

# Temperament and character dimensions of sex offenders in relation to their parental rearing

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**ABSTRACT** *The aim of the present study was to investigate the interrelation between the personality dimensions, according to the temperament and character theory of Cloninger, and the parenting received in childhood, of subjects who have been convicted for rape and child molestation. For this purpose, 59 rapists, 37 child molesters, and 25 healthy controls completed: (1) The Temperament and Character Inventory (TCI), which measures the heritable temperament dimensions Novelty Seeking (NS), Harm Avoidance (HA), Reward Dependence (RD), and Persistence (PE), and the character dimensions Self Directedness (SD), Cooperativeness (CO), and Self Transcendence (ST). (2) The Measurement of Parental Style (MOPS), which creates the subscales 'indifference', 'overcontrol' and 'abuse' for each parent. We found that NS levels were significantly increased and RD, SD, and CO levels were significantly decreased in both sex offender groups, while PE levels were significantly decreased only in the rapists, and ST levels were significantly increased only in the child molesters, in relation to the controls. The reported father abusiveness in rapists, as well as the reported mother abusiveness in child molesters were significantly increased, in relation to the controls. In the group of rapists, CO levels were negatively correlated with the reported father abusiveness, while the observed low levels of CO could be predicted from father abusiveness. In child molesters, PE levels were negatively correlated with the reported mother abusiveness, while the RD dimension was negatively correlated with the reported father overcontrol. In conclusion, the low levels of RD, PE, and CO of this sex offender sample seems to be linked with the reported abusive/affectionless control style of their parental rearing, while the abusive parental rearing in the group of rapists may contribute to the development of personalities with low CO.*

**KEYWORDS:** *personality, temperament, character, parenting rearing, sex offenders, rapist, child molester*

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## Introduction

Different interactional models of criminal behaviour development have been proposed, most of them including interrelations between, interpersonal, socio-cultural, and family factors. Many researchers tend to study the roots of criminality mainly in terms of environmental influences according to the social learning theory. They assumed that criminal tendency depends on internalized attitudes toward law-breaking that have been developed during childhood in a learning process as a result of history of rewards and punishment (Trasler, 1962, Farrington, 1993, Perris, 1994).

Bowlby (1980) theorized that the relationship between infant and parent affects the child's ability to form affection bonds in later life and many studies examining evidence of such continuity found that dysfunctional parent-child attachment is likely to be a potent pathogenic variable. Several studies have used the perception that an individual forms of his or her relationship with parents using the Parental Bonding Instrument (PBI) (Parker *et al.*, 1979). The 'affectionless control' style of bonding, indicating high overprotective behaviour with low care by the parent, was found to be characteristic of adults with depression (Mackinnon *et al.*, 1993), delinquency (Howard, 1981, Mark, 1994), and drug abuse (Clausen, 1996, Torresani *et al.*, 2000), while the 'affectionate constraint', indicating both high care and high protection, appears to have some specificity to panic disorder (Parker & Gladstone, 1996). In contrast to less optimal bonding styles, 'optimal bonding', which is characterized from the care plus the support of independence, is typically associated with what is considered as successful social adaptation and positive psychosocial outcomes (Parker & Gladstone, 1996). The use of, other PBI, scales measuring parental style showed that emotional neglect or physical and sexual abuse during childhood are associated with severe adjustment problems (Crawford & Fiedler, 1993, Rosen & Martin, 1996). In 1997, Parker *et al.* described the development of the Measure of Parenting Style (MOPS), comprised by refined PBI scales assessing parental indifference and over-control, as well as a scale assessing parental abuse. Parker *et al.* (1997) found a correspondence between the relevant scales of the MOPS and PBI. They also found that MOPS' abuse subscale could remain integral to the MOPS or even complement the standard PBI. This new scale has been used investigating subjects with personality disorders (Parker *et al.*, 1999) and with adjustment disorder (Giotakos & Konstantakopoulos, 2002).

