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*Empirical Support for the HCR-20:
A Critical Analysis of the Violence Literature*

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Purpose of Project and Layout of Report

The purpose of this project was to conduct a comprehensive search of the empirical literature published in peer-reviewed journals between 1997 and 2005 to identify studies that presented support for variables included on the HCR-20. This report includes a separate section for each of the measure's 20 items, with one exception. Empirical support for Items C5 (Unresponsive to Treatment) and R4 (Noncompliance with Remediation Attempts) are presented together under a single heading because studies that were relevant to one item also tended to apply to the other item. Moreover, these studies could not be differentiated on the basis of having a present (clinical) or future (risk management) focus.

Under each section, the most significant and methodologically sound studies identified in the search are summarized; abstracts of additional studies of relevance to the item are reproduced (with separate headings for studies that presented data on violent or non-violent outcomes). Each section also lists narrative/qualitative literature reviews relevant to the item, as well as studies that offer "contradictory" empirical evidence. A table is presented at the beginning of the report that indicates whether, for each reference, a summary is provided, the abstract only is reprinted, or if it is a narrative review. Bookmark links are provided for each section of this report.

Identification and Selection of Studies

Identifying relevant empirical studies to review for inclusion in this report involved four steps. First, the PsycINFO database was searched using broad search terms to capture any article related to the assessment of risk for future violence. Examples of some terms used are: aggress*, recidivis*, reoffend*, arrest*, danger*, violen*, antisocial*. This procedure identified approximately 1500 studies published during each of the nine years surveyed. Roughly half of these studies were screened out following review of the online abstracts; the fulltext of the remaining studies subsequently were reviewed for relevance.

The second search strategy involved more focused searches using terms tailored to each of the 20 items. Third, the reference list in Monahan and colleagues' (2001) *Rethinking Risk Assessment: The MacArthur Study of Mental Disorder and Violence* was examined to locate relevant studies that were not identified using the first two steps. Finally, reference lists of articles identified through any of the prior three steps were reviewed for relevant articles.

In total, approximately 2500 articles were identified that presented empirical support relevant to one or more of the HCR-20 items. Over a number of "sorting sessions" the number of articles assigned to each HCR-20 item was narrowed in accordance with several guiding principles. One parameter that guided this winnowing process was to retain studies with evidence of strong methodological rigor (e.g., prospective design; clearly operationalized criterion variables; relatively larger sample sizes preferred to smaller ones, etc.). Given that the HCR-20 was developed for the purpose of assessing risk for *violence*, studies in which the outcome variable was described as being physical aggression or violence were considered more relevant for the present report compared to studies that examined general criminal recidivism, nonspecified types

of aggression, and so on. Nevertheless, some research studies were judged to be sufficiently important on the basis of its findings or superior methodological quality to warrant inclusion in this report. The specific criterion under investigation study was noted clearly in articles' summaries.

Because the HCR-20 was developed for use with adults, the samples of most studies included in the present report comprise adults. However, at least a few studies that presented data on older youths are presented here, most typically because the mean age of the sample was almost 18 years and the article otherwise was an appropriate one for our purposes. Summaries in this report note clearly instances in which participants were not adults.

Many high-quality studies were located that presented empirical support for more than one HCR-20 item. As such, summaries of some articles appear under two HCR-20 item headings in this report (such occurrences are noted clearly). Whereas there was a substantial amount of research available for review for many of the risk variables on the HCR-20, there was comparatively less published research relevant to other items (e.g., item H10, Prior Supervision Failure). Finally, it should be noted that, given the audience of this report, it seemed superfluous to summarize research (no matter how relevant) completed by authors of the HCR-20.

Not surprisingly, in the course of reviewing the literature for the purpose of identifying research that provided empirical support for each HCR-20 item, many studies were identified whose results were not supportive of variables included on the HCR-20. References to these studies (if their design was methodologically sound) are included in this report under the heading "contradictory findings" for each item. It should be noted that a systematic effort was *not* made to locate and include all such studies.

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Reference:

Monahan, J., Steadman, H. J., Silver, E., Appelbaum, P.S., Clark Robbins, P., Mulvey, E. P., Roth, L. H., Grisso, T., & Banks, S. (2001). *Rethinking risk assessment: The Macarthur study of mental disorder and violence*. New York: Oxford University Press.

REFERENCE	SUMMARY	CITATION	NARRATIVE REVIEW
1. af Klinteberg, B. (1997). Hyperactive behavior and aggressiveness as early risk indicators for violence: Variable and person approaches. <i>Studies on Crime & Crime Prevention</i> , 6(1), 21-34.		H8	
2. Angermeyer, M. C. (2000). Schizophrenia and violence. <i>Acta Psychiatrica Scandinavica</i> , 102, 63-67.			H6
3. Appelbaum, P. S., Robbins, P. C., & Monahan, J. (2000). Violence and delusions: Data from the MacArthur violence risk assessment study. <i>American Journal of Psychiatry</i> , 157(4), 566-572.		C3	
4. Arango, C., Calcedo Barba, A., González-Salvador, T., & Calcedo Ordóñez, A. (1999). Violence in inpatients with schizophrenia: A prospective study. <i>Schizophrenia Bulletin</i> , 25(3), 493-503.	C1	C3	
5. Arboleda-Flórez, J., Holley, H., & Crisanti, A. (1998). Mental illness and violence. <i>International Medical Journal</i> , 5(1), 3-8.			H6
6. Arseneault, L., Cannon, M., Murray, R., Poulton, R., Caspi, A., & Moffitt, T. E. (2003). Childhood origins of violent behavior in adults with schizophreniform disorder. <i>British Journal of Psychiatry</i> , 183(6), 520-525.		H6;H8	
7. Arseneault, L., Moffitt, T. E., Caspi, A., Taylor, P. J., & Silva, P. A. (2000). Mental disorders and violence in a total birth cohort: Results from the Dunedin study. <i>Archives of General Psychiatry</i> , 57(10), 979-986.	H5;H6		
8. Ayuba, L. N., Audu, M. D., Choji, A. R., & Mela, M. (2004). A developing world perspective on homicide and mental disorder: An eighteen-year retrospective study (1980-1998) at Jos, Nigeria. <i>International Journal of Forensic Mental Health</i> , 3(2), 211-216.		H6	
9. Babinski, L. M., Hartsough, C. S., & Lambert, N. M. (1999). Childhood conduct problems, hyperactivity-impulsivity, and inattention as predictors of adult criminal activity. <i>Journal of Child Psychology & Psychiatry</i> , 40(3), 347-355.	H8		
10. Barbaree, H. E. (2005). Psychopathy, treatment behavior, and recidivism: An extended follow-up of Seto and Barbaree. <i>Journal of Interpersonal Violence</i> , 20(9), 1115-1131.	H7		

11.	Beck, J. C. (2004). Delusions, substance abuse, and serious violence. <i>Journal of the American Academy of Psychiatry & the Law</i> , 32(2), 169-172.		H6	
12.	Benda, B. B. (2003). Survival analysis of criminal recidivism of boot camp graduates using elements from general and developmental explanatory models. <i>International Journal of Offender Therapy & Comparative Criminology</i> , 47(1), 89-110.	R2	H8	
13.	Bjorkly, S. (2002). Psychotic symptoms and violence toward others - A literature review of some preliminary findings: Part 2. hallucinations. <i>Aggression and Violent Behavior</i> , 7(6), 605-615.			C3
14.	Bjorkly, S. (2002). Psychotic symptoms and violence towards others - A literature review of some preliminary findings: Part 1. delusions. <i>Aggression and Violent Behavior</i> , 7(6), 617-631.			C3
15.	Bjorkly, S. (1997). Clinical assessment of dangerousness in psychotic patients: Some risk indicators and pitfalls. <i>Aggression and Violent Behavior</i> , 2(2), 167-178.			H6
16.	Bjorkly, S., & Havik, O. E. (2003). TCO symptoms as markers of violence in a sample of severely violent psychiatric inpatients. <i>International Journal of Forensic Mental Health</i> , 2(1), 87-97.		C3	
17.	Blackburn, R., & Coid, J. W. (1999). Empirical clusters of DSM-III personality disorders in violent offenders. <i>Journal of Personality Disorders</i> , 13(1), 18-34.		H9	
18.	Blackburn, R., & Coid, J. W. (1998). Psychopathy and the dimensions of personality disorders in violent offenders. <i>Personality and Individual Differences</i> , 25(1), 129-145.		H7	
19.	Bland, R. C., Newman, S. C., Thompson, A. H., & Dyck, R. J. (1998). Psychiatric disorders in the population and in prisoners. <i>International Journal of Law and Psychiatry</i> , 21(3), 273-279.		H6	
20.	Boles, S. M., & Johnson, P. B. (2001). Violence among comorbid and noncomorbid severely mentally ill adults: A pilot study. <i>Substance Abuse</i> , 22(3), 167-173.		H5	
21.	Bonta, J., Law, M., & Hanson, K. (1998). The prediction of criminal and violent recidivism among mentally disordered offenders: A meta-analysis. <i>Psychological Bulletin</i> , 123(2), 123-142.		H4;H9;C3	

22.	Bovasso, G. B., Alterman, A. I., Cacciola, J. S., & Rutherford, M. J. (2002). The prediction of violent and nonviolent criminal behavior in a methadone maintenance population. <i>Journal of Personality Disorders, 16</i> (4), 360-373.	H9		
23.	Brekke, J. S., Prindle, C., Bae, S. W., & Long, J. D. (2001). Risks for individuals with schizophrenia who are living in the community. <i>Psychiatric Services, 52</i> (10), 1358-1366.		H1	
24.	Brennan, P. A., Grekin, E. R., & Mednick, S. A. (1999). Maternal smoking during pregnancy and adult male criminal outcomes. <i>Archives of General Psychiatry, 56</i> (3), 215-219.		H8	
25.	Brennan, P. A., Mednick, S. A., & Hodgins, S. (2000). Major mental disorders and criminal violence in a Danish birth cohort. <i>Archives of General Psychiatry, 57</i> (5), 494-500.	H5;H6		
26.	Britt, C. L. (1997). Reconsidering the unemployment and crime relationship: Variation by age group and historical period. <i>Journal of Quantitative Criminology, 3</i> (4), 405-428		H4	
27.	Brown, V. L., Montoya, I. D., Dayton-Shotts, C. A., Carroll-Curtis, T. L., Riley, M. A. (2004). Trends of Criminal Activity and Substance Use in a Sample of Welfare Recipients. <i>Crime and Delinquency, 50</i> (1), 6-23.		H4	
28.	Buchanan, A., Taylor, P., & Gunn, J. (2004). Criminal conviction after discharge from special (high security) hospital: The circumstances of early conviction on a serious charge. <i>Psychology, Crime & Law, 10</i> (1), 5-19.		H1	
29.	Buckley, P. F., Hrouda, D. R., Friedman, L., Noffsinger, S. G., Resnick, P. J., & Camlin-Shingler, K. (2004). Insight and its relationship to violent behavior in patients with schizophrenia. <i>American Journal of Psychiatry, 161</i> (9), 1712-1714.	C1	C3	
30.	Burdon, W. M., Messina, N. P., & Prendergast, M. L. (2004). The California treatment expansion initiative: Aftercare participation, recidivism, and predictors of outcomes. <i>Prison Journal, 84</i> (1), 61-80.		C5/R4	
31.	Campbell, C. S., & Robinson, J. W. (1997). Family and employment status associated with women's criminal behavior. <i>Psychological Reports, 80</i> (1), 307-314.	H4		
32.	Carroll, A., Pantelis, C., & Harvey, C. (2004). Insight and hopelessness in forensic patients with schizophrenia. <i>Australian and New Zealand Journal of Psychiatry, 38</i> (3), 169-173.		C1	

33.	Cheung, P., Schweitzer, I., Crowley, K., & Tuckwell, V. (1997). Violence in schizophrenia: Role of hallucinations and delusions. <i>Schizophrenia Research, 26</i> (2), 181-190.		C3	
34.	Christoffersen, M. N., Francis, B., & Soothill, K. (2003). An upbringing to violence? identifying the likelihood of violent crime among the 1966 birth cohort in Denmark. <i>Journal of Forensic Psychiatry & Psychology, 14</i> (2), 367-381.		H4;H8	
35.	Citrome, L., & Volavka, J. (1999). Violent patients in the emergency setting. <i>Psychiatric Clinics of North America, 22</i> (4), 789-801.			H6
36.	Cloitre, M., Tardiff, K., Marzuk, P. M., Leon, A. C., & Portera, L. (2001). Consequences of childhood abuse among male psychiatric inpatients: Dual roles as victims and perpetrators. <i>Journal of Traumatic Stress, 14</i> (1), 47-61.		H8	
37.	Coid, J. W. (2002). Personality disorders in prisoners and their motivation for dangerous and disruptive behavior. <i>Criminal Behavior & Mental Health, 12</i> (3), 209-226.		H9	
38.	Colvin, M., Cullen, F., & Vander Ven, T. (2002). Coercion, social support and crime: An emerging theoretical consensus. <i>Criminology, 40</i> , 19-42.			R3
39.	Cooke, D. J., & Michie, C. (1998). Predicting recidivism in a Scottish prison sample. <i>Psychology, Crime & Law, 4</i> (3), 169-211.		H2;H5	
40.	Cornell, D. G., Peterson, C. S., & Richards, H. (1999). Anger as a predictor of aggression among incarcerated adolescents. <i>Journal of Consulting & Clinical Psychology, 67</i> (1), 108-115.	C4		
41.	Craig, L. A., Browne, K. D., Beech, A., & Stringer, I. (2004). Personality characteristics associated with reconviction in sexual and violent offenders. <i>Journal of Forensic Psychiatry & Psychology, 15</i> (3), 532-551.	C4		
42.	Crichton, J. (1999). Mental disorder and crime: Coincidence, correlation and cause. <i>Journal of Forensic Psychiatry, 10</i> (3), 659-677.			H6
43.	Crocker, A. G., & Hodgins, S. (1997). The criminality of noninstitutionalized mentally retarded persons: Evidence from a birth cohort followed to age 30. <i>Criminal Justice & Behavior, 24</i> (4), 432-454.		H8	

44.	Dailey, W. F., Chinman, M. J., Davidson, L., Garner, L., Vavrousek-Jakuba, E., & Essock, S. et al. (2000). How are we doing? A statewide survey of community adjustment among people with serious mental illness receiving intensive outpatient services. <i>Community Mental Health Journal</i> , 36(4), 363-382.		H6	
45.	Dalteg, A., & Levander, S. (1998). Twelve thousand crimes by 75 boys: A 20-year follow-up study of childhood hyperactivity. <i>Journal of Forensic Psychiatry</i> , 9(1), 39-57.		H8	
46.	Davison, S., Jamieson, E., & Taylor, P. J. (1999). Route of discharge for special (high-security) hospital patients with personality disorder: Relationship with re-conviction. <i>British Journal of Psychiatry</i> , 175, 224-227.	R1		
47.	DeLisi, M. (2001). Extreme career criminals. <i>American Journal of Criminal Justice</i> , 25(2), 239-252.	H1		
48.	Douglas, K. S., Ogloff, J. R. P., Nicholls, T. L., & Grant, I. (1999). Assessing risk for violence among psychiatric patients: The HCR-20 violence risk assessment scheme and the psychopathy checklist: Screening version. <i>Journal of Consulting and Clinical Psychology</i> , 67(6), 917-930.		H7	
49.	Douglas, K. S., Strand, S., Belfrage, H., Fransson, G., & Levander, S. (2005). Reliability and validity evaluation of the psychopathy checklist: Screening version (PCL: SV) in Swedish correctional and forensic psychiatric samples. <i>Assessment</i> , 12(2), 145-161.		H7	
50.	Douglas, K. S., Yeomans, M., & Boer, D. P. (2005). Comparative validity analysis of multiple measures of violence risk in a sample of criminal offenders. <i>Criminal Justice and Behavior</i> , 32(5), 479-510.		H7	
51.	Dowden, C., & Andrews, D. A. (2000). Effective correctional treatment and violent reoffending: A meta-analysis. <i>Canadian Journal of Criminology</i> , 42(4), 449-467.		C2;R1	
52.	Dowden, C., Antonowicz, D., & Andrews, D. A. (2003). The effectiveness of relapse prevention with offenders: A meta-analysis. <i>International Journal of Offender Therapy & Comparative Criminology</i> , 47(5), 516-528.	R1		
53.	D'Silva, K., Duggan, C., & McCarthy, L. (2004). Does treatment really make psychopaths worse? A review of the evidence. <i>Journal of Personality Disorders</i> , 18(2), 163-177.			H7

54.	Duncan, J. C., & Rogers, R. (1998). Medication compliance in patients with chronic schizophrenia: Implications for the community management of mentally disordered offenders. <i>Journal of Forensic Sciences, 43</i> (6), 1133-1137.		C5/R4	
55.	Eckhardt, C. I., Barbour, K. A., & Davison, G. C. (1998). Articulated thoughts of maritally violent and nonviolent men during anger arousal. <i>Journal of Consulting and Clinical Psychology, 66</i> (2), 259-269.		C1	
56.	Ehmann, T. S., Smith, G. N., Yamamoto, A., McCarthy, N., Ross, D., & Au, T. et al. (2001). Violence in treatment resistant psychotic inpatients. <i>Journal of Nervous & Mental Disease, 189</i> (10), 716-721.		C5/R4	
57.	Eitle, D., & Turner, R. J. (2002). Exposure to community violence and young adult crime: The effects of witnessing violence, traumatic victimization, and other stressful life events. <i>Journal of Research in Crime & Delinquency, 39</i> (2), 214-237.	H8;R5		
58.	Eronen, M., Angermeyer, M. C., & Schulze, B. (1998). The psychiatric epidemiology of violent behavior. <i>Social Psychiatry & Psychiatric Epidemiology, 33</i> (1), S13-S23.			H6
59.	Estroff, S. E., Swanson, J. W., Lachicotte, W. S., Swartz, M., & Bolduc, M. (1998). Risk reconsidered: Targets of violence in the social networks of people with serious psychiatric disorders. <i>Social Psychiatry and Psychiatric Epidemiology, 33</i> (1), S95-s101.	R3		
60.	Farrington, D. P. (2000). Psychosocial predictors of adult antisocial personality and adult convictions. <i>Behavioral Sciences & the Law, 18</i> (5), 605-622.		H8	
61.	Fazel, S., & Danesh, J. (2002). Serious mental disorder in 23 000 prisoners: A systematic review of 62 surveys. <i>Lancet, 359</i> (9306), 545.		H6	
62.	Fazel, S., & Grann, M. (2004). Psychiatric morbidity among homicide offenders: A Swedish population study. <i>American Journal of Psychiatry, 161</i> (11), 2129-2131.		H6;H9	
63.	Feerick, M. M., Haugaard, J. J., & Hien, D. A. (2002). Child maltreatment and adulthood violence: The contribution of attachment and drug abuse. <i>Child Maltreatment: Journal of the American Professional Society on the Abuse of Children, 7</i> (3), 226-240.		H8	

64.	Fehon, D. C., Grilo, C. M., & Lipschitz, D. S. (2005). A comparison of adolescent inpatients with and without a history of violence perpetration: Impulsivity, PTSD, and violence risk. <i>Journal of Nervous and Mental Disease, 193</i> (6), 405-411.		H8; C4	
65.	Firestone, P., Nunes, K. L., Moulden, H., Broom, I., & Bradford, J. M. (2005). Hostility and recidivism in sexual offenders. <i>Archives of Sexual Behavior, 34</i> (3), 277-283.	C4		
66.	Flannery, R. B. J., Stevens, V., Juliano, J., & Walker, A. P. (2000). Past violent and substance use disorder and subsequent violence towards others: Six year analysis of the assaulted staff action program (ASAP). <i>International Journal of Emergency Mental Health, 2</i> (4), 241-247.	H1		
67.	Foley, S. R., Kelly, B. D., Clarke, M., McTigue, O., Gervin, M., & Kamali, M. et al. (2005). Incidence and clinical correlates of aggression and violence at presentation in patients with first episode psychosis. <i>Schizophrenia Research, 72</i> (2), 161-168.		C1	
68.	French, M. T., McGeary, K. A., Chitwood, D. D., McCoy, C. B., Inciardi, J. A., & McBride, D. (2000). Chronic drug use and crime. <i>Substance Abuse, 21</i> (2), 95-109.		H5	
69.	Fresán, A., Apiquian, R., de la Fuente-Sandoval, C., García-Anaya, M., Loyzaga, C., & Nicolini, H. (2004). Premorbid adjustment and violent behavior in schizophrenic patients. <i>Schizophrenia Research, 69</i> (2), 143-148.	H4; R3		
70.	Friedman, A. S. (1998). Substance use/abuse as a predictor to illegal and violent behavior: A review of the relevant literature. <i>Aggression & Violent Behavior, 3</i> (4), 339-355.			H5
71.	Fulwiler, C., Grossman, H., Forbes, C., & Ruthazer, R. (1997). Early-onset substance abuse and community violence by outpatients with chronic mental illness. <i>Psychiatric Services, 48</i> (9), 1181-1185.		H5	
72.	Fulwiler, C., & Ruthazer, R. (1999). Premorbid risk factors for violence in adult mental illness. <i>Comprehensive Psychiatry, 40</i> (2), 96-100.	H2	H8	
73.	Ge, X., Donnellan, M.B, & Wenk, E. (2003). Differences in personality and patterns of recidivism between early starters and other serious male offenders. <i>American Academy of Psychiatry & the Law, 31</i> (1), 68-77.		H2; H8	

74.	Gendreau, P., Goggin, C. E., & Law, M. A. (1997). Predicting prison misconducts. <i>Criminal Justice and Behavior</i> , 24(4), 414-431.		C2	
75.	Glasser, M., Kolvin, I., Campbell, D., Glasser, A., Leitch, I., & Farrelly, S. (2001). Cycle of child sexual abuse: Links between being a victim and becoming a perpetrator. <i>British Journal of Psychiatry</i> , 179(6), 482-494.	H8		
76.	Gorman, D. M., Speer, P. W., Gruenewald, P. J., & Labouvie, E. W. (2001). Spatial dynamics of alcohol availability, neighborhood structure and violent crime. <i>Journal of Studies on Alcohol</i> , 62(5), 628-636.	R2		
77.	Grann, M., Långström, N., Tengström, A., & Kullgren, G. (1999). Psychopathy (PCL-R) predicts violent recidivism among criminal offenders with personality disorders in Sweden. <i>Law & Human Behavior</i> , 23(2), 205-217.	H7		
78.	Grassi, L., Peron, L., Marangoni, C., Zanchi, P., & Vanni, A. (2001). Characteristics of violent behavior in acute psychiatric in-patients: A 5-year Italian study. <i>Acta Psychiatrica Scandinavica</i> , 104(4), 273-279.		H3	
79.	Gray, N. S., Hill, C., McGleish, A., Timmons, D., MacCulloch, M. J., & Snowden, R. J. (2003). Prediction of violence and self-harm in mentally disordered offenders: A prospective study of the efficacy of HCR-20, PCL-R, and psychiatric symptomatology. <i>Journal of Consulting & Clinical Psychology</i> , 71(3), 443-451.		C3	
80.	Gray, N. S., Snowden, R. J., MacCulloch, S., Phillips, H., Taylor, J., & MacCulloch, M. J. (2004). Relative efficacy of criminological, clinical, and personality measures of future risk of offending in mentally disordered offenders: A comparative study of HCR-20, PCL: SV, and OGRS. <i>Journal of Consulting and Clinical Psychology</i> , 72(3), 523-530.		H7	
81.	Grisso, T., Davis, J., Vesselinov, R., Appelbaum, P. S., & Monahan, J. (2000). Violent thoughts and violent behavior following hospitalization for mental disorder. <i>Journal of Consulting & Clinical Psychology</i> , 68(3), 388-398.	C3		
82.	Gurley, J. D., & Satcher, J. F. (2003). Drug use or abstinence as a function of perceived stressors among federally supervised offenders. <i>Federal Probation</i> , 67(3), 49-53.	R5		

