



Social ties and short-term self-reported delinquent behaviour of personality disordered forensic outpatients

Yvonne H. A. Bouman^{1*}, Corine de Ruiter^{2,3} and Aart H. Schene⁴

¹Pompestichting, Nijmegen, The Netherlands

²Department of Clinical Psychological Science, Maastricht University, The Netherlands

³Trimbos-instituut, Netherlands Institute of Mental Health and Addiction, Utrecht, The Netherlands

⁴Department of Psychiatry, Academic Medical Center, University of Amsterdam, The Netherlands

Purpose. In community-based forensic psychiatry, patients' social ties are considered as protective factor in a risk management strategy. However, it is unknown whether these ties actually assist patients to refrain from re-offending. We hypothesised a protective role for social ties in re-offending behaviour.

Methods. In a sample of forensic outpatients with a personality disorder ($N = 55$), the relationship between social ties (social contacts and participation in social institutions) and short-term self-reported re-offences was studied within a prospective study design with a 6-month follow-up period.

Results. Our results provide evidence for a protective function of club participation. For violent re-offences, social institutions were protective and this protective function remained, even when a patient had network members with a criminal background. Except for work-related contacts, social contacts did not provide protection.

Conclusions. The protective effect of social ties, especially club participation, on desistance from re-offending in forensic psychiatric patients merits further attention from researchers and clinicians.

In Dutch forensic psychiatry, structured risk assessment tools are generally used as guidance in treatment and risk management of inpatients and outpatients (de Ruiter & Hildebrand, 2007; Hildebrand, Hesper, Spreen, & Nijman, 2005; Philipse, 2006). In the Structured Professional Judgment (SPJ; Webster, Douglas, Eaves, & Hart, 1997) approach to risk assessment, two types of risk factors are distinguished: static and dynamic. Static factors

*Correspondence should be addressed to Yvonne H. A. Bouman, Scientific Researcher, Department of Research, Pompestichting, PO Box 31435, 6503 CK Nijmegen, The Netherlands (e-mail: y.bouman@pompestichting.nl).

are historical and fixed, such as age at first offence. Dynamic factors can presumably change during treatment. Most risk assessment tools contain a number of dynamic risk factors related to social ties, such as relationships, social network characteristics, work/education and leisure activities (see e.g., Level of Service Inventory-Revised; Andrews & Bonta, 1995; Historic/Clinical/Risk-management-20; Webster *et al.*, 1997).

Another set of factors, which should be considered in risk assessment and management, are protective factors related to criminal desistance (Miller, 2006; Rogers, 2000). Although some authors consider protective factors as one end on a risk-protection continuum (Costa, Jessor, & Turbin, 1999; Hawkins, Catalano, & Miller, 1992; Webster, Martin, Brink, Nicholls, & Middleton, 2004), others ascribe a separate role to protective factors (Farrington & Loeber, 2000; Fitzpatrick, 1997). Presumably, protective factors can buffer risk factors and diminish the chance of re-offending even in high-risk persons. Nevertheless, these factors are rarely separately considered in risk assessment research in adults with three exceptions: the Inventory of Offender Risk, Needs, and Strengths (IORNS; Miller, 2006), the Short Term Assessment of Risk and Treatability (START; Webster *et al.*, 2004) and the Structured Assessment of Protective Factors for violence risk (SAPROF; de Vogel, de Ruiter, Bouman, & de Vries Robbé, 2007, 2009). In the SAPROF, protective factors are defined as '*any characteristic of a person, his/her environment or situation which reduces the risk of future violent behavior*' (original italics; de Vogel *et al.*, 2009, p. 25).

Risk assessment tools do not offer insight into the mechanisms through which social ties might serve as a risk or protective factor for future offending by using theoretical models. We turn to criminological theories for hypothesized relationships between social ties and delinquent behaviour. Hirschi's (1969) Social control theory states that 'control theories assume that delinquent acts result when an individual's bond to society is weak or broken' (p. 16). He distinguishes four types of bonds: attachment to parents, peers, or school; commitment to conventional lines of action; involvement in conventional activities; and belief in a common value system. Sampson and Laub's (1990, 2005) Life-Course Theory of Crime also includes hypothetical links between social ties and criminal acts. Whilst Hirschi developed his theory to explain adolescent delinquent behaviour, Sampson and Laub explored the role of social bonds in desistance from crime in adults. Their basic thesis is 'that while continuity in deviant behaviour exists, social ties in adulthood - to work, family, and community - explain changes in criminality over the life-span' (Sampson & Laub, 1990, p. 609). Furthermore, they 'contend that social interaction with adult institutions of informal social control has important effects on crime and deviance'. They studied the influence of job stability, commitment, and attachment to spouse on criminal and deviant behaviour in young adults, and concluded that all three sources of informal social control were negatively correlated with adult antisocial behaviour. In later work, they emphasized the interplay between three elements: social ties, routine activities, and human agency, which was hypothesized to explain persistent offending and desistance from crime (Sampson & Laub, 2005).

Previous research has provided evidence for a protective role for several social ties on criminal behaviour within a general criminal population and in criminal adolescents. Having an intimate relationship (Klassen & O'Connor, 1989) and, more specifically being married, have been identified as protective factors for criminal recidivism, although the quality of the relationship seems of greater importance than merely being married (Odonne-Paolucci, Violato, & Schofield, 2000; Sampson & Laub, 2005; Wright & Wright, 1992). Friends outside the intimate sphere can be sources of social control and prevent recidivism as well, if these network-members are prosocial and stable (Borowsky, Hogan, & Ireland, 1997; Vance, Bowen, Fernandez, & Thompson, 2002).