Cloninger *et al.* (1993) proposed a psychobiological theory of personality showing the interrelation of both hereditary and environmental factors. He suggested four genetically determined dimensions of temperament and three dimensions of character, developing during socialization. Temperament dimensions include: (1) Novelty Seeking (NS), characterized by frequent exploratory activity in response to novelty, impulsive behaviour, quick loss of temper, and active avoidance of frustration, (2) Harm Avoidance (HA), characterized by pessimistic worry in anticipation of future problems, passive avoidant behaviours, and rapid fatigability, (3) Reward Dependence (RD), characterized by behaviours that depend on approval of others, and (4) Persistence (PE), which is originally thought to be a component of reward dependence, represented by perseverance despite frustration and fatigue.

Character dimensions correspond to the self-concepts a person identifies the self as (1) an autonomous individual (Self-Directedness [SD]), (2) an internal part of humanity (Cooperativeness [CO]), or (3) an integral part of the universe as a whole (Self-Transcendence [ST]). The basic concept of SD refers to the ability of an individual to control, regulate, and adapt behaviour to fit the situation in accord with individually chosen goals and values, while CO was formulated to measure different aspects of character related to agreeability vs. self-centered aggression and hostility. Some studies in adolescents showed that the combination of high NS and low HA, RD, and PE may predict antisocial or criminal behaviour with concomitant drug abuse (Wills *et al.*, 1994, Masse & Tremblay, 1997). Ruchkin *et al.* (1998) found a similar personality profile in delinquents and increased levels of parental rejection and overprotection, with the most of the personality dimensions to be highly correlated with the parental emotional warmth.

Recent studies reveal that at least two thirds of sexual offenders met the criteria for a personality disorder (Raymond *et al.*, 1999), that sex offenders are more sexually isolated, more assaultive, and more resentful than the general offenders (Valliant & Bergeron, 1997), and that a large proportion of sex offenders report physical or sexual abuse during childhood (Zonana *et al.*, 1999). In addition, recent findings in a group of rapists and child molesters showed that the affectionless control style of parental bonding was highly prevalent in among them (Craissati *et al.*, 2002). The aim of the present study was to investigate interrelations between the personality traits, according to the Cloninger's concept of temperament and character, and the parental rearing received in childhood, of subjects who had been convicted for rape and child molestation.

## Method

Fifty-nine males convicted for rape and 37 males convicted for child molestation, after description of the study, consented to participate in this study. The investigation was individually performed conducted by the same author (O.G.). The participants were prison inmates in the only prison of Greece (Tripolis) which is specified for keeping sexual offenders. Basic demographic data were recorded and a full medical and sexual history was obtained. Their sentence ranged from 5 to 32 years (mean 11.6, SD 9.5), and their stay in prison until that time ranged from 2 to 79 months (mean 20.2, SD 20.7). As a control group 25 healthy men were used, recruited from the staff of the hospital nearby. The mean age of the rapists was 29.3 years (SD 6.6), of the child molesters 42.3 years (SD 10.1), and of the controls 29.8 years (SD 8.3).

All participants completed the Temperament and Character Inventory (TCI) (Cloninger *et al.*, 1994) and the Measurement of Parental Styles (MOPS) (Parker *et al.*, 1997). TCI is a self-reported inventory based on the seven-factor Cloninger's psychological model of the structure and development of personality. In the present study we preferred the version which consists of 140 questions with a five-grade answer scale. The rating option was 'not true at all', 'slightly true', 'indifferent', 'moderately true', and 'extremely true', generating scores of 1, 2, 3, 4 and 5 respectively. It measures the above mentioned heritable temperament dimensions

TABLE I. Means and SDs of the TCI dimensions and MOPS subscales, in controls, rapists and child molesters. Statistical analysis by ANOVA with *post-hoc* comparisons