83.	Gutiérrez-Lobos, K., Eher, R., Grünhut, C., Bankier, B., Schmidl-Mohl, B., & Frühwald, S. et al. (2001). Violent sex offenders lack male social support. <i>International Journal of Offender Therapy and Comparative Criminology</i> , 45(1), 70-82.		R3	
84.	Guy, L. S., & Edens, J. F., Anthony, C., & Douglas, K. S. (in press). Does psychopathy predict institutional misconduct among adults? A meta-analytic investigation. <i>Journal of Consulting and Clinical Psychology</i> .	H7		
85.	Hamilton, C. E., Falshaw, L., & Browne, K. D. (2002). The link between recurrent maltreatment and offending behavior. <i>International Journal of Offender Therapy & Comparative Criminology</i> , 46(1), 75-94.		R3	
86.	Hanson, R. K., & Harris, A. J. R. (2000). Where should we intervene? Dynamic predictors of sexual offense recidivism. <i>Criminal Justice and Behavior</i> , 27, 6-35.		C2;R3	
87.	Hanson, R. K., & Bussière, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. <i>Journal of Consulting and Clinical Psychology</i> , 66(2), 348-362.		H1;H9;C4	
88.	Harrison, B., & Schehr, R. C. (2004). Offenders and post-release jobs: Variables influencing success and failure. <i>Journal of Offender Rehabilitation</i> , 39(3), 35-68.			H4
89.	Hartl, T. L., Rosen, C., Drescher, K., Lee, T. T., & Gusman, F. (2005). Predicting high-risk behaviors in veterans with posttraumatic stress disorder. <i>Journal of Nervous and Mental Disease</i> , 193(7), 464-472.		H6	
90.	Hartwell, S. W. (2004). Comparison of offenders with mental illness only and offenders with dual diagnoses. <i>Psychiatric Services</i> , 55(2), 145-150.		H5	
91.	Hemphill, J. F., Hare, R. D., & Wong, S. (1998). Psychopathy and recidivism: A review. <i>Legal & Criminological Psychology</i> , 3(1), 139-170.	H7		
92.	Hernandez-Avila, C. A., Burlinson, J. A., Poling, J., Tennen, H., Rounsaville, B. J., & Kranzler, H. R. (2000). Personality and substance use disorders as predictors of criminality. <i>Comprehensive Psychiatry</i> , 41(4), 276-283.	H9		

93.	Herrenkohl, T. I., Hill, K. G., Chung, I., Guo, J., Abbott, R. D., & Hawkins, J. D. (2003). Protective factors against serious violent behavior in adolescence: A prospective study of aggressive children. <i>Social Work Research, 27</i> (3), 179-191.	R2		
94.	Hiday, V. A. (1997). Understanding the connection between mental illness and violence. <i>International Journal of Law & Psychiatry, 20</i> (4), 399-417.			H6
95.	Hiller, M. L., Knight, K., & Simpson, D. D. (1999). Prison-based substance abuse treatment, residential aftercare and recidivism. <i>Addiction, 94</i> (6), 833-842.		R2	
96.	Hiscoke, U. L., Langström, N., Ottosson, H., & Grann, M. (2003). Self-reported personality traits and disorders (DSM-IV) and risk of criminal recidivism: A prospective study. <i>Journal of Personality Disorders, 17</i> (4), 293-305.	H9		
97.	Hodgins, S. (2001). The major mental disorders and crime: Stop debating and start treating and preventing. <i>International Journal of Law & Psychiatry, 24</i> (4), 427-446.			H6; C5/R4
98.	Hodgins, S., Hiscoke, U. L., & Freese, R. (2003). The antecedents of aggressive behavior among men with schizophrenia: A prospective investigation of patients in community treatment. <i>Behavioral Sciences & the Law, 21</i> (4), 523-546.	C3		
99.	Hodgins, S., Kratzer, L., & McNeil, T. F. (2001). Obstetric complications, parenting, and risk of criminal behavior. <i>Archives of General Psychiatry, 58</i> (8), 746-752.		H8	
100.	Hodgins, S., Lapalme, M., & Toupin, J. (1999). Criminal activities and substance use of patients with major affective disorders and schizophrenia: A 2-year follow-up. <i>Journal of Affective Disorders, 55</i> (2), 187-202.		H5; H6; H9; C5/R4	
101.	Hollin, C. R., & Palmer, E. J. (2003). Level of service inventory--revised profiles of violent and nonviolent prisoners. <i>Journal of Interpersonal Violence, 18</i> (9), 1075-1086.	C2		
102.	Inciardi, J. A., Martin, S. S., & Butzin, C. A. (2004). Five-year outcomes of therapeutic community treatment of drug-involved offenders after release from prison. <i>Crime & Delinquency, 50</i> (1), 88-107.		C5/R4	

103. Ingoldsby, E. M., & Shaw, D. S. (2002). Neighborhood contextual factors and early-starting antisocial pathways. <i>Clinical Child & Family Psychology Review</i> , 5(1), 21-55.			H8
104. Johansson, P., Kerr, M., & Andershed, H. (2005). Linking adult psychopathy with childhood hyperactivity-impulsivity-attention problems and conduct problems through retrospective self-reports. <i>Journal of Personality Disorders</i> , 19(1), 94-101.		H8	
105. Johnson, J. G., Cohen, P., Smailes, E., Kasen, S., Oldham, J. M., & Skodol, A. E. (2000). Adolescent personality disorders associated with violence and criminal behavior during adolescence and early adulthood. <i>American Journal of Psychiatry</i> , 157(9), 1406-1412.	H9		
106. Joyal, C. C., Putkonen, A., Paavola, P., & Tiihonen, J. (2004). Characteristics and circumstances of homicidal acts committed by offenders with schizophrenia. <i>Psychological Medicine</i> , 34(3), 433-442.		C3	
107. Juby, H., & Farrington, D. P. (2001). Disentangling the link between disrupted families and delinquency. <i>British Journal of Criminology</i> , 41(1), 22-40.		H8	
108. Junginger, J., & McGuire, L. (2004). Psychotic motivation and the paradox of current research on serious mental illness and rates of violence. <i>Schizophrenia Bulletin</i> , 30(1), 21-30.			C3
109. Junginger, J., Parks-Levy, J., & McGuire, L. (1998). Delusions and symptom-consistent violence. <i>Psychiatric Services</i> , 49(2), 218-220.		C3	
110. Killias, M., van Kesteren, J., & Rindlisbacher, M. (2001). Guns, violent crime, and suicide in 21 countries. <i>Canadian Journal of Criminology</i> , 43(4), 429-448.		R2	
111. Kjelsberg, E. (2002). DSM-IV conduct disorder symptoms in adolescents as markers of registered criminality. <i>European Child & Adolescent Psychiatry</i> , 11(1), 2-9.		H8	
112. Klevens, J., Roca, J., Restrepo, O., & Martinez, A. (2001). Risk factors for adult male criminality in Colombia. <i>Criminal Behavior & Mental Health</i> , 11(2), 73-85.		H8	

113. Koskinen, O., Sauvola, A., Valonen, P., Hakko, H., Marjo-Riitta, J., & Räsänen, P. (2001). Increased risk of violent recidivism among adult males is related to single-parent family during childhood: The northern Finland 1966 birth cohort study. <i>Journal of Forensic Psychiatry, 12</i> (3), 539-548.	H8		
114. Krakowski, M. I., & Czobor, P. (2004). Psychosocial risk factors associated with suicide attempts and violence among psychiatric inpatients. <i>Psychiatric Services, 55</i> (12), 1414-1419.	H8		
115. Krakowski, M., & Czobor, P. (2004). Gender differences in violent behaviors: Relationship to clinical symptoms and psychosocial factors. <i>American Journal of Psychiatry, 161</i> (3), 459-465.		H5;H8;C3	
116. Krakowski, M., & Czobor, P. (1997). Violence in psychiatric patients: The role of psychosis, frontal lobe impairment, and ward turmoil. <i>Comprehensive Psychiatry, 38</i> (4), 230-236.		C3	
117. Krakowski, M., Czobor, P., & Chou, J. C. -. (1999). Course of violence in patients with schizophrenia: Relationship to clinical symptoms. <i>Schizophrenia Bulletin, 25</i> (3), 505-517.		C3	
118. Kratzer, L., & Hodgins, S. (1999). A typology of offenders: A test of Moffitt's theory among males and females from childhood to age 30. <i>Criminal Behavior & Mental Health, 9</i> (1), 57-73.		H2	
119. Kroner, D. G., Mills, J. F., & Reddon, J. R. (2005). A coffee can, factor analysis, and prediction of antisocial behavior: The structure of criminal risk. <i>International Journal of Law and Psychiatry, 28</i> (4), 360-374.		H7	
120. Krueger, R. F., Moffitt, T. E., Caspi, A., Bleske, A., & Silva, P. A. (1998). Assortative mating for antisocial behavior: Developmental and methodological implications. <i>Behavior Genetics, 28</i> (3), 173-186.		H3	
121. Kunz, M., Yates, K. F., Czobor, P., Rabinowitz, S., Lindenmayer, J., & Volavka, J. (2004). Course of patients with histories of aggression and crime after discharge from a cognitive-behavioral program. <i>Psychiatric Services, 55</i> (6), 654-659.	C5/R4	H1;H7	
122. Lahey, B. B., Loeber, R., Burke, J. D., & Applegate, B. (2005). Predicting future antisocial personality disorder in males from a clinical assessment in childhood. <i>Journal of Consulting and Clinical Psychology, 73</i> (3), 389-399.		H8	

123. Lamb, H. R., & Weinberger, L. E. (2001). Persons with severe mental illness in jails and prisons: A review. In H. R. Lamb, & L. E. Weinberger (Eds.), <i>Deinstitutionalization: Promise and problems</i> . (pp.29-49). San Francisco: Jossey-Bass.			H6
124. Laub, J. H., Nagin, D. S., & Sampson, R. J. (1998). Trajectories of change in criminal offending: Good marriages and the desistance process. <i>American Sociological Review</i> , 63(2), 225-238.	H3		
125. Laurell, J., & Daderman, A. M. (2005). Recidivism is related to psychopathy (PCL-R) in a group of men convicted of homicide. <i>International Journal of Law and Psychiatry</i> , 28(3), 255-268.		H7	
126. Lindsay, W. R., Allan, R., Parry, C., Macleod, F., Cottrell, J., & Overend, H. et al. (2004). Anger and aggression in people with intellectual disabilities: Treatment and follow-up of consecutive referrals and a waiting list comparison. <i>Clinical Psychology & Psychotherapy</i> , 11(4), 255-264.		C4	
127. Link, B. G., Stueve, A., & Phelan, J. (1998). Psychotic symptoms and violent behaviors: Probing the components of "threat/control-override" symptoms. <i>Social Psychiatry & Psychiatric Epidemiology</i> , 33(1), S55-S60.	C3		
128. Link, B. G., Monahan, J., Stueve, A., & Cullen, F. T. (1999). Real in their consequences: A sociological approach to understanding the association between psychotic symptoms and violence. <i>American Sociological Review</i> , 64(2), 316-332.		C3	
129. Lipsey, M. W., Wilson, D. B., Cohen, M. A., & Derzon, J. H. (1997). Is there a causal relationship between alcohol use and violence? A synthesis of evidence. In M. Galanter (Ed.), <i>Recent developments in alcoholism, vol. 13: Alcohol and violence: Epidemiology, neurobiology, psychology, family issues</i> (pp. 245-282). New York, NY, US: Plenum Press.			H5
130. Loeber, R., & Hay, D. (1997). Key issues in the development of aggression and violence from childhood to early adulthood. <i>Annual Review of Psychology</i> , 48, 371-410.			H8
131. Longato-Stadler, E., von Knorring, L., & Hallman, J. (2002). Mental and personality disorders as well as personality traits in a Swedish male criminal population. <i>Nordic Journal of Psychiatry</i> , 56(2), 137-144.		H9	
132. Looman, J., Abracen, J., Serin, R., & Marquis, P. (2005). Psychopathy, treatment change, and recidivism in high-risk, high-need sexual offenders. <i>Journal of Interpersonal Violence</i> , 20(5), 549-568.		H7	

133.	Loza, W. (2003). Predicting violent and nonviolent recidivism of incarcerated male offenders. <i>Aggression & Violent Behavior, 8</i> (2), 175-203.		C2	
134.	Loza, W., & Loza-Fanous, A. (2003). More evidence for the validity of the self-appraisal questionnaire for predicting violent and nonviolent recidivism: A 5-year follow-up study. <i>Criminal Justice & Behavior, 30</i> (6), 709-721.	C2		
135.	Loza, W., & Loza-Fanous, A. (1999). Anger and prediction of violent and nonviolent offenders' recidivism. <i>Journal of Interpersonal Violence, 14</i> (10), 1014-1029.		C4	
136.	Loza, W., & Loza-Fanous, A. (1999). The fallacy of reducing rape and violent recidivism by treating anger. <i>International Journal of Offender Therapy & Comparative Criminology, 43</i> (4), 492-502.		C4	
137.	Lundeberg, K., Stith, S. M., Penn, C. E., & Ward, D. B. (2004). A comparison of nonviolent, psychologically violent, and physically violent male college daters. <i>Journal of Interpersonal Violence, 19</i> (10), 1191-1200.		C4	
138.	Lynam, D. R., Caspi, A., Moffit, T. E., Wikström, P., Loeber, R., & Novak, S. (2000). The interaction between impulsivity and neighborhood context on offending: The effects of impulsivity are stronger in poorer neighborhoods. <i>Journal of Abnormal Psychology, 109</i> (4), 563-574.		C4	
139.	Lynam, D. R., & Gudonis, L. (2005). The development of psychopathy. <i>Annual Review of Clinical Psychology, 1</i> (1), 381-407.			H7
140.	Lynam, D. R., Leukefeld, C., & Clayton, R. R. (2003). The contribution of personality to the overlap between antisocial behavior and substance use/misuse. <i>Aggressive Behavior, 29</i> (4), 316-331.		H9	
141.	Mäki, P., Hakko, H., Joukamaa, M., Läärä, E., Isohanni, M., & Veijola, J. (2003). Parental separation at birth and criminal behavior in adulthood: A long-term follow-up of the Finnish Christmas seal home children. <i>Social Psychiatry & Psychiatric Epidemiology, 38</i> (7), 354-359.		H8	
142.	Martin, S. E., & Bryant, K. (2001). Gender differences in the association of alcohol intoxication and illicit drug abuse among persons arrested for violent and property offenses. <i>Journal of Substance Abuse, 13</i> (4), 563-581.		H5	

143. Mayzer, R., Gray, M.K., & Maxwell, S. R. (2004). Probation absconders: A unique risk group? <i>Journal of Criminal Justice</i> , 32(2), 137-150.		H4	
144. McCoy, H. V., Messiah, S. E., & Yu, Z. (2001). Perpetrators, victims, and observers of violence: Chronic and nonchronic drug users. <i>Journal of Interpersonal Violence</i> , 16(9), 890-909.	H5		
145. McMahon, J., & Clay-Warner, J. (2002). Child abuse and future criminality: The role of social service placement, family disorganization and gender. <i>Journal of Interpersonal Violence</i> , 17(9), 1002-1019.		H8	
146. McNiel, D. E. (1997). Correlates of violence in psychotic patients. <i>Psychiatric Annals</i> , 27(10), 683-690.			H6
147. McNiel, D. E., Eisner, J. P., & Binder, R. L. (2003). The relationship between aggressive attributional style and violence by psychiatric patients. <i>Journal of Consulting & Clinical Psychology</i> , 71(2), 399-403.	C1;C4		
148. McNiel, D. E., Eisner, J. P., & Binder, R. L. (2000). The relationship between command hallucinations and violence. <i>Psychiatric Services</i> , 51(10), 1288-1292.	C3		
149. Merrill, J. C., Alterman, A., Cacciola, J., & Rutherford, M. (1999). Prior treatment history and its impact on criminal recidivism. <i>Journal of Substance Abuse Treatment</i> , 17(4), 313-319.		C5/R4	
150. Messer, J., Maughan, B., Quinton, D., & Taylor, A. (2004). Precursors and correlates of criminal behavior in women. <i>Criminal Behavior & Mental Health</i> , 14(2), 82-107.		H8	
151. Miles, H., Johnson, S., Amponsah-Afuwape, S., Leese, M., Finch, E., & Thornicroft, G. (2003). Characteristics of subgroups of individuals with psychotic illness and a comorbid substance use disorder. <i>Psychiatric Services</i> , 54(4), 554-561.		H5	
152. Miller, J. D., Lynam, D. R., Widiger, T. A., & Leukefeld, C. (2001). Personality disorders as extreme variants of common personality dimensions: Can the five-factor model adequately represent psychopathy? <i>Journal of Personality</i> , 69(2), 253-276.		H9	
153. Miller, N. S., Ninonuevo, F. G., Klamen, D. L., Hoffmann, N. G., & Smith, D. E. (1997). Integration of treatment and posttreatment variables in predicting results of abstinence-based outpatient treatment after one year. <i>Journal of Psychoactive Drugs</i> , 29(3), 239-248.		R2	

154. Mills, J. F., Anderson, D., & Kroner, D. G. (2004). The antisocial attitudes and associates of sex offenders. <i>Criminal Behavior and Mental Health, 14</i> (2), 134-145.		C2	
155. Mills, J. F., & Kroner, D. G. (2003). Anger as a predictor of institutional misconduct and recidivism in a sample of violent offenders. <i>Journal of Interpersonal Violence, 18</i> (3), 282-294.		C4	
156. Mills, J. F., & Kroner, D. G. (2003). Antisocial constructs in predicting institutional violence among violent offenders and child molesters. <i>International Journal of Offender Therapy & Comparative Criminology, 47</i> (3), 324-334.		C2	
157. Mills, J. F., & Kroner, D. G. (1997). The criminal sentiments scale: Predictive validity in a sample of violent and sex offenders. <i>Journal of Clinical Psychology, 53</i> (4), 399-404.		C2	
158. Mills, J. F., Kroner, D. G., & Forth, A. E. (2002). Measures of criminal attitudes and associations (MCAA): Development, factor structure, reliability, and validity. <i>Assessment, 9</i> (3), 240-253.		C2	
159. Mills, J. F., Kroner, D. G., & Forth, A. E. (1998). Novaco anger scale: Reliability and validity within an adult criminal sample. <i>Assessment, 5</i> (3), 237-248.		C4	
160. Mills, J. F., Kroner, D. G., & Hemmati, T. (2004). The measures of criminal attitudes and associates (MCAA): The prediction of general and violent recidivism. <i>Criminal Justice and Behavior, 31</i> (6), 717-733.		C2	
161. Milton, J., Amin, S., Singh, S. P., Harrison, G., Jones, P., & Croudace, T. et al. (2001). Aggressive incidents in first-episode psychosis. <i>British Journal of Psychiatry, 178</i> , 433-440.	H1;H3;H4;H10	C3	
162. Mintz, A. R., Dobson, K. S., & Romney, D. M. (2003). Insight in schizophrenia: A meta-analysis. <i>Schizophrenia Research, 61</i> (1), 75-88.		C1	
163. Moffitt, T. E., Caspi, A., Harrington, H., & Milne, B. J. (2002). Males on the life-course-persistent and adolescence-limited antisocial pathways: Follow-up at age 26 years. <i>Development & Psychopathology, 14</i> (1), 179-207.	H2	H8	
164. Monahan, J., Bonnie, R. J., Appelbaum, P. S., Hyde, P. S., Steadman, H. J., & Swartz, M. S. (2001). Mandated community treatment: Beyond outpatient commitment. <i>Psychiatric Services, 52</i> (9), 1198-1205.			C5/R4

165. Moran, P., Walsh, E., Tyrer, P., Burns, T., Creed, F., & Fahy, T. (2003). Impact of comorbid personality disorder on violence in psychosis: Report from the UK700 trial. <i>British Journal of Psychiatry, 182</i> (2), 129-134.	H9		
166. Morrison, G. M., Robertson, L., Laurie, B., & Kelly, J. (2002). Protective factors related to antisocial behavior trajectories. <i>Journal of Clinical Psychology, 58</i> (3), 277-290.	R3		
167. Munkner, R., Haastrup, S., Joergensen, T., & Kramp, P. (2003). The temporal relationship between schizophrenia and crime. <i>Social Psychiatry & Psychiatric Epidemiology, 38</i> (7), 347-353.		H6	
168. Nagin, D., & Paternoster, R. (2000). Population heterogeneity and state dependence: State of the evidence and directions for future research. <i>Journal of Quantitative Criminology, 16</i> (2), 117-144.			H1
169. Naples, M., & Steadman, H. J. (2003). Can persons with co-occurring disorders and violent charges be successfully diverted? <i>International Journal of Forensic Mental Health, 2</i> (2), 137-143.		R1	
170. Nestor, P. G. (2002). Mental disorder and violence: Personality dimensions and clinical features. <i>American Journal of Psychiatry, 159</i> (12), 1973-1978.			H9
171. Newhill, C. E., & Mulvey, E. P. (2002). Emotional dysregulation: The key to a treatment approach for violent mentally ill individuals. <i>Clinical Social Work Journal, 30</i> (2), 157-171.			C4
172. Nicholls, T. L., Ogloff, J. R. P., & Douglas, K. S. (2004). Assessing risk for violence among male and female civil psychiatric patients: The HCR-20, PCL: SV, and VSC. <i>Behavioral Sciences & the Law, 22</i> (1), 127-158.		H7	
173. Nilsson, A. (2003). Living conditions, social exclusion and recidivism among prison inmates. <i>Journal of Scandinavian Studies in Criminology & Crime Prevention, 4</i> (1), 57-83.		H4;R2	
174. Nolan, K.A., Czobor, P., Roy, B. B., Platt, M.M., Shope, C. B., Citrome, L. L., & Volavka, J. (2003). Characteristics of assaultive behavior among psychiatric inpatients. <i>Psychiatric Services, 54</i> (7), 1012-1016.		C3	
175. Nolan, K. A., Volavka, J., Mohr, P., & Czobor, P. (1999). Psychopathy and violent behavior among patients with schizophrenia or schizoaffective disorder. <i>Psychiatric Services, 50</i> (6), 787-792.		H7	

176. Novaco, R. W., & Taylor, J. L. (2004). Assessment of anger and aggression in male offenders with developmental disabilities. <i>Psychological Assessment, 16</i> (1), 42-50.	C4		
177. Nussbaum, D., Collins, M., Cutler, J., Zimmerman, W., Farguson, B., & Jacques, I. (2002). Crime type and specific personality indicia: Cloninger's TCI impulsivity, empathy and attachment subscales in non-violent, violent and sexual offenders. <i>American Journal of Forensic Psychology, 20</i> (1), 23-56.		C4	
178. O'Reilly, R. L. (2001). Does involuntary out-patient treatment work? <i>Psychiatric Bulletin, 25</i> (10), 371-374.			C5/R4
179. Osher, F., Steadman, H. J., & Barr, H. (2003). A best practice approach to community reentry from jails for inmates with co-occurring disorders: The APIC model. <i>Crime & Delinquency, 49</i> (1), 79-96.			R1
180. Parker, R. N., & Auerhahn, K. (1998). Alcohol, drugs, and violence. <i>Annual Review of Sociology, 24</i> , 291-311.			H5
181. Paschall, M. J., & Hubbard, M. L. (1998). Effects of neighborhood and family stressors on African American male adolescents' self-worth and propensity for violent behavior. <i>Journal of Consulting & Clinical Psychology, 66</i> (5), 825-831.		R2; R5	
182. Patrick, C. J., & Zempolich, K. A. (1998). Emotion and aggression in the psychopathic personality. <i>Aggression & Violent Behavior, 3</i> (4), 303-338.			H7
183. Peersen, M., Sigurdsson, J. F., Gudjonsson, G. H., & Gretarsson, S. J. (2004). Predicting re-offending: A 5-year prospective study of Icelandic prison inmates. <i>Psychology, Crime & Law, 10</i> (2), 197-204.		H1; H2; H9	
184. Petrila, J., Ridgely, M. S., & Borum, R. (2003). Debating outpatient commitment: Controversy, trends, and empirical data. <i>Crime & Delinquency, 49</i> (1), 157-172.			C5/R4
185. Phillips, H. K., Gray, N. S., MacCulloch, S. I., Taylor, J., Moore, S. C., & Huckle, P. et al. (2005). Risk assessment in offenders with mental disorders: Relative efficacy of personal demographic, criminal history, and clinical variables. <i>Journal of Interpersonal Violence, 20</i> (7), 833-847.		H6	
186. Pihl, R. O., & Hoaken, P. N. S. (1997). Clinical correlates and predictors of violence in patients with substance use disorders. <i>Psychiatric Annals, 27</i> (11), 735-740.			H5