Most studies on the role of friendships are limited to adolescents. In studies of adult samples, friends are replaced by the general term social network, and that seems to have a protective function (Goggin, Gendreau, & Gray, 1998; Hilterman, 2000), although the relationship of the size of the social network with desistance from criminal behaviour has not been supported in every study (see e.g., Estroff & Zimmer, 1994). However, friends or family have also been related to an increased recidivism risk, when these network members had a criminal background (e.g., Andrews & Bonta, 1995; Hilterman, 2000; Hirschi, 1969). In the MacArthur Risk Assessment study, Estroff and Zimmer (1994) found that composition of the network was related to violence. The number of relatives in the network was positively related to violent behaviour, and the number of mental health professionals in the social network was negatively related to violence (see also: Estroff, Zimmer, Lachicotte, & Benoit, 1994). The amount of contact with mental health professionals also predicted violent acts negatively in psychiatric patients in the MacArthur study on risk assessment (Monahan *et al.*, 2001).

In most criminological theories, social ties are not limited to social relationships. Other social institutions can provide support, control and resources. Work, structured leisure activities and church are three important institutions in which a person can participate. Employment status has often been found to be a factor which influences the risk of delinquent behaviour (see e.g., Gendreau, Goggin, & Gray, 2000; Sampson & Laub, 1990), but also a more subjective employment rating, such as when a patient/offender is able to pinpoint work needs, has been related to reduced risk in a meta-analysis (Gendreau *et al.*, 2000). As far as we know, the possible protective role of structured leisure activities for adult offenders has rarely been studied, although there are indications from research in juveniles that structured leisure activities with others can help prevent delinquency (Durant, Knight, & Goodman, 1997; Hoge, Andrews, & Leschied, 1996; Reddon, Pope, Friel, & Sinha, 1996). A third social institution which could play a role in risk prevention is the church. Belonging to a religion has been found to reduce criminal behaviour in adolescents (Rutenfrans & Terlouw, 1994), as was engaging in religious activities, such as church attendance, in adults (Ellis & Peterson, 1996; Pettersson, 1991).

Most studies into a possible protective role of social ties have been conducted in adolescent samples, general or delinquent, and among general adult offender groups. Studies into social ties among (forensic) psychiatric patients are still limited, except for the MacArthur study (Monahan *et al.*, 2001). A large proportion of Dutch forensic psychiatric patients suffer from a personality disorder (PD), especially Cluster B PDs (Antisocial, Borderline, Narcissistic and Histrionic; Hildebrand & de Ruiter, 2004). Several of the diagnostic criteria for PDs (American Psychiatric Association, 2000) are related to the inability to engage in or maintain social relationships or to participate responsibly in social institutions. Whether social ties could serve a protective role for forensic patients with PDs is an empirical question. The current study examined the relationship between social ties and delinquent behaviour in forensic patients with personality disorders. More specifically, the focus was on the short-term effect of social ties on criminal behaviour. This choice was made because social ties are dynamic factors that tend to fluctuate over time.

In line with the above-mentioned theoretical models and previous findings in other samples, we hypothesized that social ties have a protective effect on short-term delinquent behaviour in personality disordered offenders. Secondly, we hypothesized that there would be a positive relationship between risk factors and short-term delinquent behaviour. Thirdly, we expected the negative relationship between social ties and delinquent behaviour to remain when we controlled for the influence of risk factors.

Method

Participants

A prospective multi-site study was performed, using patients attending four forensic psychiatric out-patient facilities in The Netherlands. The inclusion criteria were: male, 18 years and older, IQ >70, predominant PD or PD traits. Patients suffering from schizophrenia or related disorders, (severe) anxiety disorders, or mood disorders were excluded. Of all eligible patients, a random sample was taken. The sampling procedure was as follows. First, researchers computed a random number selection (using random number selection in SPSS) based on a targeted number of 300 patients to participate in the research. Next, clinicians of the four locations delivered a list of patients meeting inclusion criteria, not meeting exclusion criteria. These lists were numbered consecutively and patients with numbers in the random number selection were included in the sample.

Because of a time limit for the first round of data collection (October 2003 until May 2005), a total of 214 patients were contacted by their therapist or the first author and handed a leaflet containing basic information about the study. Seventy-nine patients (36.9%) did not want to participate: 135 patients (63.1%) participated at baseline (T_0). Of these 135 patients, 55 (40.7%) returned the questionnaire of *Self-reported Delinquent Behaviours* (SRDB; van Dam, Janssens, de Bruyn, van Koolen, & Spee, 1999) at both 3 (T_1) and 6 months (T_2) after baseline. Comparing these 55 patients with the 80 ($135 - 55 =$) drop-outs on psychiatric and criminal background variables, mental disorder (including PD), demographic characteristics and self-reported delinquent behaviours did not show significant differences, except that none of the three patients with Dependent PD dropped out ($\chi^2 [1] = 4.46; p = .035$).

Of the 55 patients, 39 (70.9%) fulfilled diagnostic criteria for one or more PDs while 29.1% met criteria for one or more PD traits. Most patients were classified as PD Not Otherwise Specified (34.5%), and 21.8% suffered from a Antisocial, Borderline and/or Narcissistic PD. Five patients (9.1%) suffered from a cluster C PD (Dependent and/or Avoidant).

Measures

Self-reported offences

Offences of forensic patients were measured three and six months after baseline using the *Self-Reported Delinquent Behaviours* list (SRDB; van Dam et al., 1999). The SRDB asks the respondent to indicate which of 21 types of delinquent behaviours he displayed during the previous three months. There is one open item for offences not listed. No official recidivism data were used, such as re-arrests or reconvictions, only self-reported offending behaviour was used. Self-reported delinquent behaviour was divided into property offences, violent offences, and sexual offences (see Table 2). Furthermore, the sum of all 21 types of delinquent behaviours and the open question was calculated and used as total of offences. Each item was only counted once, even though a person could indicate that he displayed the specific delinquent behaviour multiple times during the 3-month period. A dichotomized score of offences was used in the analyses, with 0 indicating no offence and 1 indicating one or more types of offences within one of the four categories.