	Controls ( <i>n</i> = 25) Mean (SD)	Rapists ( <i>n</i> = 59) Mean (SD)	Ch. Molest ( <i>n</i> = 37) Mean (SD)	F	<i>p</i>
<b>TCI</b>					
Harm avoidance	53.0 (8.2)	54.6 (10.2)	51.7 (9.3)	1.40	0.25
Novelty seeking	53.5 (9.9)	69.0 (12.0)***	65.1 (14.2)**	13.7	0.00
Reward dep/ence	66.0 (8.3)	56.5 (9.0)***	56.6 (10.7)***	10.1	0.00
Persistence	71.4 (9.0)	61.9 (11.6)*	64.8 (14.8)	5.9	0.00
Self-directedness	78.1 (13.4)	60.3 (13.2)***	61.5 (11.6)***	19.3	0.00
Cooperativeness	75.3 (11.3)	51.9 (11.4)***	56.3 (15.0)***	30.7	0.00
Self-transc/ence	40.7 (10.6)	43.9 (7.4)	47.1 (6.7)*	4.4	0.01
<b>MOPS</b>					
Father indiff/nce	8.3 (3.4)	10.8 (7.6)	9.7 (4.4)	1.4	0.23
Father over-contr	7.8 (1.8)	8.9 (4.4)	7.6 (2.3)	1.9	0.14
Father abuse	7.0 (2.3)	10.9 (6.3)*	9.7 (4.0)	5.1	0.00
Mother indiff/ence	7.3 (2.4)	7.8 (3.6)	8.3 (4.0)	0.5	0.55
Mother over-contr	8.6 (2.2)	8.1 (1.9)	7.9 (1.6)	1.0	0.34
Mother abuse	6.1 (1.4)	7.6 (2.6)	7.8 (2.9)*	3.8	0.02

\*  $p < 0.05$ , \*\*  $p < 0.005$ , \*\*\*  $p < 0.001$ , compared to controls.

Novelty Seeking (NS), Harm Avoidance (HA), Reward Dependence (RD), and Persistence (PE), and the character dimensions Self-Directedness (SD), Cooperativeness (CO), and Self-Transcendence (ST).

The self-reporting Measurement of the Parental Style (MOPS) (Parker *et al.*, 1997) consists of 15 items concerning the father and 15 items concerning the mother. It estimates the perception of parenting received in childhood, in their first 12 years of life. It creates three subscales for each of the parents: (a) 'Indifference', for example, my father/mother behaved towards me in an uncaring, rejecting etc way, (b) 'Overcontrol', for example, my father/mother was overcontrolling, sought to make me feel guilty, etc., and (c) 'Abuse', for example, my father/mother was verbally abusive, physically violent or abusive, unpredictable, etc, towards me. The rating option was 'not true at all', 'slightly true', 'moderately true', and 'extremely true', generating scores of 1, 2, 3, and 4, respectively.

Statistical analysis were performed using STATISTICA 2001 6,0. Means and standard deviations were calculated for the variables under investigation. The differences between variables in the three groups were tested by ANOVA. Pearson's correlation test was used to investigate the relationship between the personality dimensions and the style of the parental rearing. To further investigate the relationship between personality dimensions and parental rearing, Pearson correlation analysis, with Bonferoni correction, was used. Multiple regression analysis, with SD, CO, and ST as dependent variables and MOPS' subscales as independent

TABLE II. Pearson correlation (*r*) between TCI and MOPS dimensions in rapists, child molesters, and controls