187. Piquero, A. R., & Chung, H. L. (2001). On the relationship between gender, early onset, and the seriousness of offending. <i>Journal of Criminal Justice</i> , 29(3), 189-206.	H2		
188. Piquero, A., & Tibbetts, S. (1999). The impact of pre/perinatal disturbances and disadvantaged familial environment in predicting criminal offending. <i>Studies on Crime & Crime Prevention</i> , 8(1), 52-70.		H8	
189. Polaschek, D. L. L., Collie, R. M., & Walkey, F. H. (2004). Criminal attitudes to violence: Development and preliminary validation of a scale for male prisoners. <i>Aggressive Behavior</i> , 30(6), 484-503.		C2	
190. Porter, S., Birt, A., & Boer, D. P. (2001). Investigation of the criminal and conditional release profiles of Canadian federal offenders as a function of psychopathy and age. <i>Law & Human Behavior</i> , 25(6), 647-661.	H7		
191. Porter, S., Woodworth, M., Earle, J., Drugge, J., & Boer, D. (2003). Characteristics of sexual homicides committed by psychopathic and nonpsychopathic offenders. <i>Law & Human Behavior</i> , 27(5), 459-470.		H7	
192. Pulkkinen, L., Virtanen, T., Klinteberg, B. A., & Magnusson, D. (2000). Child behavior and adult personality: Comparisons between criminality groups in Finland and Sweden. <i>Criminal Behavior & Mental Health</i> , 10(3), 155-169.		H8	
193. Putkonen, H., Komulainen, E. J., Virkkunen, M., Eronen, M., & Lönnqvist, J. (2003). Risk of repeat offending among violent female offenders with psychotic and personality disorders. <i>American Journal of Psychiatry</i> , 160(5), 947-951.		H5	
194. Quanbeck, C., Stone, D. C., Scott, C. L., McDermott, B. E., Altshuler, L. L., & Frye, M. A. (2004). Clinical and legal correlates of inmates with bipolar disorder at time of criminal arrest. <i>Journal of Clinical Psychiatry</i> , 65(2), 198-203.		C3	
195. RachBeisel, J., Scott, J., & Dixon, L. (1999). Co-occurring severe mental illness and substance use disorders: A review of recent research. <i>Psychiatric Services</i> , 50(11), 1427-1434.			H5
196. Raine, A., Mellinger, K., Liu, J., Venables, P., & Mednick, S. A. (2003). Effects of environmental enrichment at ages 3-5 years on schizotypal personality and antisocial behavior at ages 17 and 23 years. <i>American Journal of Psychiatry</i> , 160(9), 1627-1635.		H8	

197. Richardson, A., & Budd, T. (2003). Young adults, alcohol, crime and disorder. <i>Criminal Behavior & Mental Health</i> , 13(1), 5-17.		H5	
198. Robbins, P. C., Monahan, J., & Silver, E. (2003). Mental disorder, violence, and gender. <i>Law & Human Behavior</i> , 27(6), 561-571.		H5;H6;C5/R4	
199. Rosenbaum, A., Gearan, P. J., & Ondovic, C. (2002). Completion and recidivism among court- and self-referred batterers in a psychoeducational group treatment program: Implications for intervention and public policy. <i>Journal of Aggression, Maltreatment & Trauma</i> , 5(2), 199-220.		C5;R4	
200. Rudnick, A. (1999). Relation between command hallucinations and dangerous behavior. <i>Journal of the American Academy of Psychiatry & the Law</i> , 27(2), 253-257.			C3
201. Ryan, J. E. (1997). Who gets revoked? A comparison of intensive supervision successes and failures in Vermont. <i>Crime & Delinquency</i> , 43(1), 104-118.	H10		
202. Salekin, R. T., Rogers, R., Ustad, K. L., & Sewell, K. W. (1998). Psychopathy and recidivism among female inmates. <i>Law & Human Behavior</i> , 22(1), 109-128.		H7	
203. Samuels, J., Bienvenu, O. J., Cullen, B., Costa, P. T. J., Eaton, W. W., & Nestadt, G. (2004). Personality dimensions and criminal arrest. <i>Comprehensive Psychiatry</i> , 45(4), 275-280.		H9;C4	
204. Sauvola, A., Koskinen, O., Jokelainen, J., Hakko, H., Järvelin, M., & Räsänen, P. (2002). Family type and criminal behavior of male offspring: The northern Finland 1966 birth cohort study. <i>International Journal of Social Psychiatry</i> , 48(2), 115-121.	H8		
205. Scarpa, A. (2001). Community violence exposure in a young adult sample: Lifetime prevalence and socioemotional effects. <i>Journal of Interpersonal Violence</i> , 16(1), 36-53.	H8		
206. Schanda, H., Knecht, G., Schreinzer, D., Stompe, T., Ortwein-Swoboda, G., & Waldhoer, T. (2004). Homicide and major mental disorders: A 25-year study. <i>Acta Psychiatrica Scandinavica</i> , 110(2), 98-107.	H5;H6		
207. Scott, K. D., Schafer, J., & Greenfield, T. K. (1999). The role of alcohol in physical assault perpetration and victimization. <i>Journal of Studies on Alcohol</i> , 60(4), 528-536.		C4	

208. Shaw, D. S. (2003). Advancing our understanding of intergenerational continuity in antisocial behavior. <i>Journal of Abnormal Child Psychology</i> , 31(2), 193-199.		H8	
209. Siegal, H. A., Wang, J., Carlson, R. G., Falck, R. S., Rahman, A. M., & Fine, R. L. (1999). Ohio's prison-based therapeutic community treatment programs for substance abusers: Preliminary analysis of re-arrest data. <i>Journal of Offender Rehabilitation</i> , 28(3), 33-48.		C5/R4	
210. Silver, E. (2001). Neighborhood social disorganization as a cofactor in violence among people with mental disorders. <i>International J.I of Offender Therapy & Comparative Criminology</i> , 45(4), 403-406.		R5	
211. Silver, E. (2000). Race, neighborhood disadvantage, and violence among persons with mental disorders: The importance of contextual measurement. <i>Law and Human Behavior</i> , 24(4), 449-456.		R3	
212. Silver, E., Mulvey, E. P., & Monahan, J. (1999). Assessing violence risk among discharged psychiatric patients: Toward an ecological approach. <i>Law & Human Behavior</i> , 23(2), 237-255.		R2	
213. Silver, E., & Teasdale, B. (2005). Mental disorder and violence: An examination of stressful life events and impaired social support. <i>Social Problems</i> , 52(1), 62-78.	R3;R5		
214. Simourd, D. J., & Hoge, R. D. (2000). Criminal psychopathy: A risk-and-need perspective. <i>Criminal Justice & Behavior</i> , 27(2), 256-272.		H7	
215. Simourd, D. J., & Olver, M. E. (2002). The future of criminal attitudes research and practice. <i>Criminal Justice & Behavior</i> , 29(4), 427-446.		C2;R1	
216. Simourd, D. J., & van de Ven, J. (1999). Assessment of criminal attitudes: Criterion-related validity of the criminal sentiments scale-modified and pride in delinquency scale. <i>Criminal Justice & Behavior</i> , 26(1), 90-106.		C2	
217. Simpson, A. I. F., McKenna, B., Moskowitz, A., Skipworth, J., & Barry-Walsh, J. (2004). Homicide and mental illness in New Zealand, 1970-2000. <i>British Journal of Psychiatry</i> , 185(5), 394-398.		H6	

218. Skeem, J. L., Monahan, J., & Mulvey, E. P. (2002). Psychopathy, treatment involvement, and subsequent violence among civil psychiatric patients. <i>Law & Human Behavior, 26</i> (6), 577-603.	H7;R1		
219. Skeem, J. L., & Mulvey, E. P. (2001). Psychopathy and community violence among civil psychiatric patients: Results from the MacArthur violence risk assessment study. <i>Journal of Consulting & Clinical Psychology, 69</i> (3), 358-374.	H7		
220. Skeem, J. L., Poythress, N., Edens, J. F., Lilienfeld, S. O., & Cale, E. M. (2003). Psychopathic personality or personalities? Exploring potential variants of psychopathy and their implications for risk assessment. <i>Aggression and Violent Behavior, 8</i> (5), 513-546.			H7
221. Small, M. (2001). Two year reconvictions in a rehabilitation centre. <i>Therapeutic Communities: International Journal for Therapeutic & Supportive Organizations, 22</i> (2), 153-166.		C5/R4	
222. Soderstrom, H., Sjodin, A., Carlstedt, A., & Forsman, A. (2004). Adult psychopathic personality with childhood-onset hyperactivity and conduct disorder: A central problem constellation in forensic psychiatry. <i>Psychiatry Research, 121</i> (3), 271-280.		H8	
223. Solomon, P., & Draine, J. (1999). Explaining lifetime criminal arrests among clients of a psychiatric probation and parole service. <i>Journal of the American Academy of Psychiatry & the Law, 27</i> (2), 239-251.	R2	C3	
224. Solomon, P., Draine, J., & Marcus, S. C. (2002). Predicting incarceration of clients of a psychiatric probation and parole service. <i>Psychiatric Services, 53</i> (1), 50-56.	R2;C5/R4		
225. Soyka, M. (2000). Substance misuse, psychiatric disorder and violent and disturbed behavior. <i>British Journal of Psychiatry, 176</i> , 345-350.			H5;H6
226. Soyka, M., Morhart-Klute, V., & Schoech, H. (2004). Delinquency and criminal offenses in former schizophrenic inpatients 7-12 years following discharge. <i>European Archives of Psychiatry & Clinical Neuroscience, 254</i> (5), 289-294.		H6	
227. Stadtland, C., Hollweg, M., Kleindienst, N., Dietl, J., Reich, U., & Nedopil, N. (2005). Risk assessment and prediction of violent and sexual recidivism in sex offenders: Long-term predictive validity of four risk assessment instruments. <i>Journal of Forensic Psychiatry & Psychology, 16</i> (1), 92-108.		H7	

228. Stadtland, C., Kleindienst, N., Kröner, C., Eidt, M., & Nedopil, N. (2005). Psychopathic traits and risk of criminal recidivism in offenders with and without mental disorders. <i>International Journal of Forensic Mental Health</i> , 4(1), 89-97.		H7	
229. Steadman, H. J., Mulvey, E. P., Monahan, J., Robbins, P. C., Appelbaum, P. S., & Grisso, T. et al. (1998). Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods. <i>Archives of General Psychiatry</i> , 55(5), 393-401.		H5	
230. Steels, M., Roney, G., Larkin, E., Jones, P., Croudace, T., & Duggan, C. (1998). Discharged from special hospital under restrictions: A comparison of the fates of psychopaths and the mentally ill. <i>Criminal Behavior & Mental Health</i> , 8(1), 39-55.		H7	
231. Steinert, T., Wölfle, M., & Gebhardt, R. P. (2000). Measurement of violence during in-patient treatment and association with psychopathology. <i>Acta Psychiatrica Scandinavica</i> , 102(2), 107-112.		C3	
232. Steinert, T., Sippach, T., & Gebhardt, R. P. (2000). How common is violence in schizophrenia despite neuroleptic treatment? <i>Pharmacopsychiatry</i> , 33(3), 98-102.		C5/R4	
233. Stevenson, J., Meares, R., & Comerford, A. (2003). Diminished impulsivity in older patients with borderline personality disorder. <i>American Journal of Psychiatry</i> , 160(1), 165-166.		C4	
234. Stompe, T., Ortwein-Swoboda, G., & Schanda, H. (2004). Schizophrenia, delusional symptoms, and violence: The threat/control-override concept reexamined. <i>Schizophrenia Bulletin</i> , 30(1), 31-44.	C3		
235. Stuart, H. L., & Arboleda-Flórez, J. E. (2001). A public health perspective on violent offenses among persons with mental illness. <i>Psychiatric Services</i> , 52(5), 654-659.	H5;H6		
236. Stueve, A., & Link, B. G. (1998). Gender differences in the relationship between mental illness and violence: Evidence from a community-based epidemiological study in Israel. <i>Social Psychiatry & Psychiatric Epidemiology</i> , 33(1), S61-S67.		H6;C3	
237. Stueve, A., & Link, B. G. (1997). Violence and psychiatric disorders: Results from an epidemiological study of young adults in Israel. <i>Psychiatric Quarterly</i> , 68(4), 327-342.	H6		

238. Suter, J. M., Byrne, M. K., Byrne, S., Howells, K., & Day, A. (2002). Anger in prisoners: Women are different from men. <i>Personality & Individual Differences</i> , 32(6), 1087-1100.		C4	
239. Swanson, J., Swartz, M., Estroff, S., Borum, R., Wagner, R., & Hiday, V. (1998). Psychiatric impairment, social contact, and violent behavior: Evidence from a study of outpatient-committed persons with severe mental disorder. <i>Social Psychiatry & Psychiatric Epidemiology</i> , 33(1), S86-S94.	R3		
240. Swanson, J. W., Borum, R., Swartz, M. S., Hiday, V. A., Wagner, H. R., & Burns, B. J. (2001). Can involuntary outpatient commitment reduce arrests among persons with severe mental illness? <i>Criminal Justice & Behavior</i> , 28(2), 156-189.		C5/R4	
241. Swanson, J. W., Swartz, M. S., Borum, R., Hiday, V. A., Wagner, H. R., & Burns, B. J. (2000). Involuntary out-patient commitment and reduction of violent behavior in persons with severe mental illness. <i>British Journal of Psychiatry</i> , 176, 324-331.	C5;R4	C5/R4	
242. Swanson, J. W., Swartz, M. S., Elbogen, E. B., Wagner, H. R., & Burns, B. J. (2003). Effects of involuntary outpatient commitment on subjective quality of life in persons with severe mental illness. <i>Behavioral Sciences & the Law</i> , 21(4), 473-491.		C5/R4	
243. Swanson, J. W., Swartz, M. S., Essock, S. M., Osher, F. C., Wagner, H. R., & Goodman, L. A. et al. (2002). The social-environmental context of violent behavior in persons treated for severe mental illness. <i>American Journal of Public Health</i> , 92(9), 1523-1531.	H5;H8;C1	C5/R4	
244. Swanson, J., Borum, R., Swartz, M., & Hiday, V. (1999). Violent behavior preceding hospitalization among persons with severe mental illness. <i>Law & Human Behavior</i> , 23(2), 185-204.	H5	H6	
245. Swartz, J. A., & Lurigio, A. A. (2004). Psychiatric diagnosis, substance use and dependence, and arrests among former recipients of supplemental security income for drug abuse and alcoholism. <i>Journal of Offender Rehabilitation</i> , 39(2), 19-38.	H5;H6;H9		
246. Swartz, M. S., Swanson, J. W., Hiday, V. A., Borum, R., Wagner, R., & Burns, B. J. (1998). Taking the wrong drugs: The role of substance abuse and medication noncompliance in violence among severely mentally ill individuals. <i>Social Psychiatry & Psychiatric Epidemiology</i> , 33(1), S75-S80.		H5;C5/R4	

247. Swartz, M. S., & Swanson, J. W. (2004). Involuntary outpatient commitment, community treatment orders, and assisted outpatient treatment: What's in the data? <i>Canadian Journal of Psychiatry, 49</i> (9), 585-591.			C5/R4
248. Swartz, M. S., Swanson, J. W., Hiday, V. A., Borum, R., Wagner, H. R., & Burns, B. J. (1998). Violence and severe mental illness: The effects of substance abuse and nonadherence to medication. <i>American Journal of Psychiatry, 155</i> (2), 226-231.		H5; C5/R4	
249. Swartz, M. S., Swanson, J. W., Hiday, V. A., Wagner, H. R., Burns, B. J., & Borum, R. (2001). A randomized controlled trial of outpatient commitment in North Carolina. <i>Psychiatric Services, 52</i> (3), 325-329.		C5/R4	
250. Swartz, M. S., Swanson, J. W., Wagner, H. R., Burns, B. J., & Hiday, V. A. (2001). Effects of involuntary outpatient commitment and depot antipsychotics on treatment adherence in persons with severe mental illness. <i>Journal of Nervous & Mental Disease, 189</i> (9), 583-592.		C5/R4	
251. Swartz, M. S., Swanson, J. W., Wagner, H. R., Burns, B. J., Hiday, V. A., & Borum, R. (1999). Can involuntary outpatient commitment reduce hospital recidivism?: Findings from a randomized trial with severely mentally ill individuals. <i>American Journal of Psychiatry, 156</i> (12), 1968-1975.		C5/R4	
252. Taft, C. T., Pless, A. P., Stalans, L. J., Koenen, K. C., King, L. A., & King, D. W. (2005). Risk factors for partner violence among a national sample of combat veterans. <i>Journal of Consulting and Clinical Psychology, 73</i> (1), 151-159.		H6	
253. Tardiff, K., Marzuk, P. M., Leon, A. C., & Portera, L. (1997). A prospective study of violence by psychiatric patients after hospital discharge. <i>Psychiatric Services, 48</i> (5), 678-681.		H1; H9	
254. Taylor, P. J., Leese, M., Williams, D., Butwell, M., Daly, R., & Larkin, E. (1998). Mental disorder and violence: A special (high security) hospital study. <i>British Journal of Psychiatry, 172</i> , 218-226.		H6	
255. Tehrani, J. A., Brennan, P. A., Hodgins, S., & Mednick, S. A. (1998). Mental illness and criminal violence. <i>Social Psychiatry & Psychiatric Epidemiology, 33</i> (1), S81-S85.			H6

256. Tengström, A., Grann, M., Långström, N., & Kullgren, G. (2000). Psychopathy (PCL-R) as a predictor of violent recidivism among criminal offenders with schizophrenia. <i>Law & Human Behavior, 24</i> (1), 45-58.		H7	
257. Tengström, A., Hodgins, S., Grann, M., Långström, N., & Kullgren, G. (2004). Schizophrenia and criminal offending: The role of psychopathy and substance use disorders. <i>Criminal Justice & Behavior, 31</i> (4), 367-391.		H5;H7	
258. Tengström, A., Hodgins, S., & Kullgren, G. (2001). Men with schizophrenia who behave violently: The usefulness of an early- versus late-start offender typology. <i>Schizophrenia Bulletin, 27</i> (2), 205-218.	H2		
259. Thornberry, T. P., Freeman-Gallant, A., Lizotte, A. J., Krohn, M. D., & Smith, C. A. (2003). Linked lives: The intergenerational transmission of antisocial behavior. <i>Journal of Abnormal Child Psychology, 31</i> (2), 171-184.		H8	
260. Tiihonen, J., Isohanni, M., Raesaenen, P., Koiranen, M., & Moring, J. (1997). Specific major mental disorders and criminality: A 26-year prospective study of the 1996 northern Finland birth cohort. <i>American Journal of Psychiatry, 154</i> (6), 840-845.	H6	H5	
261. Timonen, M., Miettunen, J., Hakko, H., Järvelin, M. R., Veijola, J., & Kinnunen, J. et al. (2000). Psychiatric admissions at different levels of the national health care services and male criminality: The northern Finland 1966 birth cohort study. <i>Social Psychiatry & Psychiatric Epidemiology, 35</i> (5), 198-201.		H6	
262. Torrey, E. F., & Zdanowicz, M. (2001). Outpatient commitment: What, why, and for whom. <i>Psychiatric Services, 52</i> (3), 337-341.			C5/R4
263. Tuninger, E., Levander, S., Bernce, R., & Johansson, G. (2001). Criminality and aggression among psychotic in-patients: Frequency and clinical correlates. <i>Acta Psychiatrica Scandinavica, 103</i> (4), 294-300.		C3	
264. Tzeng, H., Lin, Y., & Hsieh, J. (2004). Forecasting violent behaviors for schizophrenic outpatients using their disease insights: Development of a binary logistic regression model and a support vector model. <i>International Journal of Mental Health, 33</i> (2), 17-31.		C1	

265. Uggen, C. (2000). Work as a turning point in the life course of criminals: A duration model of age, employment, and recidivism. <i>American Sociological Review</i> , 65(4), 529-546.		H4	
266. Ullrich, S., & Marneros, A. (2004). Dimensions of personality disorders in offenders. <i>Criminal Behavior & Mental Health</i> , 14(3), 202-213.	H9		
267. Ulmer, J. T. (2001). Intermediate sanctions: A comparative analysis of the probability and severity of recidivism. <i>Sociological Inquiry</i> , 71(2), 164-193.		H1	
268. Van Stelle, K. R., & Moberg, D. P. (2004). Outcome data for MICA clients after participation in an institutional therapeutic community. <i>Journal of Offender Rehabilitation</i> , 39(1), 37-62.		C5/R4	
269. Villemarette-Pittman, N. R., Stanford, M. S., Greve, K. W., Houston, R. J., & Mathias, C. W. (2004). Obsessive-compulsive personality disorder and behavioral disinhibition. <i>Journal of Psychology: Interdisciplinary & Applied</i> , 138(1), 5-22.		H9	
270. Volavka, J., Laska, E., Baker, S., & Meisner, M. (1997). History of violent behavior and schizophrenia in different cultures. analyses based on the WHO study on determinants of outcome of severe mental disorders. <i>British Journal of Psychiatry</i> , 171, 9-14.		C3	
271. Waldheter, E. J., Jones, N. T., Johnson, E. R., & Penn, D. L. (2005). Utility of social cognition and insight in the prediction of inpatient violence among individuals with a severe mental illness. <i>Journal of Nervous and Mental Disease</i> , 193(9), 609-618.	C1		
272. Wallace, C., Mullen, P., Burgess, P., Palmer, S., Ruschena, D., & Browne, C. (1998). Serious criminal offending and mental disorder. <i>British Journal of Psychiatry</i> , 172(6), 477-484.	H5;H9	H6	
273. Walsh, E., Buchanan, A., & Fahy, T. (2002). Violence and schizophrenia: Examining the evidence. <i>British Journal of Psychiatry</i> , 180(6), 490-495.			H6
274. Walsh, E., Gilvarry, C., Samele, C., Harvey, K., Manley, C., & Tattan, T. et al. (2004). Predicting violence in schizophrenia: A prospective study. <i>Schizophrenia Research</i> , 67(2), 247-252.	H1;H5	C3	
275. Walsh, E., Gilvarry, C., Samele, C., Harvey, K., Manley, C., & Tyrer, P. et al. (2001). Reducing violence in severe mental illness: Randomised controlled trial of intensive case management compared with standard care. <i>BMJ: British Medical Journal</i> , 323(7321), 1093.	C5/R4		

276. Walsh, Z., Swogger, M. T., & Kosson, D. S. (2004). Psychopathy, IQ, and violence in European American and African American county jail inmates. <i>Journal of Consulting and Clinical Psychology, 72</i> (6), 1165-1169.	H7		
277. Wang, E. W., & Diamond, P. M. (1999). Empirically identifying factors related to violence risk in corrections. <i>Behavioral Sciences & the Law, 17</i> (3), 377-389.		C4	
278. Warren, J. I., Hurt, S., Loper, A. B., Bale, R., Friend, R., & Chauhan, P. (2002). Psychiatric symptoms, history of victimization, and violent behavior among incarcerated female felons: An American perspective. <i>International Journal of Law & Psychiatry, 25</i> (2), 129-149.	H9		
279. Warren, J. I., South, S. C., Burnette, M. L., Rogers, A., Friend, R., & Bale, R. et al. (2005). Understanding the risk factors for violence and criminality in women: The concurrent validity of the PCL-R and HCR-20. <i>International Journal of Law and Psychiatry, 28</i> (3), 269-289.	H7		
280. Watts, D., Leese, M., Thomas, S., Atakan, Z., & Wykes, T. (2003). The prediction of violence in acute psychiatric units. <i>International Journal of Forensic Mental Health, 2</i> (2), 173-180.	H1		
281. Wessely, S. (1998). The camberwell study of crime and schizophrenia. <i>Social Psychiatry & Psychiatric Epidemiology, 33</i> (1), S24-S28.	H3;H4;H5;H6		
282. Widom, C. S., & White, H. R. (1997). Problem behaviors in abused and neglected children grown up: Prevalence and co-occurrence of substance abuse, crime and violence. <i>Criminal Behavior & Mental Health, 7</i> (4), 287-310.	H8		
283. Williams, J. H., Van Dorn, R. A., Hawkins, J. D., Abbott, R., & Catalano, R. F. (2001). Correlates contributing to involvement in violent behaviors among young adults. <i>Violence & Victims, 16</i> (4), 371-388.	C2;R5		
284. Woods, P., Reed, V., & Collins, M. (2003). The relationship between risk and insight in a high-security forensic setting. <i>Journal of Psychiatric and Mental Health Nursing, 10</i> (5), 510-517.		C1	
285. Woodward, L. J., Fergusson, D. M., & Horwood, L. J. (2002). Romantic relationships of young people with childhood and adolescent onset antisocial behavior problems. <i>Journal of Abnormal Child Psychology, 30</i> (3), 231-243.		H2	
286. Woodward, L. J., Fergusson, D. M., & Horwood, L. J. (2002). Deviant partner involvement and offending risk in early adulthood. <i>Journal of Child Psychology & Psychiatry, 43</i> (2), 177-190.	H3		

287. Woodward, M., Nursten, J., Williams, P., & Badger, D. (2000). Mental disorder and homicide: A review of epidemiological research. <i>Epidemiologia e Psichiatria Sociale</i> , 9(3), 171-189.			H6
288. Wormith, J. S., & Olver, M. E. (2002). Offender treatment attrition and its relationship with risk, responsivity and recidivism. <i>Criminal Justice & Behavior</i> , 29(4), 447-471.	R1		
289. Xie, L. (2000). Gender difference in mentally ill offenders: A nationwide Japanese study. <i>International Journal of Offender Therapy & Comparative Criminology</i> , 44(6), 714-724.		H6	
290. Yen, C., Yeh, M., Chen, C., & Chung, H. (2002). Predictive value of insight for suicide, violence, hospitalization and social adjustment for outpatients with schizophrenia: A prospective study. <i>Comprehensive Psychiatry</i> , 43(6), 443-447.	C1		
291. Young, J. L., Spitz, R. T., Hillbrand, M., & Daneri, G. (1999). Medication adherence failure in schizophrenia: A forensic review of rates, reasons, treatments, and prospects. <i>Journal of the American Academy of Psychiatry & the Law</i> , 27(3), 426-444.			C5/R4
292. Zanis, D. A., Mulvaney, F., Coviello, D., Alterman, A. I., Savitz, B., & Thompson, W. (2003). The effectiveness of early parole to substance abuse treatment facilities on 24-month criminal recidivism. <i>Journal of Drug Issues</i> , 33(1), 223-236.	C5/R4		

H1 Previous Violence

1. DeLisi, M. (2001). Extreme career criminals. *American Journal of Criminal Justice*, 25, 239-252.

→ Community Violence

Offenders ($N = 500$) who had been arrested 30 or more times were identified from official criminal files of nearly 26,000 suspects processed at one urban jail in the western United States during 1995-2000. Participants were mostly men (89%) and White (52%; 29% Hispanic; 12% Black; 6% American Indian; 1% Asian American). The average age was 40 years (range: 18-74 years). A subset of “extreme criminals” was identified among these 500 participants and comprised individuals who had been convicted of at least one murder ($n = 42$), one rape ($n = 80$), or one kidnapping ($n = 38$) charge. Extreme criminals were compared with the other chronic recidivists ($n = 370$) to determine whether there were differences in the numbers of: (1) arrests for violent crime; (2) arrests for property crime; (3) felony convictions, and (4) prison sentences. Offenders with multiple types of extreme crimes (e.g., convicted of both murder and rape) were excluded from the regression analyses (see below).