A one-week test-retest reliability study of the SRDB was conducted among 27 adult male forensic psychiatric outpatients. The reliability was $r_s = .72$ for property offences,

$r_s = .74$ for violent offences and $r_s = .82$ for total number of offences. No information on the reliability of the SRDB for sexual offences could be determined due to the absence of such offences.

Social ties

In this study, social ties were operationalized as (1) social contacts and (2) participation in social institutions. Eight indicators of social contacts were used: (1) relationships with a partner, (2) family, and (3) friends; (4) marital status, (5) the presence of children, (6) living with others, and (7) social contact with a boss and (8) with co-workers at the workplace. Furthermore, four social institutions in which informal social control can be exerted were used: (1) work, (2) structured daily activity, (3) structured leisure activities, and (4) church attendance. Data were taken from the *Lancashire Quality of Life Profile* (LQoLP; van Nieuwenhuizen, Schene, & Koeter, 1998), an interview assessing objective and subjective indicators of quality of life, and from the *Level of Service Inventory Revised* (LSI-R; Andrews & Bonta, 1995), a need assessment instrument filled in by a trained interviewer using file information and a patient-interview. The 12 social ties variables were dichotomized as present (score 1) or not present (score 0). The summed score of social contacts, with a maximum of eight, and the summed score of social institutions, with a maximum of three (work was omitted from the summation, due to high overlap with daily activities), were also used in the analyses.

Risk factors

The relationship between social ties and recidivism can be influenced by other characteristics of the patient. Based on the risk assessment literature (e.g., Andrews & Bonta, 1995; Hilterman, 2000; Hirschi, 1969; Monahan, 1981; Monahan *et al.*, 2001), three risk factors for recidivism were used: criminal friends, criminal family or partner, and prior criminal convictions. The first two are risk factors directly related to social ties. Regarding the third risk factor, Monahan (1981, p. 104) stated that 'if there is one finding that overshadows all others in the area of prediction, it is that the probability of future crime increases with each prior criminal act'. These variables were taken from the LSI-R, and they were dichotomized into a score of 0 if the risk factor was absent and a score of 1 if it was present.

As a fourth general risk factor, the LSI-R (Andrews & Bonta, 1995) was used to assess the *level of risk* a patient posed. Scores could range from 0 to 54, which were transformed into valid percentages. Following Austin, Coleman, Peyton, and Johnson (2003), a score between 0 and 28% was considered low risk; a score between 28 and 41% was labelled moderate risk; and a score of 41% or more was considered high risk of recidivism. Fifteen patients (27.3%) were assessed as low risk, 17 patients (30.9%) were categorized as posing a medium risk, and 23 patients (41.8%) were deemed to pose a high risk of recidivism.

Treatment intensity

Contact with mental health professionals as expressed through treatment intensity was used as protective control variable. Information on treatment was gathered over the period between T_0 and T_2 . The number of contacts per type of treatment was registered. Not every treatment facility offered the same types of treatment.

However, the professional background of clinicians was comparable. We distinguished between high and low treatment intensity, based on dichotomising the number of treatment contacts between T_0 and T_2 using a median split, which was 22 contacts for patients participating at T_1 and T_2 . Twenty-seven patients had fewer than 22 treatment sessions during the 6 months (=low treatment intensity) and 28 patients had 22 or more sessions (=high treatment intensity).

Procedure

Three measurements were performed: baseline (T_0), 3 months later (T_1), and after 6 months (T_2). The sample of patients were contacted by their therapist or the first author and handed a leaflet containing basic information about the study. At T_0 , social ties were assessed for all participating patients by means of the extended Dutch version of the IQoLP (van Nieuwenhuizen *et al.*, 1998) and the LSI-R (Andrews & Bonta, 1995). At T_1 , all patients who were interviewed at T_0 were sent or given an envelope containing the SRDB (van Dam *et al.*, 1999). If a patient was no longer in treatment or the frequency of contact was low, the questionnaire was sent to his last known address, otherwise it was given to him during a treatment session. At T_2 , this list was administered for the second time to the participating patients. An appointment was made with the patient by contacting him during a treatment session or by calling him at his last known telephone number. In order to guarantee anonymity of the patients, the data collection procedure was designed in such a way that the researchers were unable to determine which questionnaire was filled out by which patient. Before the first interview, every patient gave written informed consent and permission to obtain medical and judicial information.

Data-analysis

The bivariate relationships between the 12 social ties (including Work) and three risk factors, risk level and offences were examined using Chi square tests. *t* Tests were used to study the relationship between delinquent behaviour and the sum of social institutions (excluding work) and the sum of social relationships. Next, these analyses were repeated, controlling for criminal friends, for criminal family or partner, for prior convictions, for general risk level and for treatment intensity, using partial correlations. If applicable, Spearman correlations were computed. Backward (likelihood ratio; LR) Hierarchic Logistic Regression analyses were performed for each type of self-reported offence, in which the three risk factors, the general risk level and treatment intensity were entered in Block 1 and the sum of social relationships and the sum of social institutions were entered in Block 2. This was repeated in reversed order. Significance levels were set at $\alpha \leq .05$.

Results

Patient characteristics

Patients who participated in this study ($N = 55$) were all male with an average age of 38.5 years. Almost a third of the patients had not finished secondary school (32.7%). Patients often had financial debts (excluding mortgages). More than half of the patients (58.2%) lived on social welfare.

Criminal history

Although the majority of the patients (78.2%) were in treatment because of criminal behaviour, only one third (34.5%) of them had been sentenced to mandatory treatment by court. About half of the patients (52.7%) had displayed violent behaviour, and one third (32.7%) had previously committed sexual offences. A smaller proportion had committed arson (9.1%) or a property offence (14.5%). Sixty-seven per cent of the patients had ever been convicted of a crime (average number of convictions = 2.4, $SD = 3.5$), which had led to incarceration for 36.4% of the patients. About a third (34%) of the patients had criminal friends, and even more (42.3%) had criminal family members.