		Father indifference	Father over-control	Father abuse	Mother indifference	Mother over-control	Mother abuse
HA	Controls	0.06	0.17	0.16	0.28	0.19	0.05
	Rapists	0.14	0.21	0.07	0.08	0.04	0.06
	Child Mol.	0.29	0.2	0.09	0.2	0.18	0.26
NS	Controls	- 0.15	- 0.19	- 0.04	- 0.19	0.07	- 0.18
	Rapists	0.03	- 0.07	0.11	0.12	0	0.20
	Child Mol.	0.06	0.12	0.3	0.35	- 0.02	0.48
RD	Controls	0.17	0.01	0.2	0.4	- 0.09	0.46
	Rapists	- 0.23	- 0.17	- 0.31	0.4	0.16	- 0.02
	Child Mol.	- 0.19	- 0.52*	- 0.35	- 0.05	- 0.19	- 0.08
PE	Controls	0.46	- 0.10	0.42	- 0.14	- 0.03	0.03
	Rapists	- 0.09	- 0.50	- 0.15	- 0.32	0.13	- 0.30
	Child Mol.	- 0.16	- 0.26	- 0.3	- 0.39	- 0.1	- 0.60*
SD	Controls	0.34	- 0.39	0.06	0.22	- 0.35	0.36
	Rapists	- 0.28	- 0.22	- 0.31	- 0.21	- 0.17	- 0.32
	Child Mol.	- 0.22	- 0.32	- 0.24	- 0.37	- 0.15	- 0.48
CO	Controls	0.21	0.15	0.22	0.27	- 0.19	0.45
	Rapists	- 0.37	- 0.24	- 0.44*	- 0.17	0.08	- 0.28
	Child Mol.	- 0.14	- 0.34	- 0.30	- 0.41	0.06	- 0.43
ST	Controls	0.12	- 0.08	0.03	- 0.20	0.21	- 0.26
	Rapists	0.06	0.10	0.04	0.12	0.43	0.15
	Child Mol.	0.14	0.09	- 0.07	0.01	0.15	- 0.04

\* *p* < 0.05, after Bonferoni correction.

variables, was used to further investigate the relationship between the character dimensions and the parental rearing styles.

## Results

Table I shows the means and SDs in all the TCI dimensions and the MOPS subscales in the sex offender the control group. The temperament dimension NS was significantly higher in both sex offender groups, while the character dimension ST was significantly higher in child molesters, in comparison to the controls. The temperament dimension PE was significantly lower only in rapists, while the character dimensions SD and CO were significantly lower in both sex offender groups, in comparison with the controls. The temperament dimension HA had no difference,

TABLE III. Multiple regression analysis with the character traits as dependent variables and the parental rearing factors as independent variables

Character			Father indiff. Beta	Father overc. Beta	Father abuse Beta	Mother indiff. Beta	Mother overc. Beta	Mother abuse Beta
Controls	SD	R = 0.49 F(6,18) = 0,9 <i>p</i> = 0.45	0.19	0.08	- 0.09	- 0.17	- 0.37	0.44
	CO	R = 0.61 F(6,18) = 1,8 <i>p</i> = 0.14	0.48	0.3	- 0.14	- 0.31	- 0.32	0.62*
	ST	R = 0.35 F(6,18) = 0,4 <i>p</i> = 0.85	0.11	- 0.15	0.01	- 0.23	0.24	0.01
Rapists	SD	R = 0.44 F(6,49) = 1,9 <i>p</i> = 0.09	0.16	0.05	- 0.44	0.16	- 0.02	- 0.41
	CO	R = 0.60 F(6,49) = 4,5 <i>p</i> = 0.001	0.40	0.21	- 1.00*	0.14	0.24	- 0.39
	ST	R = 0.44 F(6,49) = 1,9 <i>p</i> = 0.08	- 0.06	0.04	- 0.06	0.00	0.45**	0.02
Child molesters	SD	R = 0.56 F(6,28) = 2,1 <i>p</i> = 0.08	- 0.06	- 0.30	0.09	0.16	0.03	- 0.59
	CO	R = 0.62 F(6,28) = 2,3 <i>p</i> = 0.02	0.42	- 0.29	- 0.35	- 0.25	0.16	- 0.28
	ST	R = 0.39 F(6,28) = 0,8 <i>p</i> = 0.5	0.49	0.16	- 0.52	0.01	0.17	- 0.13

\* *p* < 0.05, \*\* *p* < 0.005.

compared to the controls. There was no significant difference of the TCI dimensions between the rapists and child molesters. The investigation of MOPS showed that the levels of reported father abuse in rapists, as well as the levels of reported mother abuse in child molesters were significantly higher, in comparison to the controls. There was no significant difference in the MOPS' subscales among the sex offender groups.