Chronic offenders who never committed an extreme crime had an average of 2.61 violent index arrests, whereas the murderers, rapists, and kidnappers averaged over six arrests for violent index offenses. No significant differences were found between the groups regarding the number of arrests for burglary, theft, auto theft, or arson. However, murderers ($M = 7.21$), rapists ($M = 6.45$), and kidnappers ($M = 6.26$) had significantly more felony convictions than chronic offenders ($M = 5.04$; $F = 5.96$, $p < .001$). Extreme offenders had amassed significantly more prison sentences compared to habitual offenders ($F = 8.13$, $p < .001$). Results of negative binomial regression analyses were consistent with the MANOVA results and indicated that extreme offenders accumulated significantly more violent index arrests compared to other habitual offenders. Regression analyses further indicated that being a murderer is predictive of felony conviction status (this finding was not observed among rapists or kidnappers though). Finally, murderers and kidnappers (but not rapists) accumulated significantly more prison sentences than other habitual offenders.

Although the generalizability of this study appears somewhat limited, the findings demonstrate that murderers, rapists and kidnappers amassed significantly more serious violent crime arrests, felony convictions, and imprisonments relative to other habitual offenders. However, it should be noted that time at risk does not appear to have been taken into account in the reported analyses.

2. Flannery, R.B.J., Stevens, V., Juliano, J., & Walker, A.P. (2000). Past violent and substance use disorder and subsequent violence towards others: Six year analysis of the assaulted staff action program (ASAP). *International Journal of Emergency Mental Health*, 2, 241-247.

→ Institutional and Community Violence

This six-year retrospective study evaluated the association between three patient assailant characteristics (history of violence, personal victimization, and substance use disorder) and recent physical assaults. The sample comprised 529 civil psychiatric inpatients and community-based patients who had committed an assault that subsequently was evaluated by the Assaultive Staff Action Program (ASAP) between April 1994 and April 2000. ASAP is a voluntary, crisis-intervention program for staff victims of psychiatric patient assaults. The program gathers information on the characteristics of the patients who commit an assault from chart review and staff interviews.

Four types of assaults were examined: (1) physical assaults were defined as unwanted contact with another person with intent to harm, including punching, kicking, slapping, biting, spitting, and throwing objects directly at staff; (2) sexual assaults were defined as unwanted sexual contacts and included rape, attempted rape, fondling, forced kissing, and exposing; (3) nonverbal intimidation included actions intended to threaten and/or frighten staff, such as pounding on the staff office door, random throwing of objects, and destruction of property; and (4) verbal threats were statements intended to frighten or to threaten staff, as well as threats against life and property, racial slurs and derogatory comments.

Data on all incidents to which ASAP responded during the period of study ($N = 706$) were coded from ASAP reports. Most (66%; $n = 465$) assaults were committed in an institution (34% community-based assaults). **Past histories of violence toward others and personal victimization were statistically significantly more frequently associated with subsequent assaults than were either violence toward others or victimization alone, ($\chi^2(2) = 8.05, p < .02$).**

3. Milton, J., Amin, S., Singh, S.P., Harrison, G., Jones, P., Croudace, T., Medley, I., & Brewin, J. (2001). Aggressive incidents in first-episode psychosis. *British Journal of Psychiatry*, 178, 433-440.

→ Community Aggression (not necessarily physical violence)

* Article summary also appears under Items H3, H4, and H10

This study examined acts of aggression in first-episode psychosis. The sample comprised 168 consecutively admitted patients (16-64 years old) with a psychotic illness making first contact with psychiatric services in Nottingham (UK) between 1 June 1992 and 31 May 1994. All participants met the criteria for psychosis in the Screening Schedule for Psychosis. The Schedules for Clinical Assessment in Neuropsychiatry (SCAN) interview was used to derive symptom ratings at baseline. When direct interviews were not possible, symptoms were rated

using the Item Group Checklist (IGC). Personality was assessed using the Personality Assessment Schedule (PAS) and clinical consensus Axis II diagnoses for ICD-10.

Follow-up assessments occurred between June 1995 and May 1997, as close as possible to three years after first contact. At that time, 143 interviews were completed with participants; data collection for the remainder of the participants was completed using clinical material. Informed consent to examine participants' records and to interview their informal carers was obtained.

Offending behavior (self-reported violence, previous arrests, convictions, and imprisonment for violence) was recorded from the Psychiatric and Personal History Schedule, follow-up assessments, psychiatric, community mental health team and general practitioner records, and legal reports where available. Severity of violence was classified by adapting the two-point scale from the MacArthur Community Violence Instrument wherein *serious aggression* includes weapon use or threat, sexual assault or any other violence with injury to a victim and *lesser aggression* included all other acts. Timing of aggression was categorized into three periods: Period A represented the period before onset of any symptoms, Period B represented the clinical 'best estimate' of the duration of untreated illness (DUI), and the end of period C was defined as 3 years after the date of contact with psychiatric services.

With reference to HCR-20 Item H1, there was over a five-fold increase in the risk for aggression (although not necessarily physically violent aggression) among patients with previous violent convictions (OR = 5.6, 95% CI = 1.8 – 16.9, $p < .001$)

With reference to HCR-20 Item H3, the risk for aggression (although not necessarily physically violent aggression) was twice as high among patients who were single (OR = 2.2, 95% CI = 1.1 – 4.6, $p < .05$).

With reference to HCR-20 Item H4, there was almost a four-fold increase in the risk for aggression (although not necessarily physically violent aggression) among patients who were unemployed (OR = 3.7, 95% CI = 1.8 – 7.7, $p < .001$).

With reference to HCR-20 Item H10, high rates of absconding from inpatient care was characteristic of participants who exhibited aggression (although not necessarily physically violent aggression) after service contact (34.3%; OR = 16.6, 95% CI = 4.9-55.9).

4. Walsh, E., Gilvarry, C., Samele, C., Harvey, K., Manley, C., Tattan, T., Tyrer, P., Creed, F., Murray, R., & Fahy, T. (2004). Predicting violence in schizophrenia: A prospective study. *Schizophrenia research*, 67, 247-252.

→ Community Violence

*Article summary also appears under Items H5 and C3 (Contradictory Findings)

Risk factors for assault were investigated among 271 patients with schizophrenia (diagnosed according to Research Diagnostic Criteria). Participants were recruited as part of the UK700 Case Management Study prior to discharge from the hospital or in the community. All

participants had been hospitalized for psychotic symptoms at least twice and none had a primary diagnosis of substance abuse. Participants mostly were men (65%) and White (42%; 35% African-Caribbean; 22% 'other'). The mean age was 38 years ($SD = 12$ years). The average length of illness was 11 years ($SD = 9$ years).

Psychiatrists and research psychologists interviewed participants at baseline and at a 2-year follow-up. The following measures were administered at baseline: the Operational Criteria Checklist for Psychotic Illness to produce diagnoses; the World Health Organization Life Chart was used to assess clinical history over the two years before study entry; the Scale for Assessment of Negative Symptoms; the National Adult Reading Test; the Lancashire Quality of Life Profile; and the Personality Assessment Schedule. Information about alcohol and drug abuse was elicited via self-report. Alcohol abuse was considered present if more than 2 units of alcohol per day were consumed by women and 3 units per day by men. Illegal drug use was coded as none, one, and two or more illegal drugs taken in the past year. Criminal records, including violent and non-violent crimes, were obtained for all subjects from the British Home office.

The criterion variable was actual physical contact with another person regardless of severity or resulting injury. Three data sources were combined to produce a binary outcome measure for each patient: self-report, case manager report, and case records. Scoring positive on any of these indicated a positive score for assault.

Outcome on assault was available for all patients from at least one data source. Over 2 years, 69 (25%) participants physically assaulted another person. In addition, 40 (14%) participants reported violent behavior, 33 (12%) participants were identified as being violent in their case notes, and 36 (13%) participants were reported violent by their case manager.

Logistic regression analyses that compared those who committed assault during the follow-up to those who did not revealed 4 of the 12 sociodemographic variables (under 40 years of age, receipt of special education, having committed assault in the last 2 years, having previous violent and nonviolent convictions) and 3 of the 10 clinical variables (younger age at onset of illness, having taken one or more illegal drugs during the previous year, and alcohol abuse) to discriminate significantly the assaulters and non-assaulters. Of these seven variables found to be univariately significant, four remained significant in a stepwise multivariate analysis that started with all univariately significant variables: assault over the past 2 years, a history of violent criminal convictions, receipt of special education, and significantly lower NART scores. **Of relevance to HCR-20 Item H1, the odds ratio (adjusted for the other 3 significant variables just mentioned) of assault over the last 2 years was 2.33 (95% CI = 1.17 – 4.61, $p < .01$) and the odds ratio (adjusted) for history of violent conviction was 2.02 (95% CI = 1.04 – 3.87, $p < .05$).**

Of relevance to HCR-20 Item H5, the odds ratio (adjusted) of alcohol (greater than or less than 2-3 units per day) was 3.55 (95% CI = 1.24 – 10.20, $p < .01$); this was the largest odds ratio in the multivariate model.

5. Watts, D., Leese, M., Thomas, S., Atakan, Z., & Wykes, T. (2003). The prediction of violence in acute psychiatric units. *International Journal of Forensic Mental Health*, 2, 173-180.

→ Institutional Violence

Violence within two weeks of admission to two civil psychiatric units was predicted prospectively among 100 consecutive admissions (16 women; 84 men). Most (68%) participants had an ICD-10 diagnosis of schizophrenia (23% affective disorder). At admission, a nurse rated their likelihood of being violent during the next two weeks using a 10-point scale (0 = *no risk*; 10 = *maximum risk*). The Expanded Brief Psychiatric Rating Scale (BRPSE) and the Social Behavior Scale (SBS) were completed to assess psychopathology and observed behavior problems. The Nurses Observation Scale for Inpatient Evaluation (NOSIE-30) was completed 72 hours after admission to rate observed behavior problems. Violent and aggressive behavior in the institutions was recorded using the Overt Aggression Scale (OAS), which was adapted to be completed once every 24 hours and to record the total number of violent incidents, the most severe incident, clinical interventions, and whether any of the incidents had the potential to escalate in severity. Two categories of violence were examined: (1) *Actual assault* was defined as any assault regardless of whether physical injury resulted; (2) *Aggressive behavior* included clear threats of violence, setting fires, throwing objects dangerously, and all categories of physical violence. The Modified Overt Aggression Scale (MOAS) was used to record pre-admission violence. The OAS and MOAS were scored similarly with the exception that weightings were added to violence incidents of greater severity that occurred during the 24 hours prior to admission for the MOAS. Thirty-two participants committed 'actual assault' and 73 participants engaged in 'aggressive behavior.'

Predictor variables for univariate analyses were selected *a priori* on clinical grounds and included BPRSE total score and symptom cluster scores (agitation-excitement, withdrawal-retardation, anxious-depression, hostile-suspiciousness and thinking disturbance); ICD-10 diagnosis; ethnicity; level of family support; gender; lifetime history MOAS score; marital status; total MOAS score; NOSIE total, positive factor, and negative factor scores; SBS total score and social mixing score; and severity of drug and alcohol use. Individual variables that had significant univariate correlations with either of the two dependent variables were included in two logistic regression models using backward stepwise methods.

The criterion variable in the first model was actual assault. Variables that were univariately significantly associated with actual assault were age, ethnicity, hostile-suspiciousness, withdrawal-retardation, total BPRS score, SBS social mixing score, total NOSIE negative factors score and severity of drug use. The AUC value was 0.84. The largest odds ratio in the model (adjusted for all other risk factors in the model) was for Hostile-Suspiciousness BPRSE symptom cluster score: OR = 1.80 (95% CI = 1.15 – 2.81, $p = .01$). **The second largest odds ratio in the model (adjusted for all other risk factors in the model) was for total MOAS score: OR = 1.12 (95% CI = 1.03 – 1.22, $p = .01$).**

The criterion variable in the second model was aggressive behavior. Variables that were univariately significantly associated with this outcome were total MOAS score, age, anxious-depression, withdrawal-retardation, total NOSIE positive symptoms score, and SBS social

mixing total score. The AUC value was 0.77. The largest odds ratio in the model (adjusted for all other risk factors in the model) was for Withdrawal-Retardation BPRSE symptom cluster score: OR = 1.99 (95% CI = .87 – 4.54, $p = .10$). **The second largest odds ratio in the model (adjusted for all other risk factors in the model) was for total MOAS score: OR = 1.08 (95% CI = 1.01 – 1.16, $p = .04$).**

Recent pre-admission violence was a significant predictor of actual and of future aggressive behavior (although in neither model was it the sole or the most powerful predictor).

Additional Relevant Sources Supportive of H1 – Abstracts Provided

1. Hanson, R. K., & Bussière, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology*, *66*, 348-362.

Evidence from 61 follow-up studies was examined to identify the factors most strongly related to recidivism among sexual offenders. On average, the sexual offense recidivism rate was low (13.4%; $n = 23,393$). There were, however, subgroups of offenders who recidivated at high rates. Sexual offense recidivism was best predicted by measures of sexual deviancy (e.g., deviant sexual preferences, prior sexual offenses) and, to a lesser extent, by general criminological factors (e.g., age, total prior offenses). Those offenders who failed to complete treatment were at higher risk for reoffending than those who completed treatment. The predictors of nonsexual violent recidivism and general (any) recidivism were similar to those predictors found among nonsexual criminals (e.g., prior violent offenses, age, juvenile delinquency). Our results suggest that applied risk assessments of sexual offenders should consider separately the offender's risk for sexual and nonsexual recidivism.

2. Steadman, H.J., Mulvey, E.P., Monahan, J., Robbins, P.C., Appelbaum, P.S., Grisso, T., Roth, L.H. & Silver, E. (1998). Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods. *Archives of General Psychiatry*, *55*, 393-401.

Examined the prevalence of community violence in a sample of 18-40 yr olds discharged from acute psychiatric facilities at 3 sites. At 1 site, a comparison group of other neighborhood residents was also assessed. 1,136 male and female patients with mental disorders were monitored for violence to others every 10 wks during their 1st yr after discharge. Prevalence rates for violence were derived from patient self report, reports of collateral informants, and official agency records. The comparison group of 519 people living in the neighborhoods in which the patients resided after hospital discharge were interviewed once about violence in the past 10 wks. Results show that the patient sample exhibited significantly higher rates of alcohol or drug abuse symptoms than the community group during the 1st 4 10-wk follow-up periods. In terms of violence and other aggressive acts, there were significant main effects for these symptoms. When the sample was disaggregated into those with and without Michigan Alcoholism Screening Test and Drug Abuse Screening Test symptoms, a significant effect of patient status was found for those Ss with symptoms.

3. Tardiff, K., Marzuk, P. M., Leon, A. C., & Portera, L. (1997). A prospective study of violence by psychiatric patients after hospital discharge. *Psychiatric Services*, *48*, 678-681.

Assessed the frequency of violence by patients from a psychiatric hospital and identified characteristics of patients with an increased risk of violence after discharge. 763 patients (aged 18-59 yrs) in a private university psychiatric hospital provided self-reports of past violence, and violence while in the hospital was assessed by routine nurse ratings. Ss were telephoned 2 wks after discharge to assess violence since discharge. 16 of 430 Ss who were interviewed by telephone 2 wks after discharge reported violence against persons since their discharge. Ss who were violent 1 mo before admission were 9 times more likely to be violent in the 2 wks after discharge, compared with Ss who were not violent before admission. Ss with a personality

disorder were 4 times more likely than Ss without a personality disorder to be violent after discharge. The targets of violence were often family members or other intimates and often the same persons attacked before hospitalization. Ss who were violent just before admission were more likely to be violent after discharge and to attack the same persons they had attacked in the past. The authors suggest that clinicians should routinely evaluate past violence and work with the patient and potential targets of violence to prevent future violence.

Additional Resources Supportive of H1 but with Nonviolent Criterion – Abstracts Provided

1. Brekke, J. S., Prindle, C., Bae, S. W., & Long, J. D. (2001). Risks for individuals with schizophrenia who are living in the community. *Psychiatric Services, 52*, 1358-1366.

Examined the incidence and predictors of police contact, criminal charges, and victimization among noninstitutionalized individuals with schizophrenia living in the community. A total of 172 Ss with schizophrenia or schizoaffective disorder were recruited from community-based programs in urban Los Angeles between 1989 and 1991 and were monitored for 3 yrs. At baseline, all participants were housed and did not have co-occurring substance use disorders. Face-to-face interviews were conducted every 6 mo. 83 Ss (48%) had contact with the police during the study period. A small percentage of the contacts involved aggressive behavior against property or persons. Being younger, having had more address changes at baseline, and having a history of arrest and assault were significant predictors of police contact. 37 Ss (22%) reported that charges had been filed against them. Poorer social functioning, more address changes, fewer days of taking medication at baseline, and a history of arrest and assault were significant predictors of criminal charges. 65 Ss (38%) reported having been the victim of a crime during the 3 yrs, 91% of which was violent. Having more severe clinical symptoms and more substance use at baseline were significant predictors of victimization.

2. Buchanan, A., Taylor, P., & Gunn, J. (2004). Criminal conviction after discharge from special (high security) hospital: The circumstances of early conviction on a serious charge. *Psychology, Crime & Law, 10*, 5-19.

Forty patients who left the three high security ("special") hospitals for England and Wales between 1987 and 1991 went on to be convicted of a serious offense by 31 January 1993. The aims of the study were to describe their characteristics, their psychiatric care and the circumstances of the offenses. A comparison group, matched for time at risk but unmatched on other variables, was generated by identifying, for each subject, the next patient to be discharged who had not re-offended by 31 January 1993. Eight of the 40 who went on to be convicted of a serious offense left special hospital with no psychiatric follow-up and for a further five only informal arrangements were made. Of the 27 who left special hospital under supervision, 11 dropped out of that supervision in the period (mean 1.7 years) between discharge and offense. [Compared with patients discharged at the same time and not convicted the 40 were significantly younger, less likely to have been educated in ordinary schools, more likely to have a history of alcohol withdrawal and had more criminal convictions. In special hospital the 40 were more likely to have been detained under the legal category of psychopathic disorder, had shorter admissions and their discharge had more often been disputed by their clinical team.

3. Kunz, M., Yates, K. F., Czobor, P., Rabinowitz, S., Lindenmayer, J., & Volavka, J. (2004). Course of patients with histories of aggression and crime after discharge from a cognitive-behavioral program. *Psychiatric Services, 55*, 654-659.

Objective: Patients exhibiting aggressive or criminal behavior present a challenge to treaters and caregivers. After discharge from an inpatient facility, such patients are at high risk of rehospitalization and re-arrest. A long-term behaviorally based cognitive skills program was

developed and administered to a group of such high-risk inpatients. The authors report the results of a postdischarge follow-up of this group. Methods: After patients entered the inpatient treatment program, their psychiatric and criminal histories were recorded, and a battery of psychological measures were administered, including IQ tests and the Hare Psychopathy Checklist. After discharge, multiple sources were used to obtain information about patients' outcomes. Results: Eighty-five patients were followed for between six months and two years after discharge. Thirty-three of these patients (39 percent) remained stable in the community, 35 (42 percent) were rehospitalized, and 17 (20 percent) were arrested. Several variables that were ascertained before discharge predicted rehospitalization or arrest rates: comorbid antisocial personality disorder, higher score on the Psychopathy Checklist, history of arrests for violent crimes, and history of a learning disability. In addition, patients who developed substance use problems or did not adhere to medication treatment after discharge were more likely to be rehospitalized or arrested. Conclusions: Arrest rates were low compared with those observed in studies with similar populations. Although this outcome may be attributable to the treatment program, this naturalistic study could not prove that. The predictors of poor outcome may be used to develop a follow-up treatment program that focuses more resources on patients who are at the highest risk.

4. Peersen, M., Sigurdsson, J. F., Gudjonsson, G. H., & Gretarsson, S. J. (2004). Predicting re-offending: A 5-year prospective study of icelandic prison inmates. *Psychology, Crime & Law, 10*, 197-204.

The study investigates differences in psychological, offending history, and substance use variables between desisters and recidivists among 461 Icelandic prison inmates, who were followed up 5 years after their release from prison. Almost half (48%) of the sample were re-convicted during the 5-year period and had received one or more prison sentences. Recidivists scored significantly lower than desisters on the Gough Socialization Scale, and desisters scored significantly higher on Self-Deception and Other-Deception Questionnaires. Recidivists had more extensive offending history, and had reported more substance use than desisters. A discriminant function analysis was performed in order to investigate which variables discriminated best between desisters and recidivists. The results indicate that offending history variables and low other-deception, discriminated best between the two groups. The results emphasize the importance of previous criminal history and antisocial personality traits as risk factors and impression management or social desirability as a protective factor.

6. Ulmer, J. T. (2001). Intermediate sanctions: A comparative analysis of the probability and severity of recidivism. *Sociological Inquiry, 71*, 164-193.

This paper uses data from a sample of 528 adult felony offenders to compare the relative probability of rearrest, the severity of rearrest, and the likelihood of probation revocation for offenders with a sentence of incarceration, work release, house arrest, and traditional probation--or a combination of these sentences. Consistent with previous research, prior record, gender, offense type, and education were significantly related to the probability and severity of rearrest. Furthermore, no matter which other sanction it was paired with, house arrest was associated with reduced chances of rearrest and lower rearrest severity. The influence of one of these sanction combinations was gender-specific: incarceration followed by house arrest was associated with

reduced odds of rearrest for women but not for men. However, house arrest was associated with the considerably increased likelihood of probation revocation. In addition, these effects remain after controlling for potential selection bias stemming from the sentencing decision. This paper concludes by discussing the theoretical and correctional implications of these findings and directions for future research.

