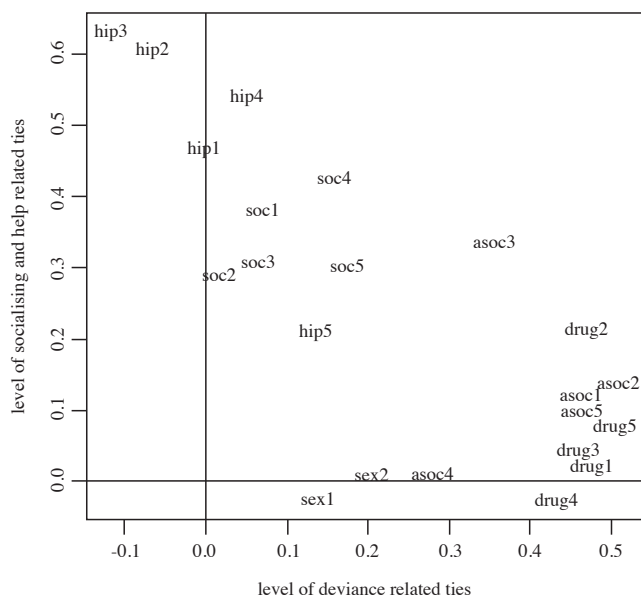


Figure 2. Definition of factors ('Deviance-related ties' and 'Helping- and Socializing-related ties'), describing characteristics of network structure

Network characteristics according to demographic characteristics of the respondents

The effects of personal characteristic of respondents on the two factors were tested separately with multiple regression analysis, as shown in Table 2. For the interpretation of ANOVA we should take into account that the intercept group are man, aged 15-16, who do not use any drugs or drink alcohol and who hasn't carried weapon or been involved in a fight. All effects for presented categories in the model are compared to this group of respondents.

Respondents' characteristics can be positioned on this framework based on the two factors 'Deviance-related ties' and

'Socializing and helping ties'. These positions are calculated as centroids of specific groups based on the two factors and represented in diagrams (see Figures 3, 4 and 5) according to characteristics of ties.

The presence of deviance-related ties in the network (see Figure 2 and table 2) is greater in male networks than in those of females. Age groups 21-22 and 29-30 have smaller amount of deviance related ties in the network than respondents aged 15-16.

Average 'helping and socializing ties factor' is also higher among males. But analysis of age group structure by gender (see Figure 3) shows that the mean difference comes from the group of woman aged between 15 and 16. This group of girls have extraordinary low level of helping and socialising ties in their network, which also contributes to significant interaction effect in the multiple regression model.

To find the reason that makes this group so different according to presence of helping and socializing ties we are going to compare it with the same age male group (Figure 4). The first clear difference is that boy's network contains higher percentage of practically all kinds of individuals. There are certain individual characteristics of peers that are more common inside the female network —lend money to friends when they need, has a lot of success finding sexual partners, drives under the influence of alcohol and drugs—, but this characteristics do not differ significantly. The most outstanding characteristics of peers inside the male group is 'to get drunk frequently or goes over the top when taking drugs' and «will tell others if they have drunk too much or taken too many drugs». Very possibly one characteristic is linked to the other.

Party network characteristics according to the violent behaviour

Violent behaviour is relatively frequent among this sample of respondents. Being involved in fights and carrying a weapon corresponds to having a more deviant network. People carrying weapons when going out in the nightlife have less 'socializing and caring' network. Finally, being threatened or injured by a weapon has no significant effect on level of helping and socializing ties in the network, but has the same effect on presence of deviance-related ties as carrying weapon or being involved in fight (Table 2 and Figure 5).

Party network characteristics according to drunkenness and the use of illegal drugs (Table 2 and Figure 6)

Smoking tobacco is not specially related to having a deviant network, but regular users do have more frequently a more socializing network. To get drunk once a month is not related to any special sort of network. But, interestingly, being drunk two or more times a month is related both to a more deviant and more socializing network.