Social ties

Most patients had frequent social contacts, as indicated by their contact with family members, living with others or their intimate partner relationship (Table 1). The possibility of social support was present for most patients, since most stated they had a friend who would help when they needed it. Furthermore, almost half of the patients had children. One patient reported having no social relationships. Contact with a boss or with co-workers can, of course, only be present if a patient has employment. Most patients who held a job reported good contact with both their bosses and co-workers. On average, patients mentioned 4.1 of the eight possible relationships used in this study ($SD = 1.8$).

Patients engaged in structured activities with others, either in a work setting, other daily activities, in organized leisure activities or in church-visits. Except for church-visits, about a third of the patients engaged in each of the activities. Almost two-thirds (63.6%) of the patients were involved in one or more of the three structured social institutions (work excluded; $M = 0.9$; $SD = 0.8$).

Self-reported offences

More than half of the patients reported one or more types of offences between T_0 and T_2 (Table 2). Offences mentioned most frequently were possession of a weapon, dealing in stolen goods and threat with violence in public. Almost a third of the patients had committed a violent offence, and 27% had committed a property offence; there was no significant relationship between the two types of offences ($r_s = .24$; $p > .05$). About one eighth of the patients displayed both types of offences. In analyzing the relationship between self-reported offences and social ties, sexual offences were not included, due to low base-rate.

Social ties and self-reported offences

Two of the social contacts were significantly related to two types of offences (Table 1). Good contact with co-workers and with their boss corresponded to a lower rate of violent offences. Club participation was related to a lower level of property offences, violent offences and general offences. None of the patients who visited church reported violent offences, as opposed to a third of the patients who did not go to church. The number of social institutions a patient was engaged in correlated negatively and significantly with violent offences ($M_{no\ violence} = 1.10$; $SD = 0.82$; $M_{violence} = 0.44$; $SD = 0.73$; $F[1] = 7.93$; $p = .007$). This relationship was not found for property

Table 1. Presence or absence of social ties at T₀ and relationships with three types of self-reported offences between T₀ and T₂ (N = 55)

	Tie present at T ₀ (%)	Property offences		Violent offences		General offences	
		Tie absent (%)	Tie present (%)	Tie absent (%)	Tie present (%)	Tie absent (%)	Tie present (%)
<i>Social relationships</i>							
Daily or weekly contact with family	87.3	42.9	25.0	42.9	27.1	57.1	56.3
Has a friend who helps	78.2	25.0	27.9	33.3	27.9	75.0	51.2
Living with others	69.1	17.6	31.6	17.6	34.2	47.1	60.5
Has children	49.1	32.1	22.2	25.0	33.3	46.4	66.7
Relationship	47.3	17.2	38.5	20.7	38.5	48.3	65.4
Good contact with co-workers	30.9	26.3	29.4	39.5	5.9*	60.5	47.1
Good contact with boss	29.1	25.6	31.3	38.5	6.3*	59.0	50.0
Married	21.8	25.6	33.3	27.9	33.3	58.1	50.0
<i>Social institutions</i>							
Club participation	41.8	37.5	13.0*	43.8	8.7**	68.8	39.1*
Structured daily activities with others	36.4	28.6	25.0	34.3	20.0	60.0	50.0
Work	34.5	22.2	36.8	30.6	26.3	55.6	57.9
Visits church	14.5	27.7	25.0	34.0	0.0*	55.3	62.5

Note. Except for the first column, cells represent percentage of patients who reported one or more types of offences between T₀ and T₂.

* p ≤ .05; ** p ≤ .01.

Table 2. Self-reported offences during six months (T_0 to T_2 ; $N = 55$)

	%	N
<i>Property offences</i>	27.3	15
Dealing in stolen goods	14.5	8
Using public transportation without paying	10.9	6
Selling of drugs	7.3	4
Vandalising public property (incl. graffiti)	3.6	2
Shoplifting	1.8	1
Abuse of animals	1.8	1
Burglary or theft	0	0
<i>Violent offences</i>	29.1	16
Threat with public violence	18.2	10
Involvement in a fight	14.5	8
(Threat of) violence against family members	10.9	6
Assault	5.5	3
Wounding with a weapon	0	0
Armed burglary	0	0
<i>Sexual offences</i>	1.8	1
Paedophilic offence	1.8	1
Sexual assault or rape	0	0
<i>Other offences</i>		
Possession of an illegal weapon	23.6	13
Driving under the influence	14.5	8
Offences not listed	3.6	2
Arson	0	0
<i>Total general offences</i>	56.4	31

offences or for general offences. No significant relationships emerged between the number of social contacts and either type of offence.

We explored the relationships of the five covariates - criminal family members, criminal friends, prior convictions, LSI-R risk level, and treatment intensity - with self-reported offences. Two significant relationships emerged; if patients had criminal friends, they had committed property offences three times more often (yes = 44.4%; no = 14.3%; $\chi^2[1] = 5.84$; $p < .05$), and LSI-R risk level correlated with violent offences ($r_s = .28$; $p < .05$), but not significantly with property offences or general offences.

After controlling for criminal friends, three significant correlations between offences and social ties remained. If patients had criminal friends, club participation correlated negatively with property offences (no club participation = 70.0% recidivists; club participation = 12.5% recidivists; $\chi^2[1] = 5.95$; $p = .015$); with violent offences (no = 70.0% recidivists; yes = 0%; $\chi^2[1] = 9.16$; $p = .002$); and with general self-reported offences (no = 90.0%; yes = 25.0%; $\chi^2[1] = 7.90$; $p = .005$). If patients reported not to have criminal friends, none of the previously found relationships of social ties with delinquent behaviour remained significant.

Controlling for criminal background of family members or one's partner, two correlations remained for patients with criminal family members or partner: club participation correlated with violent offences (no club participation = 58.3% recidivists; club participation = 0% recidivists; $\chi^2[1] = 8.56$; $p = .003$). The number

of social institutions also correlated negatively with violent offences for these patients (0 ties = 66.7% recidivists; 1 tie = 9.1%; 2 ties = 0%; $\chi^2[2] = 8.59$; $p = .014$). If patients did not have family members with a criminal background, church visits was related to a lower level of self-reported violent offences (no visit = 39.1% recidivists; visits = 0%; $\chi^2[1] = 3.91$; $p = .048$).