Narrative Review for H1 Material

1. Nagin, D., & Paternoster, R. (2000). Population heterogeneity and state dependence: State of the evidence and directions for future research. *Journal of Quantitative Criminology*, 16, 117-144.

Discusses theoretical work in criminology to illustrate how population heterogeneity and state dependence processes are compatible with or have incorporated respective explanations. Extant empirical research is reviewed and conclusions are drawn about the relevance of state dependence and heterogeneity in explaining continuity and change in criminal offending. Literature is reviewed that has investigated the plausibility of these 2 processes.

H2 Young Age at First Violent Incident

1. Fulwiler, C. & Ruthazer, R. (1999). Premorbid risk factors for violence in adult mental illness. *Comprehensive Psychiatry*, 40, 96-100.

→ Community Violence

Patients ($N = 64$) with chronic mental illness who were referred to a community treatment team over a two-year period were assessed retrospectively for a history of conduct disorder and substance abuse. Diagnostic inclusion criteria included schizophrenia, bipolar disorder, schizoaffective disorder, or major depressive disorder. Most participants were men (72%) and White (51%). The mean age of the sample was 42.4 years ($SD = 12.3$). The most common DSM-IV diagnoses were schizophrenia (39%) and bipolar disorder (28%). The study design was a cohort analysis comparing participants with and without a history of violence. Violence was operationalized as physical or sexual battery against another person. Behaviors not defined as violence included acts of self-defense, threats of violence, assault without physical contact, and inpatient assaults. For a violent incident to be considered for the present study, the incident must have occurred after the age of 18 and after the participant received a psychiatric diagnosis (or, alternatively, the incident must have led to his or her first psychiatric diagnosis). Information about the participant's violence history was obtained via self-report, a review of all available psychiatric records, and an interview with a relative when possible. Arrest records were reviewed in some cases.

Almost half (47%) of the sample had committed at least one violent act in the community since the age of 18. The most common acts were assault and battery, followed by assault and battery with a weapon, rape and attempted rape. **Of relevance to HCR-20 item H2, results demonstrated that violent participants were significantly more likely to meet the criteria for childhood conduct disorder than nonviolent participants (χ^2 value not reported, $p = .002$). There was no interaction effect between conduct disorder and gender ($\chi^2 = .9$, $p = .35$). Logistic regression analyses indicated that a significant predictor of violence was a history of conduct disorder (OR = 9.7, 95% CI = 2.3 - 39.8; ROC = .71). When controlling for gender, the odds ratio for violence decreased, but not significantly (OR = 5.3, 95% CI = 1.1 - 24.0; ROC = .79). Using conduct disorder as a predictor and controlling for gender and substance abuse before age 15 yielded an odds ratio for violence of 9.6 (95% CI = 2.0 - 45.7; ROC = .83). In a model with the predictor of substance abuse before age 15 in which gender and conduct disorder were controlled, an odds ratio of 3.6 was generated (95% CI = 0.9 - 14.3; ROC = .83).**

2. Moffit, T.E., Caspi, A., Harrington, H. & Milne, B.J. (2002). Males on the life-course-persistent and adolescence-limited antisocial pathways: Follow-up at age 26 years. *Development & Psychopathology*, 14, 179-207.

→ Community Violence

The present study reports on outcomes of 26-year-old men defined previously in the Dunedin longitudinal study as exhibiting childhood-onset versus adolescent-onset antisocial behavior and

who were indistinguishable on delinquent offending in adolescence. The cohort consisted of 1037 children (52% male, 48% female). The sample was divided into five groups: (1) life-course-persistent (LCP) members met specified criteria for extreme antisocial behavior across both childhood and adolescence; (2) adolescence-limited (AL) members met the criteria for extreme antisocial behavior as adolescents, but were not extremely antisocial as children; (3) recovery members were participants who met the criteria for extreme antisocial behavior in childhood, but not in adolescence; (4) abstainers were members who did not engage in any antisocial behavior from age 5 to 18 years; and (5) unclassified members included individuals who did not meet the criteria for any of the other groups.

Previous reports on these groups in childhood and adolescence showed that childhood-onset delinquents – but not adolescent-onset delinquents - demonstrated a variety of maladjustments, including neurocognitive problems, undercontrolled temperament, severe hyperactivity, psychopathic personality traits. **In addition, and of relevance to HCR-20 Item H2, childhood-onset delinquents displayed more violent behavior than did adolescent-onset delinquents.**

The present study reported on the sub-sample of 477 men who had all of the measures required for classifying behavioral histories. The authors made two general types of comparisons. First, the LCP and AL groups each were compared to the unclassified group. Second, comparisons were made between the LCP and AL groups. Results of multivariate and univariate analyses indicated that both the LCP group and the AL group offended more often and were convicted more often compared to the unclassified group. The LCP and AL groups also had significantly more violent and drug related offenses than the unclassified group.

LCP men offended more frequently and seriously than AL men. LCP men reported a significantly higher mean number of convictions in adult court (6.9, $SD = 11.5$) than the AL men (3.5, $SD = 10.8$), $p = .06$. The LCP men accounted for more than twice their share of all convictions: (OR of the LCP-AL difference = 2.2, 95% CI = 1.1 - 4.5). **LCP men had a higher mean number of violent convictions (.79, $SD = 2.2$) than AL men (.15, $SD = 1.3$), $p = .001$. The odds ratio that corresponds to this difference is 3.7 (95% CI = 1.6-8.1). Although the present study examined delinquent behaviors in childhood, rather than physical violence, the findings nonetheless are relevant to HCR-20 item H2 in that they support the notion that antisocial behavior at a relatively earlier age is related to perpetrating violent crime as an adult.**

3. Piquero, A.R. & Chung, H.L. (2001). On the relationship between gender, early onset, and the seriousness of offending. *Journal of Criminal Justice*, 29, 189-206.

→ Community General Criminality

The present sample comprised individuals participating in the Philadelphia Collaborative Perinatal Project (CPP). Participants were 220 African Americans (151 boys, 69 girls), who had incurred at least one police contact by age eighteen. The age of onset was defined as the age at which the child had his or her first official police contact for an offense that resulted in an arrest or remedial disposition with the Philadelphia City Police Department. Participants whose first

contact was prior to age 14 were classified as “early onset” whereas participants whose first contact was after age 14 were classified as “late onset.” Seriousness of offending was measured by a summary seriousness score, which is a quantitative measure of the amount of social harm inflicted on the community. It is based on numerical weights that are assigned to different components of an offense (e.g., level of injury, amount of property theft and/or damage, victim intimidation, weapons used, etc.).

The earliest age of onset in the sample was eight years of age. The mean summary seriousness score ($M = 34.07$, SD not reported) for the five individuals with this age of onset was significantly higher compared to scores of any other onset age group. Similarly, the mean summary seriousness score was significantly higher for the 79 participants in the early onset group ($M = 21.00$, SD not reported) than for the 141 participants in the late onset group ($M = 9.43$; SD not reported, $t = 3.04$, $p < .05$).

No significant difference was found between onset age grouping and gender. However, significantly different mean summary of seriousness scores were observed for men ($M = 16.57$) and women ($M = 7.04$; $t = 3.67$, $p < .05$). Among men, the relation between early age of onset and seriousness of offending remained significant even when other relevant predictor variables (e.g., SES, weak family structure) were introduced. However, this relation disappeared for the women in the same type of analysis.

Results of the present study are relevant to HCR-20 item H2 in that they provide evidence that both boys and girls who began offending early in life (albeit not necessarily violently) were more likely to engage in serious offending when compared to their late onset counterparts.

4. Tengstrom, A., Hodgins, S., & Kullgren, G. (2001). Men with schizophrenia who behave violently: The usefulness of an early-versus late-start offender typology. *Schizophrenia Bulletin*, 27, 205-218.

→ Community Violence

* Article summary also appears under Item H6

The sample ($N = 272$) comprised all men in Sweden who (1) underwent a pretrial psychiatric assessment for the first time between 1988 and 1995 subsequent to being accused of a violent offense; (2) had an ICD-9 diagnosis of schizophrenia; and (3) subsequently were convicted of the offense. The proportion of participants with different offenses was as follows: murder/manslaughter (13%), assaults (52%), unlawful threats (13%), armed robbery (8%), kidnapping (2%), breaking and entering (2%), aggravated arson (1%) and molestation (1%). Data were collected retrospectively from reports of pretrial psychiatric assessments. Raters who were blind to participants’ classifications on the early- vs. late-start categorization coded information from psychiatric files. Data also were collected from the National Police Register, the Hospital Discharge Register of the National Board of Health and Welfare, the National Causes of Death Register, and the court. DSM-IV diagnoses of conduct disorder (CD) and antisocial personality disorder (ASPD) were based on file information. For the diagnosis of CD, ratings were made on a three point scale (no signs, some signs, or fulfills criteria). Definitional

criteria for being classified as an *early starter* was first crime conviction before the age of 18 ($n = 73$); *late starters* comprised individuals convicted of their first crime after their 18th birthday ($n = 199$).

Two levels of violence severity were examined. First, *violent crimes* included murder/manslaughter, assault, unlawful threats, sexual assault, armed robbery, aggravated arson, kidnapping, breaking and entering, and molestation. Second, *severe violent crimes* were restricted to murder/manslaughter, assault, rape, and armed robbery. The sample was followed after absolute discharge from forensic psychiatric treatment, after release from prison, or from the start of probation until the end of 1998.

The average age at the index crime differed significantly for early and late starters (early starters (ES): $M = 28.48$, $SD = 7.29$; late starters (LS): $M = 34.64$, $SD = 10.27$, $t(272) = 4.70$, $p < .0001$). As a result, the effect of age was controlled in subsequent analyses. **Of relevance to HCR-20 item H2, compared to late-start offenders, early-start offenders on average had been convicted of more crimes (ES: $M = 23.25$, $SD = 23.69$; LS: $M = 4.38$, $SD = 7.66$; $t(270) = 12.96$, $p < 0.001$), more violent crimes (ES: $M = 4.07$, $SD = 5.89$; LS: $M = 1.49$, $SD = 2.73$; $t(270) = 5.58$, $p < .001$), and more severe violent crimes (ES: $M = 1.74$, $SD = 2.04$; LS: $M = .67$, $SD = 1.53$; $t(270) = 5.62$, $p < .001$). Importantly, early starters were significantly younger ($M = 19.51$ years, $SD = 4.76$ years) than late starters ($M = 29.24$ years, $SD = 8.24$ years; $t(103) = 7.18$, $p < .001$) when they committed their first severe violent crime. This also was the case for age at first violent crime (ES: $M = 19.05$, $SD = 4.44$; LS: $M = 28.85$, $SD = 7.83$; $t(141) = 8.51$, $p < .001$).**

During the follow up period, there was a tendency for more early-start than late-start offenders to recidivate. When different follow-up times were controlled for, the survival functions of the early starters and late starters differed significantly with respect to a reconviction for any offense during follow-up (Kaplan-Meier Log Rank = 6.53, $df = 1$, $p < 0.01$). **However, for violence recidivism and for severe violence recidivism, no differences were found between early and late start offenders (Kaplan-Meier Log Rank = .73, $df = 1$, $p = 0.39$). When severely violent recidivism was considered, no group differences were observed (Kaplan-Meier Log Rank = .98, $df = 1$, $p = .32$).**

Additional Relevant Sources Supportive of H2 – Abstracts Provided

1. Ge, X., Donnellan, M. B., & Wenk, E. (2003). Differences in personality and patterns of recidivism between early starters and other serious male offenders. *Journal of the American Academy of Psychiatry & the Law, 31*, 68-77.

In this study, the differences in personality and patterns of recidivism were compared between individuals with an early incidence of offending ("early starters") and their later-starting counterparts ("later starters"). Results indicated that early starters were significantly different from later starters in several personality characteristics, as measured by the California Personality Inventory (CPI) and the Minnesota Multiphasic Personality Inventory (MMPI). Specifically, early starters scored lower on the responsibility and socialization scales of the CPI and higher on the paranoia, schizophrenia, and hypomania scales of the MMPI. Moreover, results indicated that early starters were at a significantly higher risk for recidivism than later starters, both at a 15-month and a 20-year follow-up.

2. Kratzer, L., & Hodgins, S. (1999). A typology of offenders: A test of moffitt's theory among males and females from childhood to age 30. *Criminal Behavior & Mental Health, 9*(1), 57-73.

Tested T. E. Moffitt's theory regarding age-related patterns of male offending in a Swedish cohort of 7,101 males and 6,751 females followed from childhood to age 30 yrs. Four groups of offenders were identified: stable early-starters (ES), adolescence-limited (AL), adult-starters (AS), and discontinuous offenders. Information on childhood problems and patterns of offending was prospectively collected. Consistent with Moffitt's theory, ES offenders committed more crimes and a greater diversity of crimes than other offender groups. Childhood problems and low global scores of intelligence distinguished ES offenders from AL and AS offenders and non-offenders. Moffitt's typology of offenders appears to better describe male than female offenders. For example, among females, AS and not ES offenders were responsible for the largest proportion of crimes, and childhood variables played a role in AL offending. Inconsistent with Moffitt's theory, ES males and females were convicted of more offenses than AL offenders during adolescence, and ES males obtained lower scores on numeric and spatial as well as verbal subtests of intelligence.

3. Woodward, L. J., Fergusson, D. M., & Horwood, L. J. (2002). Romantic relationships of young people with childhood and adolescent onset antisocial behavior problems. *Journal of Abnormal Child Psychology, 30*, 231-243.

Using prospective longitudinal data from the Christchurch Health and Development Study, this paper examines the extent to which early onset, life course persistent and adolescent limited antisocial behavior (AB) problems place young people at age 21 at risk of violent and unsatisfactory romantic relationships in early adulthood. Results revealed the presence of clear linear associations between the developmental timing of AB and later partnership risks, with these risks including partner violence perpetration and victimization, interpartner conflict, and increased ambivalence about the relationship. Young people with childhood onset AB problems reported higher rates of partnership difficulties than young people with adolescent limited AB problems, while those with adolescent limited AB reported higher levels of partnership

difficulties than young people without a history of AB problems. These associations persisted even after extensive control for a range of social, family, and individual factors that were correlated with the timing of antisocial behavior. Results highlight the importance of distinguishing between early and late onset AB, and provide further support for existing life course models of the development of AB problems in children and adolescents.

Additional Resources Supportive of H2 but with Nonviolent Criterion – Abstracts Provided

1. Cooke, D. J., & Michie, C. (1998). Predicting recidivism in a Scottish prison sample. *Psychology, Crime & Law*, 4, 169-211.

Describes a prospective study of recidivism based on a sample of 308 Scottish prisoners who were interviewed between November 1989 and June 1991. The authors outline the relevance that recidivism studies has for the criminal justice system. The general difficulties of defining and measuring reoffending are discussed and the particular difficulties of doing recidivism studies using Scottish data sources are also outlined. Two forms of recidivism are considered: reconviction and reimprisonment. The authors describe 3 forms of analyses: (1) survival curves are plotted; (2) simple univariate comparisons between those who recidivate and those who do not are made; and (3) multivariate prediction equations are developed. In conclusion, a set of useful predictor variables are identified. Key variables extracted from criminal record data as well as statistical methods used for logistic regression analyses are appended.

2. Peersen, M., Sigurdsson, J. F., Gudjonsson, G. H., & Gretarsson, S. J. (2004). Predicting re-offending: A 5-year prospective study of Icelandic prison inmates. *Psychology, Crime & Law*, 10, 197-204.

The study investigates differences in psychological, offending history, and substance use variables between desisters and recidivists among 461 Icelandic prison inmates, who were followed up 5 years after their release from prison. Almost half (48%) of the sample were re-convicted during the 5-year period and had received one or more prison sentences. Recidivists scored significantly lower than desisters on the Gough Socialization Scale, and desisters scored significantly higher on Self-Deception and Other-Deception Questionnaires. Recidivists had more extensive offending history, and had reported more substance use than desisters. A discriminant function analysis was performed in order to investigate which variables discriminated best between desisters and recidivists. The results indicate that offending history variables and low other-deception, discriminated best between the two groups. The results emphasize the importance of previous criminal history and antisocial personality traits as risk factors and impression management or social desirability as a protective factor.

H3 Relationship Instability

1. Laub, J.H., Nagin, D.S., & Sampson, R.J. (1998). Trajectories of change in criminal offending: Good marriage and the desistance process. *American Sociological Review*, 63, 225-238.

→ Community General Criminality

This study investigated the hypothesis that investment in social relationships facilitates desistance from crime. The authors reanalyzed data (Glueck & Glueck, 1950, 1968) on the criminal histories of 500 delinquent boys who were followed into adulthood. Data collection was carried out using a multi-method strategy over 25 years, starting at age 14 (on average), with follow-up sessions at 25 and 32 years old. Adult social bonds were measured during the age-32 interview. Attachment to spouse was a standardized composite scale derived from interview data that described the general conjugal relationship during the follow-up period plus a measure of the cohesiveness of the family unit. In terms of adult desistance, the authors viewed desistance as a gradual change. They anticipated that individuals who enter early into a marriage that subsequently evolves into a strong attachment (referred to as an “ex-post good marriage”) will desist the soonest. Two predictions on gradual change were tested: (1) individuals in ex-post good marriages will desist from crime the soonest, and (2) as a result of the growing investment in ex-post good marriages, the magnitude of the preventive effect of the marital bond will grow over time. This model emphasizes that the preventive effect emanates from *the quality of the marriage bond, rather than from the existence of marriage itself*. **Poisson regression analyses of arrest rate on the timing and quality of marriage suggested that early marriages characterized by social cohesiveness led to a growing preventive effect. Further, the findings suggested that the effect of a good marriage took time to appear, and that it grew slowly over time until it inhibited crime.**

2. Milton, J., Amin, S., Singh, S.P., Harrison, G., Jones, P., Croudace, T., Medley, I., & Brewin, J. (2001). Aggressive incidents in first-episode psychosis. *British Journal of Psychiatry*, 178, 433-440.

→ Community Aggression (not necessarily physical violence)

* Article summary also appears under Items H1, H4 and H10

This study examined acts of aggression in first-episode psychosis. The sample comprised 168 consecutively admitted patients (16-64 years old) with a psychotic illness making first contact with psychiatric services in Nottingham (UK) between 1 June 1992 and 31 May 1994. All participants met the criteria for psychosis in the Screening Schedule for Psychosis. The Schedules for Clinical Assessment in Neuropsychiatry (SCAN) interview was used to derive symptom ratings at baseline. When direct interviews were not possible, symptoms were rated using the Item Group Checklist (IGC). Personality was assessed using the Personality Assessment Schedule (PAS) and clinical consensus Axis II diagnoses for ICD-10.

Follow-up assessments occurred between June 1995 and May 1997, as close as possible to three years after first contact. At that time, 143 interviews were completed with participants; data collection for the remainder of the participants was completed using clinical material. Informed consent to examine participants' records and to interview their informal carers was obtained.

Offending behavior (self-reported violence, previous arrests, convictions, and imprisonment for violence) was recorded from the Psychiatric and Personal History Schedule, follow-up assessments, psychiatric, community mental health team and general practitioner records, and legal reports where available. Severity of violence was classified by adapting the two-point scale from the MacArthur Community Violence Instrument wherein *serious aggression* includes weapon use or threat, sexual assault or any other violence with injury to a victim and *lesser aggression* included all other acts. Timing of aggression was categorized into three periods: Period A represented the period before onset of any symptoms, Period B represented the clinical 'best estimate' of the duration of untreated illness (DUI), and the end of period C was defined as 3 years after the date of contact with psychiatric services.

With reference to HCR-20 Item H1, there was over a five-fold increase in the risk for aggression (although not necessarily physically violent aggression) among patients with previous violent convictions (OR = 5.6, 95% CI = 1.8 – 16.9, $p < .001$)

With reference to HCR-20 Item H3, the risk for aggression (although not necessarily physically violent aggression) was twice as high among patients who were single (OR = 2.2, 95% CI = 1.1 – 4.6, $p < .05$).

With reference to HCR-20 Item H4, there was almost a four-fold increase in the risk for aggression (although not necessarily physically violent aggression) among patients who were unemployed (OR = 3.7, 95% CI = 1.8 – 7.7, $p < .001$).

With reference to HCR-20 Item H10, high rates of absconding from inpatient care was characteristic of participants who exhibited aggression (although not necessarily physically violent aggression) after service contact (34.3%; OR = 16.6, 95% CI = 4.9 - 55.9).

3. Wessely, S. (1998). The Camberwell study of crime and schizophrenia. *Social Psychiatry & Psychiatric Epidemiology*, 33, S24-S28.

→ Community General Criminality

*Article summary also appears under Items H4, H5, and H6

In this population-based study of an incident cohort, participants ($N = 538$) with an ICD-9 diagnosis of schizophrenia or related disorders were identified from a cumulative case register in operation between 1964 and 1984 that records all contacts with mental health services and/or professionals (i.e., the Camberwell Psychiatric Case Register). Controls were chosen from the same case register as the cases and were matched by gender, age band, and year in which s/he joined the register. That is, cases were compared not with the general population, but with those with other mental disorders but excluding psychosis.

Records were obtained from various sources and included details of all hospital admissions and prison sentences. Dates of migration and dates of death were recorded in order to adjust for time at risk in all analyses. Outcome data were obtained from the central criminal register held by the Home Office (i.e., a record of all convictions, but not arrests.).

To compare rates of offending between schizophrenics and controls, rate ratios were calculated using the person years at risk. Confounding effects of social class and ethnicity were controlled for using Poisson regression after tests of heterogeneity. The rate ratio for assault and serious violence among men was 2.1 (95% CI = 1.5 - 2.9), $p < .001$ and among women was 3.1 (95% CI = 1.3 - 7.4), $p = .005$.

Unadjusted odds ratios were calculated to determine the strength of the association between a variety of factors and the chances of acquiring a first conviction. **Of relevance to HCR-20 items H3 and H4, factors that decreased the risk were being female, being married, or having a job. Factors that increased the risk were having schizophrenia, being unemployed, belonging to an ethnic minority, being male, being a substance abuser and being born later.** Of relevance to HCR-20 items H5 and H6, Cox's proportional hazard analyses ($n = 1076$) to examine independent predictors of the risk of first conviction indicated that having schizophrenia (as opposed to any other mental disorder) exerted an independent effect (hazard ratio = 1.4, 95% CI = 1.0 - 2.0, $p = .047$), but less than the other variables examined, such as substance abuse (hazard ratio = 2.5, 95% CI = 1.7 - 3.5, $p = .001$) and ethnicity (hazard ratio = 2.3, 95% CI = 1.6 - 3.2, $p = .001$).

4. Woodward, L. J., Fergusson, D. M., & Horwood, L. J. (2002). Deviant partner involvement and offending risk in early adulthood. *Journal of Child Psychology & Psychiatry*, 43, 177-190.

→ Community Violence

This study examined the effects of deviant and non-deviant partner involvement at age 21 on patterns of continuity and change in offending between the ages of 18 and 21 years. Participants were members of an unselected birth cohort of 1265 children (635 boys; 630 girls) born in the Christchurch, New Zealand over a four-month period during 1977. The children have been studied at birth, at four months, at 1 year, then at annual intervals to age 16, and then at age 18. Data were collected through parent interviews, teacher assessments, child interviews, standardized psychometric tests, and medical and official records.

Deviant/non deviant partner involvement was measured at age 21 when participants were asked about their current intimate relationship. The sample comprised 983 (78% of total cohort) young adults for whom complete data were available on the measure of deviant partner involvement at age 21 and the measures of total offending at ages 18 and 21. Approximately half of the respondents ($n = 547$; 55.6%) reported that they currently were involved in a romantic relationship. Respondents reported different types of intimate relationships: 43.7% living with, engaged to, or married to their partner; 48.3% going out seriously with their partner; 7.13% being in a casual relationship with their partner.

Respondents were queried regarding the extent to which their partner was involved in delinquent activities and substance using behaviors. They were asked nine items that were rated on a 3-point Likert-type scale (0 = doesn't apply; 2 = definitely applies). Item scores were summed to create total scores. Results were used to classify respondents into one of three groups: Group 1 members were not in a relationship ($n = 436$, 44.4%); Group 2 members reported high levels of partner deviance ($n = 79$; 8%); and Group 3 members had partners who never or only infrequently were deviant. High deviance partners were identified by scores of 5 or higher.