The effect of cannabis and ecstasy use increases number of deviance related ties in the network of a person. The same is an issue among the ex users of ecstasy and cocaine although present users of cocaine do not show significant tendency to have more deviant networks than the comparative group. Interestingly regular users of ecstasy —the same as regular smokers of tobacco— have a more socializing and helping network

*Table 2*  
Multiple regression analysis examining effects of demographic variable, violent behaviour and use of drugs on two extracted factors

		Factor 1: Level of deviance related ties				Factor 2: Level of socialising and caring ties			
		Estimate	Std. Error	t	Pr(> t )	Estimate	Std. Error	t	Pr(> t )
	Intercept	-0.25	0.12	-2.08	0.04	0.01	0.18	0.03	0.97
Gender	Female	-0.08	0.05	-1.70	0.09	-0.83	0.22	-3.76	0.00
Age	17-18	0.01	0.11	0.09	0.93	-0.29	0.18	-1.56	0.12
	19-20	-0.02	0.11	-0.21	0.83	-0.18	0.19	-0.95	0.34
	21-22	-0.25	0.11	-2.24	0.03	-0.19	0.19	-1.01	0.31
	23-24	-0.16	0.11	-1.41	0.16	-0.16	0.19	-0.83	0.41
	25-26	-0.05	0.12	-0.44	0.66	-0.13	0.20	-0.63	0.53
	27-28	-0.17	0.13	-1.25	0.21	-0.05	0.21	-0.25	0.80
	29-30	-0.28	0.14	-1.95	0.05	0.00	0.23	0.02	0.98
Drunkness	Once	0.08	0.07	1.14	0.25	0.10	0.07	1.44	0.15
	Two or three times	0.19	0.07	2.87	0.00	0.24	0.07	3.35	0.00
	More than 3 times	0.21	0.06	3.48	0.00	0.19	0.07	2.92	0.00
Use of Tobacco	Ex user	-0.14	0.09	-1.55	0.12	0.09	0.10	0.89	0.37
	Tried	-0.14	0.09	-1.63	0.10	0.03	0.10	0.37	0.72
	Moderate user	-0.14	0.11	-1.24	0.22	-0.07	0.12	-0.60	0.55
	User	-0.03	0.07	-0.47	0.64	0.24	0.07	3.24	0.00
Use of Cannabis	Ex user	0.07	0.08	0.86	0.39	0.00	0.09	-0.03	0.98
	Tried	-0.06	0.07	-0.87	0.38	0.01	0.08	0.10	0.92
	Moderate user	0.18	0.07	2.55	0.01	0.00	0.08	0.05	0.96
	User	0.34	0.07	4.52	0.00	-0.02	0.08	-0.30	0.77
Use of Ecstasy	Ex user	0.34	0.11	3.03	0.00	0.14	0.12	1.11	0.27
	Tried	0.01	0.08	0.13	0.89	-0.04	0.08	-0.46	0.65
	Moderate user	0.35	0.09	4.02	0.00	-0.06	0.10	-0.61	0.54
	User	0.64	0.15	4.32	0.00	0.34	0.16	2.09	0.04
Use of Cocainne	Ex user	0.23	0.10	2.37	0.02	-0.13	0.11	-1.23	0.22
	Tried	0.15	0.08	1.86	0.06	0.10	0.09	1.12	0.26
	Moderate user	0.16	0.09	1.81	0.07	-0.04	0.10	-0.40	0.69
	User	0.22	0.24	0.90	0.37	-0.36	0.26	-1.37	0.17
Carried weapon	Yes	0.33	0.10	3.32	0.00	-0.33	0.11	-3.03	0.00
Been threatened	Yes	-0.07	0.08	-0.93	0.35	0.05	0.09	0.53	0.60
Involved in fight	Yes	0.27	0.06	4.41	0.00	0.05	0.07	0.81	0.42
Closeness	(1-10, 1 closest)	0.02	0.01	1.38	0.17	-0.07	0.02	-4.49	0.00
Gender*age	Female*17-18					0.87	0.24	3.60	0.00
	Female*19-20					0.95	0.25	3.79	0.00
	Female*21-22					0.96	0.25	3.83	0.00
	Female*23-24					0.81	0.25	3.25	0.00
	Female*25-26					0.70	0.26	2.67	0.01
	Female*27-28					0.65	0.29	2.22	0.03
	Female*29-30					0.67	0.31	2.12	0.03
Adjusted R-squared: 0.2321					Adjusted R-squared: 0.07242				

Discussion

People involved in the nightlife context in Europe, while presenting a risk behaviour profile, are at the same time quite adaptive and socially integrated (EMCDDA, 2007). Clubbers in the present research report a high frequency of violent incidents in nightlife settings (19.5% in the total sample have been involved in a fight during the last twelve months) and 69.2% have been drunk during the last month. The highest percentages involved in physical fights were among those combining frequent drug use and frequent bouts of drunkenness. The findings from our research are consistent with the conclusions of other studies (Kodjo, Auinger, & Ryan, 2004).

The friend's network is defined by means of two factors, one reflecting the level of deviance-related ties and the other representing socializing and helping ties. These two factors are negatively correlated, and this intuitively corresponds to the results of previous research by Hiraschi (1969) and Dishon (1990), as well as being in line with the conclusions of Marcus' review study (1996), who found that delinquency networks are less intimate than non-delinquency networks.