The relationships of social ties with self-reported delinquent behaviours were next controlled for prior convictions and for LSI-R risk level. Five relationships remained when controlling for prior convictions. If patients had had prior convictions: club participation correlated negatively with violent offences (no club participation = 44.0% recidivists; club participation = 8.3% recidivists; $\chi^2[1] = 4.71$; $p = .030$); and with property offences (no = 40.0% recidivists; yes = 8.3%; $\chi^2[1] = 3.89$; $p = .049$); good contact with colleagues correlated negatively with violent offences (good contact = 0% recidivists; bad contact = 42.9%; $\chi^2[1] = 5.71$; $p = .017$), as did good contact with a boss (good contact = 0% recidivists; bad contact = 41.4%; $\chi^2[1] = 4.90$; $p = .027$); the number of social institutions correlated negatively with violent offences (0 ties = 58.8% recidivists; 1 tie = 6.7%; 2 ties = 25.0%; 3 ties = .0%; $\chi^2[3] = 10.53$; $p = .015$).

Two significant relationships remained when controlling for general risk level. For high-risk patients club participation correlated negatively with violent offences (no club participation = 58.8% recidivists; club participation = 0% recidivists; $\chi^2[1] = 6.24$; $p = .012$). And participation in social institutions correlated with violent offences for these patients (0 ties = 64.3% recidivists; 1 tie = 12.5%; 2 ties = 0%; $\chi^2[2] = 6.36$; $p = .042$). No significant correlations were found for patients in the low and in the medium risk category.

Three relationships remained while controlling for treatment intensity. For patients who received treatment at low intensity, violent offences were related to quality of contact with co-workers (good contact = 0% recidivists; bad contact = 38.9% recidivists; $\chi^2[1] = 4.73$; $p = .030$), and similarly to the quality of contact with bosses (good contact = 0% recidivists; bad contact = 38.9%; $\chi^2[1] = 4.73$; $p = .030$). For the group of low intensity treatment patients, club membership was related to a lower level of violent self-reported offences (no club participation = 43.8% recidivists; club participation = 0%; $\chi^2[1] = 6.50$; $p = .011$).

Furthermore, we studied the effect of protective factors in high-risk patients ($N = 23$), separately. Patients with a high-risk level who had an intimate relationship reported property offences more often than patients without a relationship (no relationship = 9.1% recidivists; relationship = 58.3%; $\chi^2[1] = 6.14$; $p = .013$). They also reported more violent offences if they lived with others than when they lived alone (living alone = 20.0% recidivists; living with others = 61.5%; $\chi^2[1] = 4.00$; $p = .046$). Two other statistical relationships for high-risk patients are mentioned earlier.

To explore the influence of social ties on criminal behaviour after controlling for the three risk factors, general risk level, and treatment intensity, a hierarchic logistic regression analysis was performed (Table 3). Criminal friends and treatment intensity explained 29% of the variance in self-reported property offences; none of the entries in Block 2 increased the degree of explained variance. Prior convictions and participation in social institutions together explained 24% of the variance in violent offences. In the third equation for self-reported general offences, prior convictions explained 12% of the variance. If the Blocks were entered in reversed order (not included in the Table), only the results for violent offences changed slightly: social institutions entered in the equation in Block 1 ($B = -1.18$; $SE = 0.49$; $(Exp)B = 0.31$; $\chi^2[1] = 7.47$; $p \leq .01$; Nagelkerke $R^2 = .19$), and no entries in Block 2 added significantly to the equation.

Table 3. Prediction of self-reported offences using three risk factors, general risk level, and social relationships and social institutions ($N = 50$)

	Property offences			Violent offences			General offences		
	B	SE	(Exp)B	B	SE	(Exp)B	B	SE	(Exp)B
<i>Block 1 Risk factors</i>									
Prior convictions				0.22	0.10	1.25	0.23	0.13	1.26
Criminal friends	1.79	0.75	5.98						
Treatment intensity	-1.68	0.80	0.19						
<i>Block 2 Social ties</i>									
Social institutions				-0.91	0.52	0.40			
Chi square model	10.79			9.55			4.75		
df	2			2			1		
p	.005			.008			.03		
Nagelkerke R^2	0.29			0.24			0.12		

Note. A Backward (LR) Hierarchic Logistic Regression was performed for each of the three types of offences. Five variables were entered in Block 1: prior convictions, criminal family member, criminal friends, treatment intensity and LSI-R risk level. In Block 2, two variables were entered: social relationships and social institutions. Only variables which entered any of the three end-models are displayed in the table. B = regression coefficient. SE B = Standard error of B .

Finally, we conducted *post hoc* analyses using the number of PDs, the number of cluster B PDs and the presence of cluster B traits as separate covariates. The computation of the bivariate correlations resulted in one significant relationship: the number of Cluster B PDs correlated with general offences ($r_s = .29$; $p = .032$). In the logistic regressions, the number of PDs added 8% to the explained variance of violent offences ($B = 1.38$; $SE = 0.79$; $(Exp)B = 3.97$; Model: $\chi^2[3] = 13.10$; $p \leq .005$; Nagelkerke $R^2 = .32$). The number of cluster B PDs added 9% to the explained variance for self-reported general offences ($B = 1.41$; $SE = 0.84$; $(Exp)B = 4.09$; Model: $\chi^2[2] = 8.35$; $p \leq .05$; Nagelkerke $R^2 = .21$); no influence was found in the other cases.