A Mantel Haenszel chi-square test of linearity was conducted to examine the extent to which offending behavior at age 18 placed cohort members at increased risk for offending at age 21. Three groups were formed and defined by: (1) no offending at age 18; (2) 1 - 7 offenses committed by age 18; and (3) 8 or more offenses committed by age 18. Respondents with a high rate of offending at age 18 were 6.3 times more likely to offend at age 21 than those who do not have a history of offending (95% CI = 4.5 - 8.5).

To test the impact of deviant partners on offending, the analyses described above were repeated, separately for women and for men, but with the deviant partner measure (which was used to create groups 1, 2, and 3 defined above) included. Three general trends emerged: (1) increasing rates of offending at age 18 were associated with increasing rates of offending at age 21 for both genders, (2) deviant partner involvement was associated with increased risk of offending for both gender; and (3) men were more likely to report high rates of offending at both ages compared to women. These findings suggest that offending at age 21 may be a function of previous offense history and partner choice in early adulthood. This hypothesis was confirmed by results of a logistic regression that examined the association between offending at age 18, partner deviance at age 21, and offending risk at age 21: both offending history at age 18 ($B = 1.19$, $SE = .12$, $p < .0001$) and level of involvement with deviant partner at age 21 ($B = .61$, $SE = .15$, $p < .0001$) independently contributed to the risk of offending at age 21.

Odds ratios to gauge the magnitude of the association between degree of partner deviancy, frequency of offending at age 18, and risk for offending at age 21 were calculated separately to reflect length of time that the respondent had been in the relationship. The following odds ratios pertain to *all partnerships regardless of their duration*. Among individuals with a low deviant partner, the risk of offending at age 21 as a function of frequency of offending by age 18 was: no offending (OR = 1); 1-7 offenses (OR = 2.64, 95% CI = 1.86 - 3.75), and 8+ offenses (OR = 6.98, 95% CI = 3.47 - 14.05). Among individuals with no partner, the risk of offending at age 21 as a function of frequency of offending by age 18 was: no offending (OR = 1.78, 95% CI = 1.26 - 2.53); 1-7 offenses (OR = 4.71, 95% CI = 2.93 - 7.55), and 8+ offenses (OR = 12.43, 95% CI = 5.84 - 26.43). Among individuals with a high deviant partner, the risk of offending at age 21 as a function of frequency of offending by age 18 was: no offending (OR = 3.17, 95% CI = 1.58 - 6.39); 1-7 offenses (OR = 8.38, 95% CI = 3.94 - 17.82), and 8+ offenses (OR = 22.15, 95% CI = 8.61 - 56.97).

The following odds ratios pertain to *partnerships of at least one year's duration*. Among individuals with a low deviant partner, the risk of offending at age 21 as a function of frequency of offending by age 18 was: no offending (OR = 1); 1-7 offenses (OR = 2.61, 95% CI = 1.85 - 3.68), and 8+ offenses (OR = 6.80, 95% CI = 3.41 - 13.55). Among individuals with no partner,

the risk of offending at age 21 as a function of frequency of offending by age 18 was: no offending (OR = 1.52, 95% CI = 1.00 – 2.30); 1-7 offenses (OR = 3.96, 95% CI = 2.30 - 6.81), and 8+ offenses (OR = 10.32, 95% CI = 4.58 - 23.22). Among individuals with a high deviant partner, the risk of offending at age 21 as a function of frequency of offending by age 18 was: no offending (OR = 2.30, 95% CI = 1.00 - 5.27); 1-7 offenses (OR = 6.01, 95% CI = 2.43 - 14.82), and 8+ offenses (OR = 15.66, 95% CI = 5.28 - 46.47).

Of relevance to Item H3, these results suggest that having a partner reduced the risk of offending at age 21, but only if the partner is low deviant; having no partner actually heightened the risk of offending compared to having a low deviant partner. On the other hand, not having a partner was associated with a lower risk for offending at age 21 than having a high deviant partner.

Because both deviant partner involvement and offending risk were measured during the same period of time (age 18-21), questions regarding the temporal sequencing and direction of causal influence arise – does crime lead to deviant partnership or do deviant partnerships encourage crime? The authors re-analyzed the data in a pseudo-prospective manner to address this issue. For this analysis, respondents were classified into three groups: (1) in a relationship with a low deviant partner for at least one year, (2) not in a partner relationship or in a partner relationship for less than one year; and (3) in a relationship with a deviant partner for at least one year. The results were similar to those described above. The authors indicated that these findings provided support for the view that partner deviance influenced subsequent offending risk.

A final set of analyses were conducted to examine whether the associations between partner deviance/nondeviance and offending risk held for both violent and property offending. Analyses indicated that deviant partner involvement was a significant predictor of both violent and property offending behavior at age 21 even when adjusted for confounding factors.

Additional Resources Supportive of H3 but with Nonviolent Criterion – Abstracts Provided

1. Grassi, L., Peron L., Marangoni, C., Zanchi, P., & Vanni, A. (2001). Characteristics of violent behavior in acute psychiatric in-patients: A 5-year Italian study. *Acta Psychiatr. Scand.*, *104*, 273-279.

In order to examine prospectively the characteristics of violence among psychiatric patients, a 5-yr study was carried out in an acute psychiatric unit. All assaultive behavior which occurred in the ward during the study period was assessed routinely using the Staff Observation Aggression scale (SOAS). Of 1,534 patients admitted to the unit during the study period, 116 were responsible for 329 aggressive episodes (prevalence of violence was 7.5%, 2.8 incidents per patient). Most violent patients had an ICD-9 diagnosis of schizophrenia and/or delusional syndromes (55.1%), a history of violence (80.7%) and previous psychiatric admissions (92%). Approximately half of the incidents had no specific cause, occurred during daytime and the 1st wk of admission and, in most cases, was directed towards individuals (77.8%). Although confirming the low rate of violence among Italian psychiatric in-patients, these data indicate the need for more attention to the problem of aggression in general hospital psychiatric units.

2. Krueger, R. F., Moffitt, T. E., Caspi, A., Bleske, A., & Silva, P. A. (1998). Assortative mating for antisocial behavior: Developmental and methodological implications. *Behavior Genetics*, *28*, 173-186.

Investigated assortative mating for antisocial behavior and its correlates in a sample of 360 couples from New Zealand. Substantial assortative mating was found for self-reports of antisocial behavior per se and for self-reports of couple members' tendencies to associate with antisocial peers. Perceptions about the likelihood of social sanctions for antisocial behavior (e.g., being caught by the authorities or losing the respect of one's family) showed moderate assortative mating. However, assortative mating for personality traits related to antisocial behavior was low. These findings suggest that, whereas assortative mating for many individual-difference variables (such as personality traits) is low, assortative mating for actual antisocial behaviors is substantial. It is concluded that future family studies of antisocial behavior should endeavor to measure and understand the influence of assortative mating. In addition, a testable behavior-genetic model for the development of antisocial behavior is outlined, in which genes and environments promoting or discouraging antisocial behavior become concentrated within families (due to assortative mating), giving rise to widely varying individual developmental trajectories that are, nevertheless, similar within families.

H4 Employment Problems

1. Campbell, C.S., & Robinson, J.W. (1997). Family and employment status associated with women's criminal behavior. *Psychological Reports*, 80, 307-314.

→ Community Violence

This study explored the relationship between characteristics of female criminal behavior (violence or nonviolence, type of crime, or prior criminal involvement) and fulfillment of the traditional female role (operationalized via marital status, employment status, or children in the home). The authors hypothesized that female offenders who had children, were unemployed, or were in a marital or common-law relationship would tend to have been convicted of a "feminine crime" (e.g., less violent crimes, crimes without a victim present).

The sample comprised 141 inmates incarcerated in Louisiana's only prison for adult female offenders. The majority of the sample was nonwhite (63.1%). Data were collected through self-report questionnaires. The crimes for which the offenders were incarcerated were dichotomized into violent or nonviolent. Violent crimes included murder, manslaughter, negligent homicide, battery, robbery, attempted robbery, and child abuse.

This study is of relevance to HCR-20 item H4 in that participants who reported being unemployed prior to being arrested for the index offense were most likely to have committed murder (60.87%, $\chi^2 = 8.30$, $p \leq .05$). Unemployed females also were more likely to be classified as violent offenders (69.23%, $\chi^2 = 5.57$, $p \leq .05$). However, unemployed offenders were divided fairly evenly among the other types of crime. These results were not consistent with the authors' hypothesis. Finally, the results regarding marital status failed to confirm the authors' hypothesis in that married and previously married participants tended to have been involved primarily with murder and secondarily with theft (i.e., non-"female" crimes).

2. Fresan, A., Apiquian, R., de la Fuente-Sandoval, C., Garcia-Anaya, M., Loyzaga, C., & Nicolini, H. (2004). Premorbid adjustment and violent behavior in schizophrenic patients. *Schizophrenia Research*, 69, 143-148.

→ Community Violence

*Article summary also appears under Item R3

This study investigated whether premorbid impairments in several demographic and clinical domains were risk factors for violent behavior. The sample comprised consecutively admitted patients from the outpatient admission ward at the National Institute of Psychiatry (Mexico City) with DSM-IV defined schizophrenia. Three patients were excluded because of concomitant alcohol or substance abuse in the last 6 months, which resulted in a final sample size of 72 (45 men and 27 women). Participants were evaluated with clinical instruments validated with the Mexican population. The Premorbid Adjustment Scale (PAS), which was used to assess premorbid adjustment, evaluates the level of functioning in four major areas: (1) social accessibility-isolation, (2) peer relationships, (3) ability to function outside the nuclear family,

and (4) capacity to form intimate sociosexual ties. Ratings are made on a scale of 0 (healthy) to 6 (unhealthy) and across various age periods. Violent behavior was assessed with the Overt Aggression Scale (OAS), which evaluates four categories of aggression: (1) verbal aggression, (2) physical aggression against self, (3) physical aggression against objects, and (4) physical aggression against others. Scores can range from 0 (non-aggressive) to 4 (extreme aggression). A violent behavior was defined with a score of 2 or more (which indicates threatening behavior) on each OAS category. A cutoff value of 7 on the total aggression score of the OAS was used to split the sample into a violent and a non-violent group.

Of relevance to HCR-20 item H4, there were higher rates of unemployment among the violent patients (70.4%) than among the nonviolent patients (53.3%). As such, unemployment approximately doubles the risk for violence (OR = 2.08).

Of relevance to HCR-20 item R3, having worse social performance in terms of peer relationships in childhood, early adolescence, late adolescence, and adulthood significantly differentiated violent from non-violent patients.

3. Milton, J., Amin, S., Singh, S.P., Harrison, G., Jones, P., Croudace, T., Medley, I., & Brewin, J. (2001). Aggressive incidents in first-episode psychosis. *British Journal of Psychiatry*, 178, 433-440.

→ Community Aggression (not necessarily physical violence)

*Article summary also appears under Items H1, H3, and H10

This study examined acts of aggression in first-episode psychosis. The sample comprised 168 consecutively admitted patients (16-64 years old) with a psychotic illness making first contact with psychiatric services in Nottingham (UK) between 1 June 1992 and 31 May 1994. All participants met the criteria for psychosis in the Screening Schedule for Psychosis. The Schedules for Clinical Assessment in Neuropsychiatry (SCAN) interview was used to derive symptom ratings at baseline. When direct interviews were not possible, symptoms were rated using the Item Group Checklist (IGC). Personality was assessed using the Personality Assessment Schedule (PAS) and clinical consensus Axis II diagnoses for ICD-10.

Follow-up assessments occurred between June 1995 and May 1997, as close as possible to three years after first contact. At that time, 143 interviews were completed with participants; data collection for the remainder of the participants was completed using clinical material. Informed consent to examine participants' records and to interview their informal carers was obtained.

Offending behavior (self-reported violence, previous arrests, convictions, and imprisonment for violence) was recorded from the Psychiatric and Personal History Schedule, follow-up assessments, psychiatric, community mental health team and general practitioner records, and legal reports where available. Severity of violence was classified by adapting the two-point scale from the MacArthur Community Violence Instrument wherein *serious aggression* includes weapon use or threat, sexual assault or any other violence with injury to a victim and *lesser aggression* included all other acts. Timing of aggression was categorized into three periods:

Period A represented the period before onset of any symptoms, Period B represented the clinical 'best estimate' of the duration of untreated illness (DUI), and the end of period C was defined as 3 years after the date of contact with psychiatric services.

With reference to HCR-20 Item H1, there was over a five-fold increase in the risk for aggression (although not necessarily physically violent aggression) among patients with previous violent convictions (OR = 5.6, 95% CI = 1.8 – 16.9, $p < .001$).

With reference to HCR-20 Item H3, the risk for aggression (although not necessarily physically violent aggression) was twice as high among patients who were single (OR = 2.2, 95% CI = 1.1 – 4.6, $p < .05$).

With reference to HCR-20 Item H4, there was almost a four-fold increase in the risk for aggression (although not necessarily physically violent aggression) among patients who were unemployed (OR = 3.7, 95% CI = 1.8 – 7.7, $p < .001$).

With reference to HCR-20 Item H10, high rates of absconding from inpatient care was characteristic of participants who exhibited aggression (although not necessarily physically violent aggression) after service contact (34.3%; OR = 16.6, 95% CI = 4.9 - 55.9).

5. Wessely, S. (1998). The Camberwell study of crime and schizophrenia. *Social Psychiatry & Psychiatric Epidemiology*, 33, S24-S28.

→ Community General Criminality

* Article summary also appears under Items H3, H5, and H6

In this population-based study of an incident cohort, participants ($N = 538$) with an ICD-9 diagnosis of schizophrenia or related disorders were identified from a cumulative case register in operation between 1964 and 1984 that records all contacts with mental health services and/or professionals (i.e., the Camberwell Psychiatric Case Register). Controls were chosen from the same case register as the cases and were matched by gender, age band, and year in which s/he joined the register. That is, cases were compared not with the general population, but with those with other mental disorders but excluding psychosis.

Records were obtained from various sources and included details of all hospital admissions and prison sentences. Dates of migration and dates of death were recorded in order to adjust for time at risk in all analyses. Outcome data were obtained from the central criminal register held by the Home Office (i.e., a record of all convictions, but not arrests.).

To compare rates of offending between schizophrenics and controls, rate ratios were calculated using the person years at risk. Confounding effects of social class and ethnicity were controlled for using Poisson regression after tests of heterogeneity. The rate ratio for assault and serious violence among men was 2.1 (95% CI = 1.5 - 2.9), $p < .001$ and among women was 3.1 (95% CI = 1.3 - 7.4), $p = .005$.

Unadjusted odds ratios were calculated to determine the strength of the association between a variety of factors and the chances of acquiring a first conviction. **Of relevance to HCR-20 items H3 and H4, factors that decreased the risk were being female, being married, or having a job.** Factors that increased the risk were having schizophrenia, being unemployed, belonging to an ethnic minority, being male, being a substance abuser and being born later. Of relevance to HCR-20 items H5 and H6, Cox's proportional hazard analyses ($n = 1076$) to examine independent predictors of the risk of first conviction indicated that having schizophrenia (as opposed to any other mental disorder) exerted an independent effect (hazard ratio = 1.4, 95% CI = 1.0 - 2.0, $p = .047$), but less than the other variables examined, such as substance abuse (hazard ratio = 2.5, 95% CI = 1.7 - 3.5, $p = .001$) and ethnicity (hazard ratio = 2.3, 95% CI = 1.6 - 3.2, $p = .001$).

Additional Relevant Sources Supportive of H4 – Abstracts Provided

1. Bonta, J., Law, M., & Hanson, K. (1998). The prediction of criminal and violent recidivism among mentally disordered offenders: A meta-analysis. *Psychological Bulletin*, *123*, 123-142.

A meta-analysis was conducted to examine whether the predictors of recidivism for mentally disordered offenders are different from the predictors for nondisordered offenders. Effect sizes were calculated for 35 predictors of general recidivism and 27 predictors of violent recidivism drawn from 64 unique samples. The results showed that the major predictors of recidivism were the same for mentally disordered offenders as for nondisordered offenders. Criminal history variables were the best predictors, and clinical variables showed the smallest effect sizes. The findings suggest that the risk assessment of mentally disordered offenders can be enhanced with more attention to the social psychological criminological literature and less reliance on models of psychopathology.

2. Christoffersen, M.N., Francis, B., & Soothill, K. (2003). An upbringing of violence? Identifying the likelihood of violent crime among the 1966 birth cohort in Denmark. *Journal of Forensic Psychiatry and Psychology*, *14*, 367-381.

Why do some boys develop into troublesome youths who eventually get sentenced for violent crimes? In planning a strategy to fight violent crime, it is important to identify significant risk factors for violent criminal behavior among adolescents and young men. In this study information from population-based registers covers various aspects both for children, aged between 15 and 27 years, and their parents: health (mental and physical), education, social networks, family violence, self-destructive behavior, parental alcohol or drug abuse, and unemployment. First-time convicted offenders have an increased risk of coming from seriously disadvantaged families; they also seem to be characterized by unstable education and employment records (e.g. not graduating, no vocational training), occasional work, or long-term unemployment.

Additional Resources Supportive of H4 but with Nonviolent Criterion – Abstracts Provided

1. Britt, C. L. (1997). Reconsidering the unemployment and crime relationship: Variation by age group and historical period. *Journal of Quantitative Criminology*, 13, 405-428.

This study extends prior research on the unemployment crime relationship (D. Cantor and K. C. Land, 1985) by testing simultaneously for (1) variation in the unemployment-crime relationship by age group (16-17, 18-19, 20-24, 25-34, and 35-44 yrs), and (2) variation in the unemployment-crime relationship over time. Age-specific arrest and unemployment time-series data for the United States from 1958 -1995 (Uniform Crime Reports, 1959-1996) are used to test the authors' hypotheses. The 2 main findings indicate that (1) unemployment has a greater motivational effect on property crime among youth and young adults and (2) the unemployment crime relationship varies over time, but in a way that appears to be more random than systematic. The implications for future research are discussed.

2. Brown, V. L., Montoya, I. D., Dayton-Shotts, C. A., Carroll-Curtis, T. L., & Riley, M. A. (2004). Trends of criminal activity and substance use in a sample of welfare recipients. *Crime & Delinquency*, 50, 6-23.

The Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA) of 1996 instituted a compulsory work mandate for welfare recipients. However, recipients who experience difficulties finding employment may increase their involvement in criminal activities and their frequency of substance use as a means to deal with changes precipitated by PRWORA. This study used a four-wave panel design to analyze the criminal behaviors and substance-use frequency of 534 welfare recipients in Houston, Texas. Data were collected from the Attitudes, Behaviors, and Skills Assessment (ABSA) instrument designed specifically for this study. Results show that a minority of welfare recipients were involved in criminal activity. Furthermore, although participants were losing their welfare benefits, both criminal activity and substance use declined over time.

3. Mayzer, R., Gray, M. K., & Maxwell, S. R. (2004). Probation absconders: A unique risk group? *Journal of Criminal Justice*, 32, 137-150.

While examination of probation violations is common in the literature, probationers who abscond from community supervision have rarely been examined. These violators are circumventing justice and may pose a serious risk to public safety. This article compares the characteristics of absconders to those of offenders who successfully completed probation and offenders revoked from probation because of other violations. Absconders and revoked probationers generally presented the least favorable risk profiles, but did not differ significantly from one another on probation conditions, "stakes in conformity," or prior felonies--although revoked probationers had more misdemeanors and a younger age of onset for officially recorded crime. Combined with the violation behaviors of absconders while on probation, these similarities suggest a strong chance of being revoked to prison had absconders remained under supervision. Employment, recorded address changes, and lower supervision burden on offenders were among the best predictors of successfully completing probation versus absconding.

4. Nilsson, A. (2003). Living conditions, social exclusion and recidivism among prison inmates. *Journal of Scandinavian Studies in Criminology & Crime Prevention*, 4, 57-83.

This article examines the importance of living conditions for recidivism following release from prison. How do resource deficiencies in different welfare-related areas, such as education, employment, the financial situation, housing, social relations and health, affect the risk for recidivism? How important are deficiencies of this kind by comparison with known risk factors associated with levels of previous involvement in crime? The analyses are based on a representative sample of Swedish prison inmates ($n = 346$). Data on their living conditions were collected at interview and were then linked to data on reoffending within three years of release from prison. The findings show that problems relating to education and employment, but above all an accumulation of different types of resource problems, are clearly correlated with recidivism. They show further that the effect of living conditions and resource deficiencies on reoffending is primarily felt by those who at the time of interview had not previously served time in prison. A prison term serves to reduce the opportunities to lead a conventional life--with a legitimate income--and thereby contributes to marginalisation and social exclusion.

5. Uggen, C. (2000). Work as a turning point in the life course of criminals: A duration model of age, employment, and recidivism. *American Sociological Review*, 65, 529-546.

Yields refined estimates of the effect of employment on the behavior and life course of criminal offenders (mean age 24.6 yrs for control group and 25.2 yrs for treatment group) by specifying event history models to analyze assignment to, eligibility for and current participation in a national work experiment for criminal offenders. The author investigates 3 questions about causality, age-dependence, and timing of criminal recidivism: (1) Does work cause a reduction in crime, or is the association spurious? (2) Do work effects depend on the life-course stage of offenders, or are they uniform across age groups? (3) When are released offenders at greatest risk of recidivism? Results showed age to interact with employment to affect the rate of self-reported recidivism; those aged 27 yrs or older are less likely to report crime and be arrested when provided with marginal employment opportunities than when such opportunities are not provided. Among young participants (those in their teens and early twenties), the experimental job treatment had little effect on crime. The author concludes that work appears to be a turning point for older, but not younger offenders.

Narrative Review of H4

1. Harrison, B., & Schehr, R. C. (2004). Offenders and post-release jobs: Variables influencing success and failure. *Journal of Offender Rehabilitation*, 39, 35-68.

Nonviolent adult repeat offenders between the ages of 18 and 35 face nearly insurmountable obstacles to successful reintegration into dominant culture. Upon release from prison ex-offenders receive an average of \$69 from their state department of corrections, or between \$100-\$500 from the Federal Bureau of Prisons to aid their transition back into their communities. As many of them search for legitimate work opportunities, they must deal with the stigma attached to a criminal record and legally enforced employment restrictions barring them from working in several occupations. In addition, most states and the federal government prohibit ex-offenders from accessing public aid funds or financial assistance for school. Finally, many released inmates find they are forced to live in isolated, impoverished communities where there are few job opportunities. In this essay, we analyze secondary data on recidivism and employability for ex-offenders. A review of the literature and history on ex-offender vocational guidance and placement programs documents contrasting views regarding their success and failures, and the reasons for recidivism. We conclude by arguing that sustainable employment is critical to the success of a supervision program, and an ex-offender's avoidance of recidivism. Therefore, resourceful vocational guidance and assistance programs that include financial assistance and follow-up services are more effective than incarceration for some offenders in deterring perpetual recidivism.

H5 Substance Use Problems

1. Arseneault, L., Moffitt, T.E., Caspi, A., Taylor, P.J., & Silva, P.A. (2000). Mental disorders and violence in a total birth cohort: Results from the Dunedin study. *Archives of General Psychiatry*, 57, 979-986.

→ Community Violence; Substance Abuse (Comorbid)

*Article summary also appears under Item H6

Participants were 961 young adults who comprised 94% of a total-city birth cohort (01 April 1972 through 31 March 1973) in New Zealand. There were slightly more boys in the original cohort (51.6%) and the majority of the participants were white. Participants were interviewed at 21 years of age. Mental disorders were assessed using the Diagnostic Interview Schedule, with a reporting period of 12 months before the interview. There was a range of Axis I diagnoses: (1) depression disorders (17.9%); (2) anxiety disorders (17.7%); (3) manic episode (2.0%); (4) eating disorders (1.4%); (5) alcohol dependence (9.8%); (6) marijuana dependence (9.5%); (7) schizophrenia-spectrum disorder (4.1%).

Two sources were used to collect information about violent behaviors at 21 years of age. First, court convictions for violence in all New Zealand and Australia courts were obtained by searching the central computer system of the New Zealand police. Thirty-nine participants (33 women and 6 men; 4.1% of the sample) were convicted of 107 violent offenses in the previous year. Second, self-report of violence committed during the past year were obtained using a private standardized interview developed for the National Youth Survey and National Institute of Justice multisite surveys, yielding a 7-item violence scale comprising the most common violent offenses (e.g., simple assault, aggravated assault, etc.). The violent group comprised the 92 participants (9.6% of the sample) who had self-reported 2 or more different violent offense types or had been convicted of a violent crime. Substance use before the violent offense was assessed during the Self-reported Delinquency Interview. Participants were asked to think about the most serious offense of the past year and to indicate whether or not they had been drinking or taking drugs two hours prior to that incident. The yes/no answers were summed to determine how many of the most serious incidents were committed when alcohol or illicit drugs had been consumed immediately prior to the incident.