Pearson correlation analysis, after Bonferoni correction, showed that, in rapists, the character dimension CO showed a negative correlation with the reported father abuse, while in child molesters, the temperament dimensions RD and PE were negatively correlated with the reported father overcontrol and mother abuse, respectively (Table II).

Multiple regression analysis, using the character traits as dependent variables and the parental rearing parameters as independent variables, showed that in the controls the CO levels had a positive association with the reported mother abuse, while in the group of rapists the CO levels had a negative association with the reported father abuse, and ST levels had a positive association with the reported mother overcontrol (Table III).

## **Discussion**

The present findings concerning the personality profiles of both sex offender groups are in accordance with previous findings in personality disordered subjects, which showed personality profiles with high levels of NS, HA and ST and low levels of SD and PE (Wills *et al.*, 1994, Masse & Trambly, 1997, Ruchkin *et al.*, 1998). It should be noted that rapists and child molesters did not show any significant difference among them in all of the temperament and character dimensions, while a differentiation emerged only when comparing them with the controls. In addition, the normal levels of HA in both sex offender groups was inconsistent with the reported high (Ruchkin *et al.*, 1998) or low (Cloninger, 1987) HA levels in antisocial subjects, meaning that the present sample may show an average level of energy and passive avoidance. The highly increased levels of NS in both sex offender groups, in comparison to the controls, indicate their highly excitable and quick tempered trait and their behaviour is characterized by intolerance of familiar routine and difficulty in delaying gratification. The lower levels of RD in both sex offender groups than in controls, indicate their tendency to remain aloof and distant without revealing personal intimacies and quitting before maximal effort has been expended. The lower PE levels in rapists than the controls, further support their tendency to remain distant and isolated. The lower levels of SD in both sex offender groups than in controls, indicate a fragile and purposeless character and a behaviour dominated by external stimuli rather than by personal goals and values. The lower levels of CO in both sex offender groups than in controls, indicate their difficulty in identification and acceptance of other people which could easily lead to aggressive hostility. It must be noted that low levels of both SD and CO is a common characteristic of almost all personality disorders (Cloninger, 1987). Finally, the higher levels of ST in child molesters, compared to controls, indicate that they can be described as being naive and patient, as well as having magical thinking. Such individuals can enjoy their

activities without feeling the need to control them, but in parallel, their high levels of ST indicate some adaptive advantages when they are confronted with suffering (Cloninger *et al.*, 1994).

We can suggest that rapists and child molesters have a similar temperament profile characterized generally by frequent exploratory activity, impulsiveness, active avoidance of frustration, quick loss of temper, and lack of personal intimacies, while rapists seem to be in addition more distant, more easily frustrated and more easily quitting before maximal effort has been expended. Furthermore, we could suggest that rapists and child molesters have a similar character profile which is characterized by purposelessness, by behaviours not directed by personal goals or values, and by a difficulty to accept the others and consequently a lack of empathy; child molesters are characterized in addition with a tendency to enjoy their activities without feeling the urge to control them, but in parallel they have the ability to cope better with their difficulties.