Discussion

This study aimed to identify the possible protective role of social ties for desistance from re-offending in forensic outpatients with personality disorders. We found that several social ties, or rather: ties to social institutions, were related to lower levels of self-reported offences. Patients who engaged in structured leisure activities, who had good contacts at work or who went to church displayed lower levels of subsequent offences than patients who did not participate in these social institutions. These relationships were found for self-reported violent offences, which included threat with violence in public, violence against family members and involvement in fights. Furthermore, club participation correlated with fewer property offences and less delinquent behaviour in general. Most of these protective relationships remained when we controlled for risk factors, but mainly for patients with risk factors than for patients without those factors. When patients followed treatment with a low intensity, several social ties were related to lower levels of violent behaviour, which was not the case if patients had higher intensity treatment during the same period. High-risk patients who

participated in social institutions in general and in clubs in particular reported significantly fewer violent offences. After entering four risk factors and treatment intensity, participating in social institutions still added to the explained variance in violent offences.

In this study, we did not find evidence for a protective role of intimate social network members. On the contrary, high-risk patients reported more property offences if they had an intimate relationship; and high-risk patients who lived with other people reported more violent offences. Whether the partner or other persons in the high-risk patient's household had a criminal background was not examined, although this could have influenced the results. For instance, Hilterman (2000) found that the protective influence of non-deviant network members on recidivism during leave was nullified by deviant network members. Estroff and Zimmer (1994) found that intimate network members (partner, children, and family) were more often victim of violence by psychiatric patients than people outside of the primary social network, and they also discovered that the more relatives a patient had in his social network the more likely he was to threaten with violence or display violent behaviour. Their sample, however, consisted of acute psychiatric patients. Based on the results of our study, it can be concluded that attachment to social institutions, but not intimate social ties, might have a protective function with regard to violent behaviour.

Personality disorders, especially Cluster B PDs, are characterized by an inability to engage in and maintain prosocial relationships, which will be expressed in the absence of work, a social network, and of participation in other prosocial structured activities such as church or leisure organizations (APA, 2000). As a consequence, persons with a Cluster B PD might, by definition, score low on participation in social relationships and social institutions, which might obscure a possible protective function of these ties for patients with other PDs. To explore this possible bias, we conducted *post hoc* analyses using the number PDs, the number of cluster B PDs and the presence of cluster B traits as covariates. Although the number of PDs was related to violent offences and the number of Cluster B PDs to general offences, none of the models changed to such an extent that we would need to conclude that the absence or presence of a relationship between social ties and self-reported delinquent behaviour was a result of the composition of our sample with regard to type of personality disorders.

Work and work-related activities such as education have often been related to a reduction in criminal behaviour and criminal recidivism (see Gendreau *et al.*, 2000). However, forensic PD outpatients did not seem to benefit from structured daily activities as such, among which work and education. A more qualitative aspect of work, namely having a good relationship with co-workers or a boss, was more important in this respect. In our study, as in others (Ellis & Peterson, 1996; Pettersson, 1991), if a patient visited church, this was related to a lower level of self-reported violent behaviour. The third social institution taken into account here, structured leisure activities through club-membership, is a subject hardly ever studied in adult criminal samples. For youths, there are strong indications that involvement in such structured activities helps youngsters to stay out of trouble (Durant *et al.*, 1997; Hoge *et al.*, 1996; Reddon *et al.*, 1996). The same seems to hold true for this adult sample of male forensic outpatients with PDs.

More than half of the patients stated that they had engaged in delinquent behaviour at one or more occasions during the 6 months follow-up. In a study among juvenile delinquents (van Dam, Janssens, & de Bruyn, 2003), 75% of the boys reported such behaviour up until one year after finishing treatment. Besides the fact that Van Dam *et al.* studied juvenile delinquents, these boys were no longer in treatment during

follow-up, whereas most participants in our sample of forensic outpatients still followed treatment and thus had some form of external control with regard to their (delinquent) behaviour. This might explain the larger proportion of delinquent boys who reported offending behaviour compared to our PD outpatients. In the Mac Arthur study, Monahan and colleagues (2001) found that 22.4% of their sample of psychiatric patients reported having engaged in violent behaviour during a one year follow-up. In our sample, 29.1% reported violent behaviour, which seems comparable. The number of patients who displayed delinquent behaviour is rather large. The types of behaviour included in the SRDB are criminal offences which will not always be reported to the police and which some patients do not interpret as criminal offences (e.g., using public transportation without paying; threat with public violence). However, minor infringements have been shown to be a precursor to subsequent criminal behaviour and reconvictions in forensic psychiatric patients (Philipse, 2005). Clinicians were unaware of these transgressions, otherwise treatment would have possibly been terminated.

No causal expectation could be formulated, due to the design of our study. We did not conduct analyses including causal modelling, because assumptions for such analyses were not met (experimental design or the number of respondents needed for Structural Equation Modelling). However, we did use a prospective design, which at least allows the conclusion that one type of behaviour follows another.

A second limitation of our study is the high number of drop-outs. One hundred thirty-five patients participated in the first round of this study. Less than half (40.7%) of them returned the self-report questionnaire on delinquent behaviour at the two subsequent assessments. This high non-response rate could lead to non-response bias, which should be taken into account when interpreting the results. We compared the responders with the drop-outs on several characteristics, such as self-reported delinquent behaviour before T_0 , and we did not find any significant difference between the two groups. However, it is advisable to try to increase response rates in these types of clinical studies, but methods to enhance response rate, such as postal or telephone reminders or face-to-face contacts, could not be used here due to anonymity issues. The data collection procedure required that the primary researcher was unable to determine whether or not an individual patient had returned the questionnaire, and a group wise reminder was impossible due to the fact that T_0 data were collected over a period of one-and-a-half years.