Odds ratios, adjusted for SES and sex, for the risk for violent behaviors in the one-year before 21 years of age were calculated. Next, hierarchical logistic regression analyses controlling for SES, sex, and all other concurrent disorders were completed to examine the unique association between each mental disorder and violence perpetrated during that same time period. Individuals who met diagnostic criteria for any disorder were at risk of committing violence. Depression (OR = 2.9; 95% CI = 1.7 – 4.8) and anxiety disorders (OR = 1.8; 95% CI = 1.0 – 3.1) were related weakly to violence, but not after controlling for comorbidity (depression disorders: $\beta = .53$, SE = .31, OR = 1.7, 95% CI = .9 – 3.1; anxiety disorders: $\beta = -.01$, SE = .33, OR = 1.0, 95% CI = .5 – 1.9). Similarly, manic episodes (OR = 4.9; 95% CI = 1.6 – 14.9) and eating disorders (OR = 6.8; 95% CI = 1.8 – 25.2) were significantly associated with violence initially, but not after controlling for comorbidity (manic episodes: $\beta = 1.15$, SE = .64, OR = 3.2, 95% CI = .9 – 11.1; eating disorders: $\beta = 1.11$, SE = .73, OR = 3.0, 95% CI = .7 – 12.7). The authors noted that

they could not rule out an association of those disorders with violence because their low base rates in the sample rendered an interpretation hazardous.

Alcohol dependence (OR = 4.0; 95% CI = 2.4 - 6.8), marijuana dependence (OR = 6.9; 95% CI = 4.1 - 11.4) and schizophrenia-spectrum (OR = 5.4; 95% CI = 2.6-10.9) disorders had a robust association with violence. These factors were associated with violence uniquely and significantly even when controlling for demographic risk factors and all other comorbid disorders.

Individuals who were substance dependent and/or had schizophrenic-spectrum disorder constituted 18.3% of the total sample, but were 55.4% ($n = 51$) of the sample's 92 violent individuals. These individuals were responsible for 57.9% of the sample's 107 violent court convictions and 54.4% of the sample's 2403 self-reported violent offenses. In addition, 6.8% ($n = 12$) of the individuals with substance dependence and/or schizophrenia-spectrum disorder were recidivists (convicted for ≥ 2 violent offenses) according to court records, and 44.3% ($n = 78$) were recidivists according to self-report. In contrast, a lesser concentration of violence was observed among individuals who did not manifest schizophrenia-spectrum disorder or substance dependence. Individuals who did not meet diagnostic criteria for either of those conditions constituted 81.7% of the total sample but only 44.6% of the violent offenders. Moreover, they were responsible for 42.1% of the sample's violent court convictions and 45.6% of its self-reported violent offenses. Only .6% ($n = 5$) of individuals without schizophrenia-spectrum disorder or substance dependence were official recidivists; 18% ($n = 141$) recidivists according to self-report.

The following summary statistics are of particular relevance to HCR-20 items H5 and H6. Overall, 11.3% of the sample's risk of becoming a violent offender was uniquely attributable to alcohol dependence, 28.2% to marijuana dependence, and 9.6% to schizophrenia-spectrum disorder. The risk was more than doubled if two of these disorders at once were present, compared with having one of them: alcohol dependence plus schizophrenia-spectrum disorder (OR = 8.3; 95% CI = 3.2 - 23.4); alcohol plus marijuana dependence (OR = 11.7; 95% CI = 5.9 - 23.4); and marijuana dependence plus schizophrenia-spectrum disorder (OR = 18.4; 95% CI = 7.5 - 45.3).

2. Brennan, P.A., Mednick, S.A., & Hodgins, S. (2000). Major mental disorders and criminal violence in a Danish birth cohort. *Archives of General Psychiatry*, 57, 494-500.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Item H6

This epidemiological study investigated the relationship between each of the major mental disorders and criminal violence. Participants were drawn from a birth cohort of all individuals born in Denmark between 1 January 1944 and 31 December 1947. The final sample consisted of 173,668 men (51.7%) and 162,322 women (48.3%). Official arrest and conviction data through 1991 were collected from the Danish National Police Register in Copenhagen. For this study, arrest data was examined because all individuals suspected of committing a crime are arrested, regardless of mental status (this differs from some countries where the police may take an

individual to a hospital instead of arresting him/her). Only criminal index violent offenses were considered in the present study. Violent offenses included: murder (7.6% of total violent offenses); attempted murder (11.0%); rape (11.1%); violence against authority (e.g., assault on a police officer; 9.2%); assault (52.0%); domestic violence (0.09%); and robbery (8.2%). Mental health status was determined through records of psychiatric hospitalizations through 1991, which were obtained through the Danish Psychiatric Register at the Institute for Psychiatric Demography. Subjects were separated into diagnostic groups based on ICD-8 hospital discharge diagnoses. Subjects were assigned to a diagnostic group based on a hierarchy of diagnoses (from highest to lowest): schizophrenia; organic brain syndrome; affective psychoses; and other psychoses. Secondary diagnoses of substance abuse and personality disorder also were recorded.

Logistic regression analyses demonstrated that individuals with each type of major mental disorder were more likely than those who had never been hospitalized to have been arrested for a violent offense. Among men, the odds ratios were: schizophrenia (4.6, 95% CI = 3.8 – 5.6); organic psychosis (8.8, 95% CI = 7.4 – 10.4); affective psychosis (2.0, 95% CI = 1.4 – 2.8); and other psychoses (4.4, 95% CI = 3.6 – 5.3). Among women, the odds ratios were: schizophrenia (23.2, 95% CI = 14.4 – 37.4); organic psychosis (16.6, 95% CI = 8.34 – 32.6); affective psychosis (3.9, 95% CI = 1.7 – 8.9); and other psychoses (9.6, 95% CI = 6.1 – 15.0).

Pertaining to substance abuse, logistic regression analyses showed that both men and women with affective psychosis who did not have a secondary substance abuse diagnosis were not more likely to be arrested for violence than persons who had never been hospitalized (Men: OR = 1.2, 95% CI = 0.8 - 1.9; Women: OR = 2.3, 95% CI = 0.7 - 7.3). In addition, women with organic psychosis, but no secondary substance abuse diagnosis, were not more likely than women who had never been hospitalized to have a record of violent arrest (OR = 3.6, 95% CI = 0.5 - 25.6). All other associations between mental disorders and violence relationships remained significant for individuals with no secondary substance abuse diagnoses.

Logistic regression analyses also were conducted to examine the relationship between major mental disorders and violence when sociodemographic factors and secondary diagnoses were controlled simultaneously. For both men and women, all major mental health disorder groups remained significantly different from the nonhospitalized comparison group when controlling for demographic factors. When substance abuse was controlled for, the relationship between major mental disorder and violence was not significant for men and women with affective disorder, and for women with organic psychosis. Controlling for personality disorder did not change these results.

Of relevance to HCR-20 items H5 and H6, the major finding of this present study was that, overall, the risk of arrest for violent crime for both men and women with a major mental disorder diagnosis was reduced considerably when they did not present with co-occurring substance abuse.

3. McCoy, H.V., Messiah, S.E., & Yu, Z. (2001). Perpetrators, victims, and observers of violence: Chronic and nonchronic drug users. *Journal of Interpersonal Violence, 16*, 890-909.

→ Community Violence; Substance Abuse (not comorbid)

The purpose of this study was to compare the prevalence of violence among a sample of chronic drug users (CDU) and non-chronic drug users (NCDU) and to determine the level of risk of becoming a perpetrator of violence if one uses drugs. Participants were recruited from April 1996 to September 1997 using street outreach and a network-based technique in Miami-Dade County. The outreach technique consisted of project staff recruiting their contacts within the CDU community, who in turn recruited their friends for potential study participation. NCDU participants were selected from the same neighborhoods as CDU participants to provide a comparison group with a similar socioeconomic background. In total, 1479 CDUs and NCDUs were recruited for the study. Following a preliminary screening, potential participants were transported to an assessment center where a more thorough screening was performed. An interview and a confirmatory urine screen were used to establish drug use status. The University of Miami Health Services Research Instrument (HSRI) was administered to each participant by a trained interviewer to obtain demographic information, drug use history, lifetime and one-year health histories, and information on experience with violence. Regarding violence perpetration, participants were asked the following questions: Have you ever beaten up, shot or stabbed, robbed, killed or sexually assaulted/raped somebody? How many times did this occur in the past 12 months? Assault was operationalized as being "beaten up." Attempted murder and attempted sexual assault/rape were excluded.

Chi-square tests demonstrated that among CDUs, a significantly higher percentage of men than women were perpetrators of violence ($p \leq .001$). Examining race, Hispanics were less likely than Whites or Blacks to be perpetrators of violence ($p < .01$). Similar results were found for NCDUs. Overall, both male and female NCDUs reported fewer instances of perpetrating violence compared to CDUs.

Of relevance to HCR-20 item H5, results from a logistic regression model that controlled for demographic factors indicated that being a CDU was a significant predictor of ever having been a perpetrator for all violent acts examined ($p < .01$), with the exception of rape. The odds ratios comparing CDUs with NCDUs for each type of violence were as follows: Beaten someone (OR = 2.60, 95% CI = 2.04 - 3.30); Ever shot someone (OR = 4.81, 95% CI = 3.17 - 7.29); Robbed someone (OR = 9.09, 95% CI = 5.72 - 14.45); Killed someone (OR = 2.70, 95% CI = 1.24 - 5.87); Raped someone (OR = 3.70, 95% CI = 0.78 - 17.53). CDUs also were more likely than NCDUs to have ever been arrested (OR = 7.45, 95% CI = 5.82 - 9.54).

Other significant predictors of violence included gender, race, age, and education. For both CDUs and NCDUs, men were significantly more likely than women to have perpetrated a beating, shooting, robbery, or rape ($p < .05$) and were more likely to have been arrested ($p < .01$). Younger participants were more likely to have beaten someone ($p < .001$), robbed someone ($p < .01$), raped someone ($p < .05$), and to have been arrested ($p < .05$). In terms of race, Blacks were significantly more likely to have beaten ($p < .05$) or shot ($p < .05$) someone. In addition,

Hispanics were significantly less likely to have beaten someone ($p < .001$). Finally, individuals who had less than high school education were more likely to have been arrested ($p < .05$). These findings indicate that although chronic drug use was a salient risk factor for involvement in violence, demographic characteristics also were important to understanding violence.

4. Schanda, H., Knecht, G., Schreinzer, D., Stompe, T., Ortwein-Swoboda, G., & Waldhoer, T. (2004). Homicide and major mental disorders: A 25-year study. *Acta Psychiatrica Scandinavica*, *110*, 98-107.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Item H6

This study investigated the likelihood that participants with major mental disorders (MMDs) in Austria would commit a homicidal act that was associated with their illness. The rates of exculpations because of MMDs among 1087 homicide offenders in Austria during a 25-year period (1 January 1975 through 31 December 1999) were compared with the rates of the respective disorders in the general population. During the period of study, there were 96 “criminal commitments” (i.e., findings of non-responsibility) for murder or manslaughter (9.2% of all reported cases suspicious of homicide). Mental health files of the 96 exculpated mentally ill offenders were collected from the regional mental hospitals and/or from a central institution for the treatment of mentally ill offenders. The sample was divided into the following diagnostic categories: schizophrenia, major depressive episode, manic episode, delusional disorder. Two authors (G.K. and D.S) used these files to assign DSM-IV diagnoses to participants. Interrater reliability (Cohen’s Kappa) for the main diagnostic categories was 0.949. Nineteen offenders were excluded because their first diagnosis was one of mental retardation, personality disorder, substance related disorder or dementia, mental disorder/delirium due to general medical condition. This resulted in a final sample size of 77 exculpated offenders (53 men, 24 women) who were suffering from MMDs.

The association between homicide and MMDs was examined via odds ratios. The rates of offenders in each diagnostic category were compared with the rates of all other offenders without the respective diagnoses (e.g., rates of exculpated offenders who had schizophrenia and estimate of individuals in the general population with schizophrenia versus all other offenders and non-schizophrenic population, including the remaining diagnostic categories).

Of relevance to HCR-20 item H6, Schizophrenia was associated with an increased likelihood of homicide. Among men, the increased risk when adjusted for age was about six-fold (OR = 5.85, 95% CI = 4.28 - 8.01). Among women, the increased risk when adjusted for age was about 19-fold (OR = 18.83, 95% CI = 11.24 - 31.55).

Of particular relevance to HCR-20 item H5, substantial differences in the likelihood of homicide were observed when comorbid alcohol dependence was present. For individuals with schizophrenia-spectrum disorders: with comorbid alcohol dependence (OR = 20.70, 95% CI = 12.40 – 34.08); without comorbid alcohol dependence (OR = 7.08, 95% CI = 5.11 – 9.77). A similar, although less striking, pattern was observed when major depressive plus

manic episodes were considered: with comorbid alcohol dependence (OR = 3.10, 95% CI = 1.26 – 7.15); without comorbid alcohol dependence (OR = .37, 95% CI = .18 - .74).

Finally, the total of MMDs was positively related with homicide in men (OR = 2.29, 95% CI = 1.72 - 3.04) and in women (OR = 6.42, 95% CI = 4.01 - 10.20). Even under consideration of comorbid alcohol abuse/dependence, these results remained significant, as the following odds ratios (aggregate for both sexes) illustrated: MMD with alcoholism (OR = 7.58, 95% CI = 4.89 - 11.63); MDD without alcoholism (OR = 1.90, 95% CI = 1.43 - 2.51).

5. Stuart, H.L., & Arboleda-Florez, J.E. (2001). A public health perspective on violent offenses among persons with mental illness. *Psychiatric Services*, 52, 654-659.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Item H6

This study evaluated the extent to which persons with mental illness account for criminal violence in the community. The authors reanalyzed existing data that originally were collected for an investigation of the prevalence of DSM-III-R mental disorders in a pretrial population. There were 4,770 offenders admitted to a detention center in Western Canada during the study period (July 1992 through December 1992). Of these, 1,151 offenders were selected randomly from daily admission logs and were invited to participate in the study. The selected inmates were approached for an interview within 24 hours of admission to the facility prior to any bail hearings, forensic transfers, or other releases. The final sample comprised 1045 men and 106 women. The men and women did not differ significantly in age distribution (mean age = 28 years, $SD = 8.8$ years) and both had low education levels. The majority of participants were White (75%; 20% Aboriginal).

Participants were administered the SCID non-patient edition and modules B and C of the SCID patient edition. Interrater reliability for broad disorder categories ranged from .80 to 1 (partial kappa). Results presented were based on the one-month prevalence of the principal SCID diagnoses. To avoid inflating the prevalence of Axis II disorders, interviewers asked participants who received a diagnosis of antisocial personality disorder to complete the Psychopathy Checklist-Revised (PCL-R). Only participants who exceeded the recommended diagnostic threshold for the PCL-R were considered to have antisocial personality disorder and therefore considered to have met diagnostic criteria for an Axis II disorder.

Official police records and warrants of remand were used to obtain crime data. Violent offenses were operationalized as all crimes against persons. Nonviolent crimes were defined as crimes committed against property or victimless offenses. The total sample had accumulated 537 charges for violent crimes (this represented 10.8% of all crimes committed). A significantly larger proportion of men, compared to women, were charged with a violent offense (27% vs. 18%; $\chi^2 = 4.23$, $df = 1$, $p = .04$).

A total of 703 participants received a principal diagnosis of either an Axis I or an Axis II disorder. The most prevalent disorder type was psychoactive disorders (mostly alcohol related)

and the least prevalent types were psychotic disorders. In general, the number of offenses allegedly perpetrated by offenders with mental disorders was proportionate to that of offenders with no disorders. **Of relevance to HCR-20 item H5, offenders with substance use disorders accounted for almost half of all violent offenses (49%). Further, one of every two violent offenses was committed by a person with a primary substance use disorder, whereas one of every six violent offenses was committed by a person with a non-substance use disorder.**

Of relevance to HCR-20 item H6, compared with offenders with no diagnosis, a significantly greater proportion of violent offenses were committed by offenders with a principal diagnosis of adjustment disorder ($\chi^2 = 11.1$, $df = 2$, $p = .001$) and a significantly smaller proportion of violent offenses were committed by offenders with a psychotic disorder ($\chi^2 = 4.2$, $df = 2$, $p = .04$).

The proportion of preventable violent offenses was calculated and was expressed as a percentage of all violent offenses in the sample. Of further relevance to HCR-20 item H6, less than 3 percent of violent crimes could be attributed to persons with a mood, psychotic, anxiety, adjustment, or miscellaneous other Axis I disorder or an Axis II personality disorder. **Of relevance to HCR-20 item H5, an additional 7 percent of violent crimes could be attributed to individuals with a principal psychoactive substance use disorder. To couch these findings in a public health framework, one in ten violent crimes could have been prevented if these disorders did not exist.**

6. Swanson, J.W., Swartz, M.S., Essock, S.M., Osher, F.C., Wagner, H. R., Goodman, L.A., Rosenberg, S. D., & Meador, K. G. (2002). The social-environmental context of violent behavior in persons treated for severe mental illness. *American Journal of Public Health*, 92, 1523-1531.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Items H8 and C1

This study investigated to what degree different variables – victimization, exposure to trauma, substance abuse, homelessness, adverse social environments and treatment noncompliance - contribute, either independently or in convergence, to violent actions by persons with mental illness. Participants were part of a larger study investigating sexually transmitted diseases and risk behavior in people with severe mental disorders. The sample comprised adults with psychotic or major mood disorders who were receiving inpatient or outpatient services in public mental health systems in 4 U.S. states. The total sample of 802 participants provided complete data on violent behavior, victimization, and the demographic and clinical variables of interest. The majority of participants was men (65.1%) and White (46.8%; 44.8% African American; 3.3% Hispanic; 5.3% ‘other’). Participants’ mean age was 41.9 years ($SD = 9.9$ years). The proportions of major psychiatric diagnoses in the sample were: schizophrenia (44.8%), schizoaffective disorder (19.5%), bipolar disorder (16.9%), major depression (11.3%), and other serious disorders (7.0%). In addition, 45.4% had comorbid substance use disorders.

Violence was recorded for the previous year and was defined as any physical fighting or assaultive actions causing bodily injury to another person, any use of a lethal weapon to harm or to threaten someone, or any sexual assault. Information regarding violent behavior was obtained

using an instrument developed in a Duke University study of the effectiveness of involuntary outpatient commitment. These items yielded an index of violence comparable to that used in the MacArthur Violence Risk Assessment Study. Victimization was assessed by asking detailed questions about any experience of physical or sexual abuse occurring before and after age 16. Demographic information was obtained from the participants, including information about homelessness in the past year. The Exposure to Community Violence Scale was used to assess the degree of exposure to violence in their surrounding social environment. Information on clinical and institutional variables and the way in which they were assessed were as follows: psychiatric diagnoses (chart review and clinical data); observed psychiatric symptomatology (Brief Psychiatric Rating Scale); self-rated mental health status (single item 4-point scale); substance abuse (Dartmouth Assessment of Lifestyle Instrument); functional impairment (Global Assessment Scale); and medication noncompliance (participant queried regarding any prescribed psychiatric medication and frequency with which s/he was taking these medications, if at all).

Overall, the 1-year prevalence (weighted) of violence in the entire sample was 13.6%. Homelessness, experiencing or witnessing violence, substance abuse, mood disorder, PTSD, lower severity ratings on the BPRS, poor subjective mental health status, early age of psychiatric illness onset, and psychiatric hospital admission were all associated with violence in the previous year in univariate analyses.

Of relevance to HCR-20 item H8, univariate analyses indicated that physical abuse prior to age 16 significantly increased the risk of violence (OR = 4.37, 95% CI = 2.57 – 7.42, $p < .0001$), but victimization after the age of 16 was even more strongly associated with violent behavior (OR = 7.99, 95% CI = 2.87 – 22.24, $p < .0001$). Results of a multivariate model that examined the effect of victimization on violence indicated that participants who were victimized as children, but not revictimized as adults, were not significantly more likely to behave violently in comparison with individuals who were never victimized (OR = 1.55, 95% CI = .40 – 5.94, $p = n.s.$). Those who were victimized as adults were significantly more likely to engage in violent behavior even if they were not victimized as children (OR = 3.63, 95% CI = 1.23 – 10.70, $p < .05$). However, those who were victimized both as children and later as adults were by far the most likely to behave violently toward others (OR = 12.87, 95% CI = 6.19 – 26.75, $p < .001$).

Results of a multivariate logistic regression model that examined the effects of clinical and institutional variables are of relevance to HCR-20 item H5, as substance abuse significantly increased the risk of violence and had the largest odds ratio of all variables in the model (OR = 4.32, 95% CI = 2.66 – 7.02, $p < .001$).

That model's results also provide support for HCR-20 item C1: self-rated mental health status of "poor" significantly increased the risk of violence (OR = 2.29, 95% CI = 1.33 – 3.94, $p < .001$).

7. Swanson, J., Borum, R., Swartz, M., & Hiday, V. (1999). Violent behavior preceding hospitalization among persons with severe mental illness. *Law & Human Behavior*, 23, 185-204.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Item H6 Contradictory Findings

This study examined the dimensions of violent incidents and their surrounding context among a population of severely mentally ill individuals. The participants in this study were patients who had been involuntarily admitted to one of four hospitals and were awaiting discharge on outpatient commitment to one of nine counties in North Carolina. Patients were excluded if they had a primary diagnosis of personality disorder, psychoactive substance use disorder, or organic brain syndrome in the absence of a co-occurring psychotic or mood disorder.

The racial distribution of the sample was 66% African American, 33% non-Hispanic White, and 1% 'other.' Participants were predominantly young to middle-age adults (69% under age 45). At discharge, 68% had a diagnosis of schizophrenia, schizoaffective or other psychotic disorders, 27% had bipolar disorder, and 5% had unipolar depression. About one-third of the sample (34%) had used illicit drugs, 53% had used alcohol, and 59% had used either (or both) at least once a month during the 4 months prior to admission. The majority of users (57%, or 34% of total sample) had "problems" related to substance use.

Data were collected through an extensive structured interview in person with each participant and by telephone with a designated family member or other informant close to the patient. The interview obtained information about personal history details, sociodemographic and clinical characteristics, and violent behavior and the context in which it occurred. In addition, hospital records were reviewed that included clinical assessments, treatment progress notes, and relevant legal information.

Violent behavior in the 4 months preceding hospital admission was assessed from three sources: (1) self-report, (2) collateral interview, and (3) hospital record review. In the structured interview, participants were asked specifically whether they had gotten into trouble with the law or had been arrested for physical or sexual assault. Respondents also were asked whether in the 4 months preceding admission they had been in physical fights (hit, slapped, kicked, grabbed, shoved, bitten, hurt with knife or gun or something thrown) or whether they had engaged in threatening behavior (defined as "saying or doing anything that makes a person afraid of being harmed by you"). Family members were asked similar questions, and also were queried regarding how often the subject had "physically abused or attacked others" and how often she or he had problems with "violent or threatening behavior." The composite index measures whether at least one violent act was reported by at least one data source for the 4-month period. For estimating prevalence, a violent incident reported by all three sources was treated in the same way as an incident reported by only one source. In determining the prevalence of violence, violence was defined as any physically assaultive action in the past four months towards another person, participation in a physical fight, and/or use of a weapon to threaten someone with physical harm.

Psychiatric symptoms were assessed using the Brief Symptom Inventory. Functioning impairment was measured using the Global Assessment of Functioning Scale (GAF). Information obtained from the three sources (self-report, collateral interview, and hospital record review) was used to evaluate the prevalence of alcohol and illicit drug use and associated problems. Substance use was defined as any use of alcohol or illicit drugs at least occasionally during the 4 months preceding hospital admission. Any problems (e.g., with family, friends, police, job, etc.) were recorded as well.