Regarding the parenting received in childhood, rapists described their fathers as more abusive, while child molesters described their mothers as more abusive, in comparison to the controls. This finding is in accordance with previous studies, which showed increased levels of parental abusiveness, with more or less parental overcontrol, in subjects with depression (Mackinnon *et al.*, 1993, Goldney, 1985), delinquency (Howard, 1981, Torresani *et al.*, 2000), drug abuse (Clausen, 1996) post-traumatic disorder (Engel *et al.*, 1993, Bremner *et al.*, 1993), and adjustment disorder (Giotakos & Konstantakopoulos, 2002). In addition, increased incidence of physical or sexual abuse during childhood have been reported in groups of sex offenders (Zonana *et al.*, 1999), while the affectionless control style of parental bonding have been found to be highly prevalent in a group of rapists and child molesters (Craissati *et al.*, 2002).

The reported mother abusiveness from child molesters showed to have a significantly negative correlation with PE, the reported father abuse from rapists showed to have a significantly negative correlation with CO, while the reported father overcontrol from rapists was found to be negatively correlated with RD. These findings support the evidence that the abusive/affectionless control style of parental rearing may contribute to the development of personalities with low RD, PE, and CO, in this sex offender sample. Furthermore, multiple regression analysis showed that among the rapists, CO levels were negatively associated with the reported father abusiveness, while among the controls CO levels were positively associated with the reported mother abusiveness. We can suggest that rapists are being differentiated from the controls, considering the association between abusive parental behaviour and the development of personality with low CO, and different psychobiological factors, in terms of learning process, may influence this association.

Our findings must be carefully interpreted because a wide variety of variables, like sociocultural, genetic or biochemical, may contribute to the relationship between parental rearing and personality development. More research has to be conducted in all of these areas in order to interpret sexually aggressive behaviour and thus to provide more specific alternatives for clinical assessment and treatment. However, the

strong relationships we have observed between parental rearing and personality suggest that this is a fruitful area of investigation.