A third limitation stems from the use of self-report data to measure delinquent behaviour. Self-reported offences could lead to underestimation in some cases or overestimation in other cases (Pauwels & Pleysier, 2005; Zhang, Benson, & Deng, 2000). The doubts about the reliability of self-reported offences made us decide to perform a test-retest reliability study on types of delinquent behaviour within our sample. The test-retest reliability was adequate, increasing our confidence in the quality of these self-report data. It is, of course, advisable to try and increase both the response rate and/or to test the validity of self-report data, for instance, through the use of official judicial files and third party information. However, the possible information gain (see Monahan *et al.*, 2001) should be weighed against the possible loss in response rate. This study focused on short-term delinquent behaviour and did not use other sources, because firstly, we were interested in the relation between dynamic factors and more frequent infringements or delinquent behaviour; secondly, because the effect of the included factors on criminal (re)convictions has been subject of study more often; and thirdly, because we estimated a loss in response if proxies would have been approached, after approval of the patients, for additional information on recent delinquent behaviour.

The pivotal goal of forensic psychiatric treatment is the reduction of criminal recidivism. Most current risk assessment tools advocate the stimulation of social ties as a means to this end (see e.g., LSI-R; Andrews & Bonta, 1995; HCR-20; Webster *et al.*, 1997; START; Webster *et al.*, 2004). In their Life-Course theory of Crime, Sampson and Laub (1990) seem to allot equal roles to close and more distal institution which provide social control, both formal and informal. Our patients with PD seem to rely more and sometimes even only on more distal sources of control such as co-workers or people with whom they spent their structured leisure time or whom they meet within their religious community than on closer sources such as a partner, family or friends. Our findings show that connection to social institutions, such as leisure clubs and churches may indeed serve the purpose of protection against re-offending, but that social ties to criminal friends are equally or even more powerful as risk factors for criminal recidivism. Thus, effective forensic treatment should focus on both the reduction of risk factors and the increase of protective factors within the realm of social bonds.

References

- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington DC: Author, text revision.
- Andrews, D. A., & Bonta, J. L. (1995). *The Level of Service Inventory - Revised*. Toronto: Multi-Health Systems.
- Austin, J., Coleman, D., Peyton, J., & Johnson, K. D. (2003). *Reliability and validity study of the LSI-R risk assessment instrument*. (Final Report Submitted to The Pennsylvania Board of Probation and Parole on January 9th 2003), Washington, DC: The George Washington University, The Institute on Crime, Justice and Corrections. Retrieved from http://www.pccd.state.pa.us/pccd/lib/pccd/stats/lsi_r_final_report.pdf
- Borowsky, I. W., Hogan, M., & Ireland, M. (1997). Adolescent sexual aggression: Risk and protective factors. *Pediatrics*, *100*, E7.
- Costa, F. M., Jessor, R., & Turbin, M. S. (1999). Transition into adolescent problem drinking: The role of psychosocial risk and protective factors. *Journal of Studies on Alcohol*, *60*, 480-490.
- de Ruiter, C., & Hildebrand, M. (2007). Risk assessment and treatment in Dutch forensic psychiatry. *Netherlands Journal of Psychology*, *63*, 166-175.
- de Vogel, V., de Ruiter, C., Bouman, Y., & de Vries Robbé, M. (2007). *SAPROF; Richtlijnen voor beoordelen van beschermende factoren voor gewelddadig gedrag* [SAPROF; Guidelines for the assessment of protective factors for violent behaviour]. Utrecht, The Netherlands: Forum Educatief.
- de Vogel, V., de Ruiter, C., Bouman, Y. H. A., & de Vries Robbé, M. (2009). *SAPROF; Guidelines for the assessment of protective factors for violence risk*. Utrecht, The Netherlands: Forum Educatief.
- Durant, R. H., Knight, J., & Goodman, E. (1997). Factors associated with aggressive and delinquent behaviors among patients attending an adolescent medicine clinic. *Journal of Adolescent Health*, *21*, 303-308.
- Ellis, L., & Peterson, J. (1996). Crime and religion: An international comparison among thirteen industrial nations. *Personality and Individual Differences*, *20*, 761-768.
- Estroff, S. E., & Zimmer, C. (1994). Social networks, social support, and violence among persons with severe, persistent mental illness. In J. Monahan & H. J. Steadman (Eds.), *Violence and mental disorder; developments in risk assessment* (pp. 249-295). Chicago/London: The University of Chicago press.
- Estroff, S. E., Zimmer, C., Lachicotte, W. S., & Benoit, J. (1994). The influence of social networks and social support on violence by persons with serious mental illness. *Hospital and Community Psychiatry*, *45*, 669-679.