People who had not been drunk during the month before survey, who are not consumers of illegal drugs and/or who do not smoke

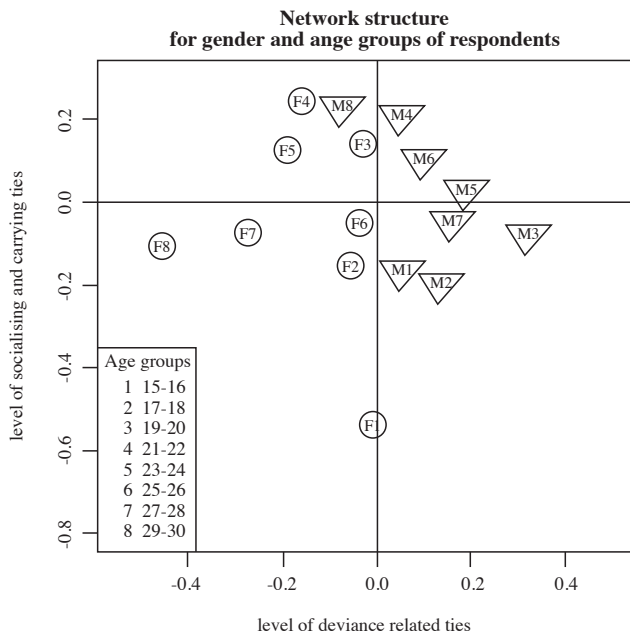


Figure 3. Plot of age and gender groups network structure according to absolute number of reported (variable specific) network members

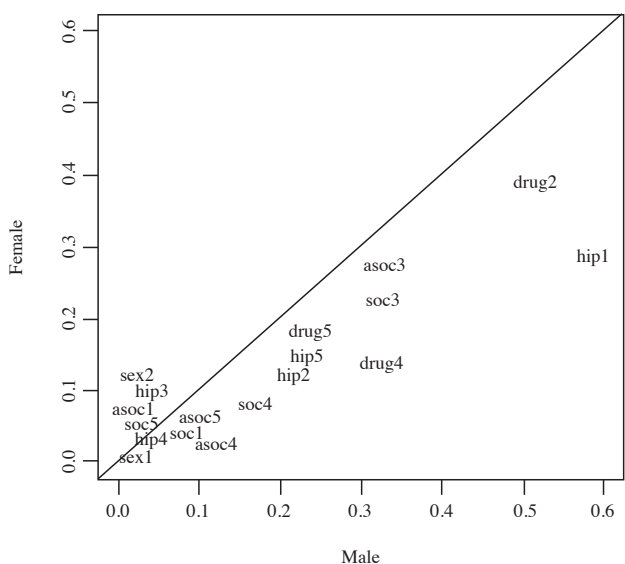


Figure 4. Gender comparison of average percentages of reported specific ties in the networks of youngest age group (15-16 years old)