## References

- BOWLBY, J. (1980). *Attachment and loss*, Vol 3, 2nd edn. New York: Basic Books.
- BREMNER, J.D., SOUTHWICK, S.M., JOHNSON, D.J., YEHUDA, R. & CHARNEY, D.S. (1993). Childhood physical abuse and combat-related posttraumatic stress disorder. *American Journal of Psychiatry*, 150, 235–239.
- CLAUSEN, S.E. (1996). Parenting styles and adolescent drug use behaviors. *Childhood*, 3, 403–414.
- CLONINGER, C.R. (1987). A systematic method for clinical description and classification of personality variants. *Archives of General Psychiatry*, 44, 573–588.
- CLONINGER, C.R., SVRAKIC, D.M. & PRZYBECK, T.R. (1993). A psychobiological model of temperament and character. *Archives of General Psychiatry*, 50, 975–990.
- CLONINGER, C.R., PRZYBECK, T.R., SVARKIC, D.M. & WETZEL, R.D. (1994). *The Temperament and Character Inventory (TCI): A guide to its development and use*. St Louis, MO: Washington University, Center for psychobiology of Personality.
- CRAISSATI, J., MCCLURG, G. & BROWNE, K. (2002). The parental bonding experiences of sex offenders: a comparison between child molesters and rapists. *Child Abuse and Neglect*, 26(9), 909–921.
- CRAWFORD, S.L. & FIEDLER, E.R. (1993). Childhood physical and sexual abuse and failure to complete military basic training. *Military Medicine*, 157, 645–648.
- ENGEL, C.C., ENGEL, A.L., CAMPBELL, S.J., McFALL, M., RUSSO, J. & KATON, W. (1993). Posttraumatic stress disorder symptoms and precombat sexual and physical abuse in Desert Storm veterans. *Journal of Nervous and Mental Disease*, 181, 683–688.
- FARRINGTON, D.P. (1993). The psychosocial milieu of the offender. In J. GUNN & P.J. TAYLOR, (Eds), *Forensic psychiatry: clinical, legal and ethical issues* (pp. 252–285). Oxford, UK: Butterworth-Heinemann.
- GIOTAKOS, O. & KONSTANTAKOPOULOS, G. (2002). Parenting received in childhood and early separation anxiety in male conscripts with adjustment disorder. *Military Medicine*, 167, 28–33.
- GOLDNEY, R. (1985). Parental representation in young women who attempt suicide. *Acta Psychiatrica Scandinavica*, 72, 230–232.
- HOWARD, J. (1981). The expression and possible origins of depression in male adolescent delinquents. *Australian and New Zealand Journal of Psychiatry*, 15, 311–318.
- MACKINNON, A., HENDERSON, A.S. & ANDREWS, G. (1993). Parental affectionless control as an antecedent to adult depression: a risk factor refined. *Psychological Medicine*, 23, 134–141.
- MARK, A.S. (1994). Parental neglect and overprotection as risk factors in delinquency. *Australian Journal of Psychology*, 46, 107–111.
- MASSE, L.C. & TREMBLAY, R.E. (1997). Behaviour of boys in kindergarten and the onset of substance use during adolescence. *Archives of General Psychiatry*, 54, 62–68.
- PARKER, G., TUPLING, M. & BROWN, C. (1979). A parental bonding instrument. *British Journal of Medical Psychology*, 52, 1–10.
- PARKER, G. & GLADSTONE, B. (1996). Parental characteristics as influences on adjustment in adulthood. In G.R. PIERCE, B.R. SARASON & I.G. SARASON, (Eds), *Handbook of social support and the family* (pp. 195–218). New York: Plenum Press.
- PARKER, G., ROUSSOS, J., HADZI-PAVLOVIC, D., MITCHELL, P., WILHELM, K. & AUSTIN, M.-P. (1997). The development of a refined measure of dysfunctional parenting and assessment of its relevance in patients with affective disorders. *Psychological Medicine*, 27, 1193–1203.
- PARKER, G., ROY, K., WILHELM, K., MITCHELL, P., AUSTIN, M.P. & HADZI-PAVLOVIC, D. (1999). An exploration of links between early parenting experiences and personality disorder type and disordered personality functioning. *Journal of Personality Disorders*, 13, 361–374.
- PERRIS, C. (1994). Linking the experience of dysfunctional parental rearing with manifest psychopathology: A theoretical framework. In C. PERRIS, W.A. ARRINDELL & M. EISEMANN, (Eds), *Parenting and psychopathology* (pp. 3–32). Chichester, UK: Wiley.
- RAYMOND, N.C., COLEMAN, E., OHLERKING, M.A., CHRISTENSON, G.A. & MINER, M. (1999). Psychiatric comorbidity in pedophilic sex offenders. *American Journal of Psychiatry*, 156, 786–788.

- ROSEN, L.N. & MARTIN, L. (1996). Childhood antecedents of psychological adaptation to military life. *Military Medicine*, 161, 665–668.
- RUCHKIN, V.V., EISEMANN, M., HAGGLOF, B. & CLONINGER, C.R. (1998). Interrelations between temperament, character and parental rearing in male delinquent adolescents in Northern Russia. *Comprehensive Psychiatry*, 39, 225–230.
- TORRESANI, S., FAVARETTO, E. & ZIMMERMANN, C. (2000). Parental representations in drug dependent patients and their parents. *Comprehensive Psychiatry*, 41, 123–129.
- TRASLER, G.B. (1962). *The explanation of criminality*. London, England: Routledge & Kegan Paul.
- VALLIANT, P.M. & BERGERON, T. (1997). Personality and criminal profile of adolescent sexual offenders and general offenders, in comparison to nonoffenders. *Psychological Reports* 81, 483–489.
- WILLS, T.A., VACCARO, D. & McNAMARA, G. (1994). Novelty seeking, risk taking and related constructs as predictors of adolescent substance use: An application of Cloninger theory. *Journal of Substance Abuse*, 6, 1–20.
- ZONANA, H., ABEL, G., BRADFORD, J., HOGE, S. & METZNER, J. (1999). Dangerous Sex Offenders: A task force of the American Psychiatric Association, Washington DC, APA, 1–10 & 129–154.

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