- Farrington, D. P., & Loeber, R. (2000). Epidemiology of juvenile violence. *Child and Adolescent Psychiatric Clinics of North America*, 9, 733-748.
- Fitzpatrick, K. M. (1997). Fighting among America's youth: A risk and protective factors approach. *Journal of Health and Social Behavior*, 38, 131-148.
- Gendreau, P., Goggin, C., & Gray, G. (2000). *Case need review: Employment domain*. Saint John, NB: Centre for Criminal Justice Studies, University of New Brunswick.
- Goggin, C., Gendreau, P., & Gray, G. (1998). *Case needs review: Associates/Social interaction Domain*. Saint John, NB: Center for Criminal Justice Studies, University of New Brunswick.
- Hawkins, J. D., Catalano, R. F., & Miller, J. Y. (1992). Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychological Bulletin*, 112, 64-105.
- Hildebrand, M., & de Ruiter, C. (2004). PCL-R psychopathy and its relation to DSM-IV Axis I and II disorders in a sample of male forensic psychiatric patients in the Netherlands. *International Journal of Law and Psychiatry*, 27, 233-248.
- Hildebrand, M., Hesper, B. L., Spreen, M., & Nijman, H. L. I. (2005). *De waarde van gestructureerde risicotaxatie en van de diagnose psychopathie*. Een onderzoek naar de betrouwbaarheid en predictieve validiteit van de HCR-20, HKT-30 en PCL-R. [The value of structured risk assessment and psychopathy. A research into the validity and reliability of the HCR-20, HKT-30 en PCL-R]. Utrecht, The Netherlands: Expertisecentrum Forensische Psychiatrie.
- Hilterman, E. L. B. (2000). Tijdens de oefening terug naar af. Een onderzoek naar de predictie van ernstige recidive door tbs-gestelden tijdens verlof. [Back to square one during treatment. A research of the prediction of severe recidivism by forensic patients during leave]. *Tijdschrift voor Criminologie*, 42, 232-252.
- Hirschi, T. (1969). *Causes of Delinquency*. Berkeley: University of California Press.
- Hoge, R. D., Andrews, D. A., & Leschied, A. W. (1996). An investigation of risk and protective factors in a sample of youthful offenders. *Journal of Child Psychology and Psychiatry and Applied Disciplines*, 37, 419-424.
- Klassen, D., & O'Connor, W. A. (1989). Assessing the risk of violence in released mental patients: A cross-validation study. *Psychological Assessment*, 1, 75-81.
- Miller, H. A. (2006). A dynamic assessment of offender risk, needs, and strengths in a sample of pre-release general offenders. *Behavioral Sciences and the Law*, 24, 767-782.
- Monahan, J. (1981). *Predicting violent behavior: An assessment of clinical techniques*. Beverly Hills, CA: Sage.
- Monahan, J., Steadman, H. J., Silver, E., Appelbaum, P. S., Robbins, P. C., Mulvey, E. P., et al. (2001). *Rethinking risk assessment: The MacArthur study of mental disorder and violence*. Oxford, New York: Oxford University Press.
- Odonne-Paolucci, E. O., Violato, C., & Schofield, M. A. (2000). *A review of marital and family variables as they relate to adult criminal recidivism*. Calgary: National Foundation for Family Research and Education.
- Pauwels, L., & Pleysier, S. (2005). Effecten van antwoordstijlen in etiologisch self-report-onderzoek. Een 'causale modellenbenadering'. [Effects of response-styles in etiologic self-report research. A 'causal models approach']. *Tijdschrift voor Criminologie*, 47, 42-61.
- Pettersson, T. (1991). Religion and criminality: Structural relationships between church involvement and crime rates in contemporary Sweden. *Journal for the Scientific Study of Religion*, 30, 279-291.
- Philipse, M. W. G. (2005). *Predicting criminal recidivism. Empirical studies and clinical practice in forensic psychiatry*. Nijmegen, The Netherlands: Thesis Radboud Universiteit Nijmegen.
- Philipse, M. (2006). 'Evidence based practice' in de tbs. Maatschappelijke aspiraties versus empirische realiteit. ['Evidence based practice' in Dutch forensic psychiatry. Societal aspirations versus empirical reality]. *Pedagogiek*, 26, 274-290.

- Reddon, J. R., Pope, G. A., Friel, J. P., & Sinha, B. K. (1996). Leisure motivation in relation to psychosocial adjustment and personality in young offender and high school samples. *Journal of Clinical Psychology, 52*, 679-685.
- Rogers, R. (2000). The uncritical acceptance of risk assessment in forensic practice. *Law and Human Behavior, 24*, 595-605.
- Rutenfrans, C. J. C., & Terlouw, G. J. (1994). *Delinquentie, sociale controle en 'life events' eerste resultaten van een longitudinaal onderzoek*. [Delinquency, social control and life events; first results of a longitudinal research]. Den Haag, The Netherlands: WODC, Onderzoek en beleid.
- Sampson, R. J., & Laub, J. H. (1990). Crime and deviance over the life course: The salience of adult social bonds. *American Sociological Review, 55*, 609-627.
- Sampson, R. J., & Laub, J. H. (2005). A life-course view of the development of crime. *The ANNALS of the American Academy of Political and Social Sciences, 602*, 12-45.
- Vance, J. E., Bowen, N. K., Fernandez, G., & Thompson, S. (2002). Risk and protective factors as predictors of outcome in adolescents with psychiatric disorder and aggression. *Journal of the American Academy of Child & Adolescent Psychiatry, 41*, 36-43.
- van Dam, C., Janssens, J. M. A. N., & de Bruyn, E. E. J. (2003). Risico en beschermende factoren voor recidive in de leefsituatie na vertrek uit een justitiële jeugdinrichting [Risk and protective factors for recidivism in the living situation after release from a juvenile correctional treatment centre]. In J. R. M. Gerris (Ed.), *Gezin, school en gemeente: Integrale jeugdzorg en sociale integratie [Family, school and community: Integral youth care and social integration]* (pp. 23-41). Assen, The Netherlands: Koninklijke Van Gorcum BV.
- van Dam, C., Janssens, J. M. A. M., de Bruyn, E. E. J., van Koolen, J. J. C. M., & Spee, J. E. J. (1999). *Self-report delictlijst. Bewerking van de self-report delictlijst zoals ontwikkeld door het WODC. [Self-report offence list. Adaptation of the self-report offence-list developed by WODC.]* K.U.N./R.I.J. Nijmegen, The Netherlands: De Hunnerberg.
- van Nieuwenhuizen, Ch., Schene, A. H., & Koeter, M. W. J. (1998). *Lancashire Kwaliteit van Leven Profiel, Uitgebreide Nederlandse versie [Lancashire Quality of Life Profile, extended Dutch version]*. Eindhoven, The Netherlands: Youth Forensic Psychiatric Hospital 'De Catamaran'.
- Webster, C. D., Douglas, K. S., Eaves, D., & Hart, S. D. (1997). *HCR-2: Assessing risk for violence. Version 2* Burnaby: Mental Health, Law, and Policy Institute, Simon Fraser University.
- Webster, C. D., Martin, M., Brink, J., Nicholls, T. L., & Middleton, C. (2004). *Short Term Assessment of Risk and Treatability (START). Clinical guide for evaluation risk and recovery*. Ontario: St. Joseph's Healthcare Hamilton.
- Wright, K. N., & Wright, K. E. (1992). Does getting married reduce the likelihood of criminality? A review of the literature. *Federal Probation, 56*, 50-56.
- Zhang, S., Benson, T., & Deng, X. (2000). A test-retest reliability assessment of the international self-report delinquency instrument. *Journal of Criminal Justice, 28*, 283-295.

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