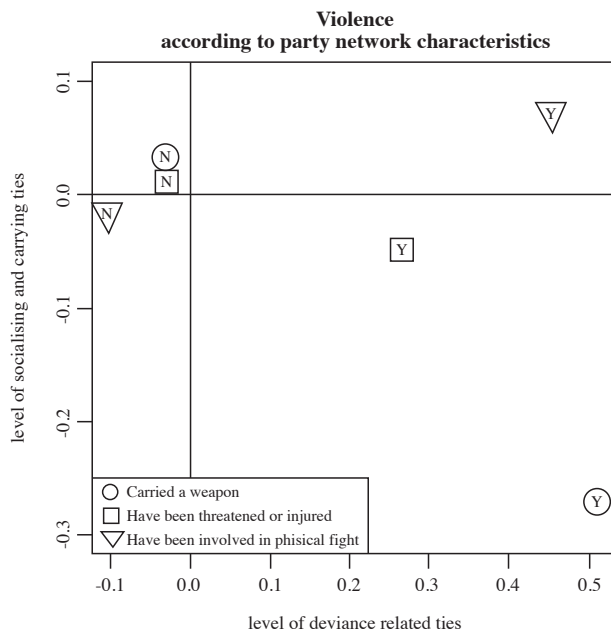


Figure 5. Positioning of violence behaviours according to the two factors

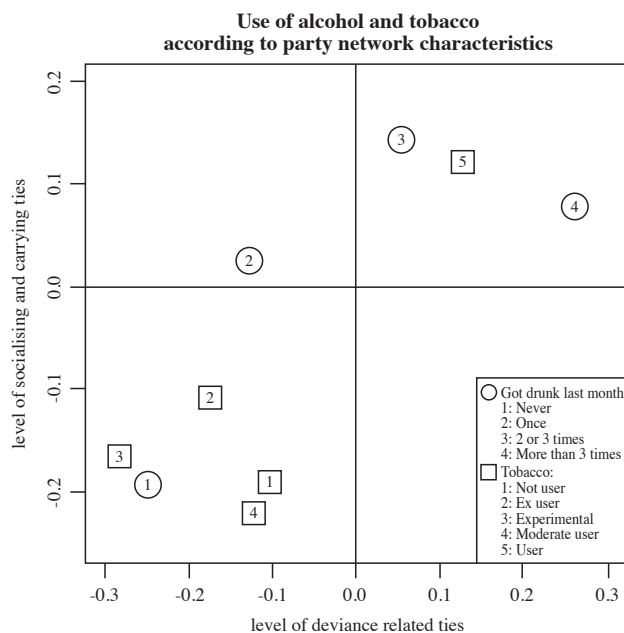


Figure 6. Use of alcohol and tobacco according to network characteristics

are positioned below average in both dimensions. That is, there are fewer deviant ties and fewer helping ties in their network. In contrast, respondents who were regular users of illegal drugs (especially cocaine and ecstasy), had been drunk two or three times a month and/or who smoke regularly had more socializing and deviant ties in their networks. These results, with some exceptions, do not coincide with those of other research. Most studies in the literature found that isolated adolescents were more likely to smoke than those with strong friendships (Ennett et al., 2006; Ennett et al., 2008). However, there are some studies whose findings are in the same direction as those of the present research (Engels, Scholte, van Lieshout, de Kemp, & Overbeek, 2006; Niemelä et al., 2006). A possible explanation for our results is that drunkenness, taking illegal drugs and smoking are culturally normative and have a socializing function in this recreational context. People not using such drugs are failing to implement some of the socializing skills typical of these contexts.

Some studies stress that ending drug use is often stimulated by disassociation from drug-using peers and receipt of positive support from network members with more pro-social orientations or who are not drug-involved (Latkin, 1999; Valente, 2004). The network characteristics of ex-users in the present research show lower levels of deviance than in the other studies mentioned, but at the same time fewer socializing and helping ties in their networks. A possible explanation for this is that the sort of socializing skills we are considering in this study are related to being more actively involved in recreational activities.

### Violence

People who had experience of deviant behaviour have more peers who are associated with deviant behaviour. However, level of socializing and caring ties depends on the violent behaviour in question. People who carry a weapon present levels far below average, while levels are above average among respondents who had been involved in physical fighting. It may be that fighting in this recreational context is not considered a marginal activity (in fact, 19.5 percent of respondents had been involved in a fight during the previous year), and this might explain why this aspect is strongly correlated with having a socializing and support network.

Some authors (Dishon, 1990; Marcus 1996) claim that delinquency networks are less intimate than non-delinquency networks, while Houtzager & Baerveldt (1999) found this not to be the case. Also, Haynie (2001) found that network density magnified the effects of friends' delinquent behaviour. Our research findings are possibly more in support of the first option – that there is a

tendency, albeit non-significant, for deviant networks to be more strongly related to non-closeness.

### Risk and protective networks

Having a network of friends who abuse alcohol and drugs and display violent and antisocial behaviour is related to violence, use of tobacco, illegal drugs and getting drunk two or more times a month. Networks based on socializing and helping ties can also be risky networks and are populated by people who are involved in fighting, smoking and using illegal drugs (except cannabis) and getting drunk between once and three times a month.

Not having a deviant network and not having a helping/socializing network can be protective for non-smokers, the non-violent, non-consumers of illegal drugs and ex-users. Closeness to friends is also a network protective factor.

Possibly the most striking result is that socializing and helping networks are related to problematic behaviour (violence, drunkenness, illegal drugs). An important reason for this is that such behaviours can have quite a positive influence on success within the recreational context. Another potential explanation is that 'problematic behaviour' (e.g., drinking) is to some extent a desired, adaptive and prosocial behaviour in recreational contexts.

### Limitations of this research

The main limitations of our own and similar research is that they do not use representative samples of young people and are not based on longitudinal data. The causality of relationships is difficult to study, as it requires examination over time (Dorean, 2001). Additional limitations may reside in the self-reported values of some of variables, and also in values reported for network members who may reflect respondents' perception of their friends, rather than the actual situation in the field. There is indeed a tendency in young people to perceive their friends' behaviour as more similar to theirs than it may actually be (Kirke, 2006; Urberg, 1992). Nevertheless, we should consider the present research as representing a substantial improvement on traditional approaches to this issue.

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