The prevalence rate of violence as a function of source was: 22% self-report, 26% collateral report, 29% hospital record. The composite index yielded an estimated prevalence of 51%. Of relevance to HCR-20 item H6, the prevalence of violence did *not* differ significantly by primary diagnosis. **However, of relevance to HCR-20 item H5, a history of substance abuse problems was associated with significantly elevated rates of violence. Among those with no history of substance abuse, there was a 43% prevalence of violence compared to 66% among those with a history of substance abuse ($\chi^2 = 14.37, df = 1, p < .001$). A logistic regression analysis examined the combined and relative effects of salient independent variables on the occurrence of violent behavior. The model showed that violence risk was significantly elevated among respondents who were young, victims of crime and had any recent alcohol or drug problem co-occurring with their psychiatric disorder. In this model, substance abuse emerged as the strongest predictor of violent behavior (OR = 2.12, 95% CI = 1.22 - 3.67, $p = .01$).**

8. Swartz, J.A., & Lurigio, A.A. (2004). Psychiatric diagnosis, substance use and dependence, and arrests among former recipients of supplemental security income for drug abuse and alcoholism. *Journal of Offender Rehabilitation*, 39, 19-38.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Items H6 and H9

The data used in the present study were collected as part of a larger, nine-site, longitudinal study of the effects of terminating the Supplemental Security Income for drug addiction and alcoholism (SSI/DA&A) on former benefits. Participants were randomly selected from among those who had received SSI/DA&A in 1996 and were between the ages of 21 and 59 years. At baseline, 276 participants were interviewed, but 21 were excluded from the study because they were receiving concurrent Social Security Disability Insurance (an exclusion criteria). Over a period of two years, four follow-up interviews at six-month intervals were attempted, for a total of up to five interviews per participant. At the 12-month follow-up, 228 participants were located and re-interviewed. At this time, standardized diagnoses of psychiatric disorders and substance use disorders were obtained and urine samples to test for current drug use were collected. Complete follow-up information was collected from 187 of the 228 participants interviewed at the 12-month follow-up. Participants also were interviewed at 18-month and 24-month follow-ups. The majority of the participants (84%) completed all interviews.

Demographic, SSI, and income data collected at the 12-month follow-up interview were used in the present analyses. Also at the 12-month interview, the Quick Diagnostic Interview Schedule

(QDIS) was administered to obtain lifetime and past-year psychiatric diagnoses, including substance dependence, based on DSM-III-R criteria. Past-year diagnoses were used in analyses for all disorders except antisocial personality disorder, which was assessed as a lifetime disorder.

Urine samples collected at 12-, 18-, and 24-month interviews were tested for a variety of drugs (alcohol was not tested via urinalysis). Past-year dependence on alcohol was used as the measure of current alcohol use.

After the interview-phase of the study was completed, arrest information covering the length of each participant's criminal career through the end of the 24-month follow-up was obtained from the Chicago Police Department. Violent offenses consisted of arrests for charges such as murder, aggravated criminal sexual assault, robbery, battery, assault, and unlawful use of a weapon. Arrest histories for property offenses, drug offenses and 'other' offenses were coded as well. For participants with an arrest in any category, the number days between the date of arrest and 1 January 1997 were calculated, the date the DA&A program was terminated.

The sample was mostly men (67%) and African American (91%). The mean age was 42.1 years ($SD = 8.4$). At least one positive drug test occurred for 68% of the sample. However, only 34% of the sample met the criteria for a past-year diagnosis of dependence on any drug (including alcohol).

Cox regression survival models were used to analyze the relationships between demographic characteristics, SSI status, psychiatric diagnosis, and drug use and time-to-arrest over the two-year follow-up for each of the four arrest categories. For violent offenses, being dependent on alcohol and having an antisocial personality disorder were each significantly and positively related to being arrested. **Of relevance to HCR-20 item H5, participants dependent on alcohol had almost five times (OR = 4.61, 95% CI = 1.67 - 12.75, $p < .01$) the chance of being arrested for a violent crime as those not dependent.**

Of relevance to HCR-20 item H6, participants with a diagnosis of major depression had only one-tenth the chance of being arrested for a violent offense compared to participants who were not diagnosed as being depressed. Similarly, there was no evidence of elevated arrest rates for violent crime among participants diagnosed with schizophrenia-spectrum disorders (OR = .35, 95% CI = .04 – 3.22 $p = n.s.$).

Of relevance to HCR-20 item H9, a diagnosis of antisocial personality disorder was associated with a three-fold increase in the chances of an arrest for a violent crime (OR = 3.03, 95% CI = 1.08 – 8.53, $p < .05$).

9. Wallace, C., Mullen, P., Burgess, P., Palmer, S., Ruschena, D. & Browne, C. (1998). Serious criminal offending and mental disorder. *British Journal of Psychiatry*, 172, 477-484.

→ Community Violence; Substance Abuse (Comorbidity)

* Article summary also appears under Item H9

The authors used a case linkage strategy (relying on two databases) to investigate the association between criminal offending and mental disorder. The first was the higher courts' database and comprised all findings of guilt in the County and Supreme Courts of Victoria (Australia) for 1993-1995, with 4156 individuals (3838 men) who committed 16,528 offenses. Convictions were subdivided into homicide, interpersonal, violence, sexual offenses, property offenses, arson, drug-related offenses, traffic offenses and 'other' offenses (i.e., fraud). The second database was the Victorian Psychiatric Case Register (VPCR), which lists nearly 200,000 individuals over the age of 15 with all their contacts. The register includes with over 95% of public outpatient, community and in-patient services. In 1995, 31,000 individuals had contact with the public services.

A single primary diagnosis was assigned through a diagnostic hierarchy, with schizophrenia taking precedence over affective psychosis. The remaining diagnoses, in descending order, were: affective disorders, personality disorders, substance misuse, and 'others.'

The associations between violent offenses and primary diagnosis for men were as follows: schizophrenia ($n = 66$; OR = 4.4, 95% CI = 3.46 – 5.66, $p < .001$); affective psychosis ($n = 16$; OR = 3.1, 95% CI = 1.86 – 5.0, $p < .001$); affective disorders ($n = 40$; OR = 4.1, 95% CI = 2.0 – 5.63, $p < .001$); personality disorders ($n = 51$; OR = 18.7, 95% CI = 14.08 – 24.71, $p < .001$); **substance misuse ($n = 169$; OR = 9.5, 95% CI = 8.14 – 11.18, $p < .001$)**; no diagnosis ($n = 151$; OR = 4.4, 95% CI = 3.74 – 5.21, $p < .001$); and residual diagnostic groups ($n = 89$; OR = 2.8, 95% CI = 2.29 – 3.50, $p < .001$).

The associations between sexual offenses and primary diagnosis for men were as follows: schizophrenia ($n = 18$; OR = 2.7, 95% CI = 1.70 - 4.32, $p < .001$); affective psychosis ($n = 7$; OR = 3.1, 95% CI = 1.44 – 6.40, $p < .01$); affective disorders ($n = 17$; OR = 4.0, 95% CI = 2.46 – 6.43, $p < .001$); personality disorders ($n = 18$; OR = 14.7, 95% CI = 9.21 – 23.52, $p < .001$); **substance misuse ($n = 29$; OR = 3.5, 95% CI = 2.42 – 5.08, $p < .001$)**; no diagnosis ($n = 75$; OR = 5.1, 95% CI = 3.98 – 6.40, $p < .001$); and residual diagnostic groups ($n = 88$; OR = 6.8, 95% CI = 5.43 – 8.45, $p < .001$).

The associations between violent offenses and primary diagnosis for women were as follows: schizophrenia ($n = 4$; OR = 4.3, 95% CI = 1.60 - 11.63, $p < .001$); affective psychosis ($n = 2$; OR = 3.4, 95% CI = 0.84 – 13.62, *ns*); affective disorders ($n = 6$; OR = 5.7, 95% CI = 2.50 – 12.79, $p < .001$); personality disorders ($n = 7$; OR = 49.6, 95% CI = 23.12 – 105.94, $p < .001$); **substance misuse ($n = 18$; OR = 55.7, 95% CI = 34.04 – 91.23, $p < .001$)**; no diagnosis ($n = 16$; OR = 6.6, 95% CI = 3.94 – 11.11, $p < .001$); and residual diagnostic groups ($n = 8$; OR = 3.6, 95% CI = 1.75 – 7.26, $p < .001$).

Of relevance to Item H5, men with schizophrenia were significantly more likely to have been convicted of violent and sexual offenses if they also had received a diagnosis of substance misuse. The associations between violent offenses and diagnostic categories with comorbid substance misuse were as follows: all schizophrenia ($n = 66$, OR = 4.4, 95% CI = 3.46 – 5.66, $p < .001$); schizophrenia without substance misuse ($n = 32$, OR = 2.4, 95% CI = 1.69 – 3.40, $p < .001$); schizophrenia with substance misuse ($n = 34$, OR = 18.8, 95% CI = 13.35 – 26.50, $p < .001$); all affective disorders ($n = 40$, OR = 4.1, 95% CI = 3.0 – 5.63, $p < .001$); affective disorders without substance misuse ($n = 26$, OR = 2.9, 95% CI = 1.95 – 4.23, $p < .001$); and affective disorders with substance misuse ($n = 14$, OR = 19.0, 95% CI = 11.15 – 32.29, $p < .001$).

The associations between sexual offenses and diagnostic categories with comorbid substance misuse were as follows: all schizophrenia ($n = 18$, OR = 2.7, 95% CI = 1.70 – 4.32, $p < .001$); schizophrenia without substance misuse ($n = 12$, OR = 2.0, 95% CI = 1.16 – 3.62, $p < .01$); **schizophrenia with substance misuse ($n = 6$, OR = 7.4, 95% CI = 3.29 – 16.46, $p < .001$)**; all affective disorders ($n = 17$, OR = 4.0, 95% CI = 2.4 – 6.43, $p < .001$); affective disorders without substance misuse ($n = 15$, OR = 3.8, 95% CI = 2.27 – 6.32, $p < .001$); **and affective disorders with substance misuse ($n = 2$, OR = 6.0, 95% CI = 1.50 – 24.34, $p < .01$).**

10. Walsh, E., Gilvarry, C., Samele, C., Harvey, K., Manley, C., Tattan, T., Tyrer, P., Creed, F., Murray, R., & Fahy, T. (2004). Predicting violence in schizophrenia: A prospective study. *Schizophrenia research*, 67, 247-252.

→ Community Violence

*Article summary also appears under Items H1 and C3 (Contradictory Findings)

Risk factors for assault were investigated among 271 patients with schizophrenia (diagnosed according to Research Diagnostic Criteria). Participants were recruited as part of the UK700 Case Management Study prior to discharge from the hospital or in the community. All participants had been hospitalized for psychotic symptoms at least twice and none had a primary diagnosis of substance abuse. Participants mostly were men (65%) and White (42%; 35% African-Caribbean; 22% 'other'). The mean age was 38 years ($SD = 12$ years). The average length of illness was 11 years ($SD = 9$ years).

Psychiatrists and research psychologists interviewed participants at baseline and at a 2-year follow-up. The following measures were administered at baseline: the Operational Criteria Checklist for Psychotic Illness to produce diagnoses; the World Health Organization Life Chart was used to assess clinical history over the two years before study entry; the Scale for Assessment of Negative Symptoms; the National Adult Reading Test; the Lancashire Quality of Life Profile; and the Personality Assessment Schedule. Information about alcohol and drug abuse was elicited via self-report. Alcohol abuse was considered present if more than 2 units of alcohol per day were consumed by women and 3 units per day by men. Illegal drug use was coded as none, one, and two or more illegal drugs taken in the past year. Criminal records, including violent and non-violent crimes, were obtained for all subjects from the British Home office.

The criterion variable was actual physical contact with another person regardless of severity or resulting injury. Three data sources were combined to produce a binary outcome measure for each patient: self-report, case manager report, and case records. Scoring positive on any of these indicated a positive score for assault.

Outcome on assault was available for all patients from at least one data source. Over 2 years, 69 (25%) participants physically assaulted another person. In addition, 40 (14%) participants reported violent behavior, 33 (12%) participants were identified as being violent in their case notes, and 36 (13%) participants were reported violent by their case manager.

Logistic regression analyses that compared those who committed assault during the follow-up to those who did not revealed 4 of the 12 sociodemographic variables (under 40 years of age, receipt of special education, having committed assault in the last 2 years, having previous violent and nonviolent convictions) and 3 of the 10 clinical variables (younger age at onset of illness, having taken one or more illegal drugs during the previous year, and alcohol abuse) to discriminate significantly the assaulters and non-assaulters. Of these seven variables found to be univariately significant, four remained significant in a stepwise multivariate analysis that started with all univariately significant variables: assault over the past 2 years, a history of violent criminal convictions, receipt of special education, and significantly lower NART scores. Of relevance to HCR-20 Item H1, the odds ratio (adjusted for the other 3 significant variables just mentioned) of assault over the last 2 years was 2.33 (95% CI = 1.17 – 4.61, $p < .01$) and the odds ratio (adjusted) for history of violent conviction was 2.02 (95% CI = 1.04 – 3.87, $p < .05$).

Of relevance to HCR-20 Item H5, the odds ratio (adjusted) of alcohol (greater than or less than 2-3 units per day) was 3.55 (95% CI = 1.24 – 10.20, $p < .01$); this was the largest odds ratio in the multivariate model.

11. Wessely, S. (1998). The Camberwell study of crime and schizophrenia. *Social Psychiatry & Psychiatric Epidemiology*, 33, S24-S28.

→ Community General Criminality

*Article summary also appears under Items H3, H4, and H6

In this population-based study of an incident cohort, participants ($N = 538$) with an ICD-9 diagnosis of schizophrenia or related disorders were identified from a cumulative case register in operation between 1964 and 1984 that records all contacts with mental health services and/or professionals (i.e., the Camberwell Psychiatric Case Register). Controls were chosen from the same case register as the cases and were matched by gender, age band, and year in which s/he joined the register. That is, cases were compared not with the general population, but with those with other mental disorders but excluding psychosis.

Records were obtained from various sources and included details of all hospital admissions and prison sentences. Dates of migration and dates of death were recorded in order to adjust for time at risk in all analyses. Outcome data were obtained from the central criminal register held by the Home Office (i.e., a record of all convictions, but not arrests.).

To compare rates of offending between schizophrenics and controls, rate ratios were calculated using the person years at risk. Confounding effects of social class and ethnicity were controlled for using Poisson regression after tests of heterogeneity. The rate ratio for assault and serious violence among men was 2.1 (95% CI = 1.5 - 2.9), $p < .001$ and among women was 3.1 (95% CI = 1.3 - 7.4), $p = .005$.

Unadjusted odds ratios were calculated to determine the strength of the association between a variety of factors and the chances of acquiring a first conviction. Of relevance to HCR-20 items H3 and H4, factors that decreased the risk were being female, being married, or having a job. Factors that increased the risk were having schizophrenia, being unemployed, belonging to an ethnic minority, being male, being a substance abuser and being born later. **Of relevance to HCR-20 items H5 and H6, Cox's proportional hazard analyses ($n = 1076$) to examine independent predictors of the risk of first conviction indicated that having schizophrenia (as opposed to any other mental disorder) exerted an independent effect (hazard ratio = 1.4, 95% CI = 1.0 - 2.0, $p = .047$), but less than the other variables examined, such as substance abuse (hazard ratio = 2.5, 95% CI = 1.7 - 3.5, $p = .001$) and ethnicity (hazard ratio = 2.3, 95% CI = 1.6 - 3.2, $p = .001$).**

Additional Relevant Sources Supportive of H5 – Abstracts Provided

1. Boles, S. M., & Johnson, P. B. (2001). Violence among comorbid and noncomorbid severely mentally ill adults: A pilot study. *Substance Abuse, 22*, 167-173.

Examined the relationship between substance dependence and violence in a sample of 42 Ss (23 males and 19 females, aged 20-62 yrs). Almost 40% of the Ss reported perpetrating at least one violent act in the past 12 mo. Comorbid Ss were over 4.5 times more likely to commit a violent act in the past 12 mo than noncomorbid Ss. Substance dependence was also more frequently associated with perpetration of a violent act by female than by male Ss and by Caucasian than by African American Ss. Comorbid mentally ill Ss appear more likely to perpetrate violent acts than those with mental illness alone. The dangers of substance dependence in terms of the perpetration of violence may not be in mental illness or substance dependence alone but in their co-occurrence. Further investigation is needed to assess risk factors for violence and victimization in multiple environmental and situational domains. It will be important to explore the moderating effects of gender and race on the co-occurrence of mental illness, substance dependence, and the perpetration of violent acts.

2. Cooke, D. J., & Michie, C. (1998). Predicting recidivism in a Scottish prison sample. *Psychology, Crime & Law, 4*, 169-211.

Describes a prospective study of recidivism based on a sample of 308 Scottish prisoners who were interviewed between November 1989 and June 1991. The authors outline the relevance that recidivism studies has for the criminal justice system. The general difficulties of defining and measuring reoffending are discussed and the particular difficulties of doing recidivism studies using Scottish data sources are also outlined. Two forms of recidivism are considered: reconviction and reimprisonment. The authors describe 3 forms of analyses: (1) survival curves are plotted; (2) simple univariate comparisons between those who recidivate and those who do not are made; and (3) multivariate prediction equations are developed. In conclusion, a set of useful predictor variables are identified. Key variables extracted from criminal record data as well as statistical methods used for logistic regression analyses are appended.

3. French, M. T., McGeary, K. A., Chitwood, D. D., McCoy, C. B., Inciardi, J. A., & McBride, D. (2000). Chronic drug use and crime. *Substance Abuse, 21*, 95-109.

Estimated the relationships between 3 categories of drug use and 4 measures of criminal activity using the 1993 and 1995 waves of the National Household Surveys on Drug Abuse (NHSDA). It was hypothesized that drug users had higher rates of criminal activity relative to nondrug users and, among drug users, chronic drug users had more criminal activity compared to casual drug users. Bivariate and multivariate analyses were used to estimate the relationships between chronic drug use and various measures of criminal activity. Measures of criminal justice system contact and criminal activity included ever arrested, arrested during the previous year, commission of a predatory crime during the previous year, and commission of a property crime during the previous year. The analysis was conducted separately for males, females, and age groups (ages 12-17, 18-24, 25-34, and 35-65 yrs), and it distinguished between chronic drug users, nonchronic drug users, and nondrug users. The results consistently showed a significant

linear relationship between criminal activity and frequency of drug use. It is concluded that these findings have implications regarding the potential reduction in predatory and property crime that could occur from a decrease in drug use.

4. Fulwiler, C., Grossman, H., Forbes, C., & Ruthazer, R. (1997). Early-onset substance abuse and community violence by outpatients with chronic mental illness. *Psychiatric Services, 48*, 1181-1185.

Examined the relationship between violence and substance abuse among 64 outpatients with chronic mental illness (mean age 41 yrs) living in the community. All referrals to an urban assertive community treatment team over a 1-yr period were evaluated using a standardized intake protocol. Ss with a history of violence were compared with the remaining Ss on clinical and demographic variables. 58% of the Ss had a history of violence in the community. The only significant differences between those with a history of violence and those without involved alcohol or drug use. The single best predictor of violence was the onset of alcohol or drug abuse in late childhood or early adolescence. Very early onset of substance abuse among people who developed mental illness was associated with the greatest risk of community violence. Some of the causal determinants of violence in this sample may precede the onset of adult mental illness.

5. Hartwell, S. W. (2004). Comparison of offenders with mental illness only and offenders with dual diagnoses. *Psychiatric Services, 55*, 145-150.

The study compared offenders who had severe mental illness only and offenders who had severe mental illness and substance abuse problems--dual diagnoses--to determine whether these groups differed. Offenders with dual diagnoses who were involved with the criminal justice system at different levels were compared to explore their profiles and experiences after release. Secondary data collected on offenders who had diagnoses of severe mental illness and of substance abuse in Massachusetts were used to examine sociodemographic, clinical characteristics, and criminal justice characteristics, service needs, and community reentry experiences in the first three months postrelease of 265 offenders with major mental illness and 436 with dual diagnoses. Offenders with dual diagnoses were more likely to be female and to have a history of being on probation and of using mental health services. They were also more likely to return to correctional custody. The data do not suggest that offenders with dual diagnoses have a distinct clinical background, but rather that substance abuse is an important feature that affects their real or perceived level of functioning.

6. Hodgins, S., Lapalme, M., & Toupin, J. (1999). Criminal activities and substance use of patients with major affective disorders and schizophrenia: A 2-year follow-up. *Journal of Affective Disorders, 55*, 187-202.

Examined criminal activity and substance use of 30 male patients (aged 18-55) with major affective disorders and 74 with schizophrenia in a 2 yr follow-up study. At discharge, Ss were intensively assessed including diagnoses using Schedule for Schizophrenia and Affective Disorders and Research Diagnostic Criteria. During follow-up, alcohol and drug use were measured, subjectively and objectively. At discharge, the 2 groups were similar as to secondary diagnoses of antisocial personality disorder, drug abuse/dependence, socio-demographic

characteristics, and criminal history, but more of the patients with major affective disorders than those with schizophrenia had a history of alcohol abuse/dependence. During the follow-up period, the 2 groups were similar as to rehospitalization, treatment intensity, and substance use. By the end of the follow-up period, 33% of the Ss with major affective disorders and only 15% of those with schizophrenia had committed crimes, most violent. Co-morbid antisocial personality disorder was associated with criminality among the Ss with schizophrenia but not among those with major affective disorders. Among these latter Ss, drug use and the intensity of outpatient care were associated with violent criminality.

7. Krakowski, M., & Czobor, P. (2004). Gender differences in violent behaviors: Relationship to clinical symptoms and psychosocial factors. *American Journal of Psychiatry*, *161*, 459-465.

Objective: Men are more violent than women in the general population, but this has not been found to be the case among psychiatric inpatients. The reason for this exception is poorly understood. The present study investigated gender differences in violent behaviors among patients with major psychiatric disorders. It examined various clinical symptoms and psychosocial factors to determine their differential impact on violence in men and women. Method: Physical assaults and verbal assaults committed by psychiatric inpatients were recorded prospectively. Patients whose violent incident occurred during their first 2 months of hospitalization were eligible for the study. Patient history of community violence was also obtained. Psychiatric symptoms and ward behaviors were assessed upon entry into the study and after 4 weeks. Results: A similar percentage of women and men had an incident of physical assault in the hospital. Among the patients entered into the study, the women had a much higher level of verbal assaults throughout the evaluation period and a higher level of early physical assaults (i.e., within the first 10 days of the 4-week study period). Positive psychotic symptoms were more likely to result in assaults in women than in men. Physical assaults in the community, on the other hand, were more common in men and were associated with substance abuse, property crime, and a history of school truancy. Conclusions: There are gender differences in the patterns of violent behavior among patients with major psychiatric disorders. Furthermore, psychiatric symptoms and psychosocial risk factors have a different impact on this behavior in men and women. This has important implications for the prediction and differential treatment of violent behavior.

8. Martin, S. E., & Bryant, K. (2001). Gender differences in the association of alcohol intoxication and illicit drug abuse among persons arrested for violent and property offenses. *Journal of Substance Abuse*, *13*, 563-581.

Examined the effects of gender on associations of alcohol intoxication and drug abuse with violent and other crimes, as well as specific offenses within each crime type. 9,242 males and 2,594 females (aged 15-82 yrs) who had been arrested for violent and property offenses completed interviews concerning drug and alcohol usage. Additional collected data included urine samples assessed for alcohol, cocaine, marijuana, and other drugs. Results show that both gender and alcohol intoxication were significantly related to arrest for a violent offense. However, intoxication effects, in the absence of cocaine, were 3+ times as great for female than male Ss. The combined effects of alcohol and cocaine predicted a property offense for female Ss but were insignificant for males. It is concluded that intervention strategies need to focus on

reducing alcohol intoxication as well as illicit drug use, in order to achieve further reductions in violent crime.

9. Miles, H., Johnson, S., Amponsah-Afuwape, S., Leese, M., Finch, E., & Thornicroft, G. (2003). Characteristics of subgroups of individuals with psychotic illness and a comorbid substance use disorder. *Psychiatric Services, 54*, 554-561.

The co-occurrence of severe mental illness and substance use disorder (SUD), or dual diagnosis, is prevalent and is associated with significant clinical and social problems. The present study examined whether subgroups defined by their main substances of misuse were heterogeneous. The primary hypothesis was that users of stimulants, such as cocaine or amphetamines, would be characterized by especially high rates of inpatient admission, violence, and self-harm. Case managers' ratings were used to identify 233 individuals (mean age 31 yrs) with serious mental illness and comorbid SUD or dependence who were being treated by 13 community mental health teams in South London. 78 Ss were classified as alcohol misusers only, 52 as alcohol and cannabis users, 29 as users of cannabis only, and 55 as stimulant users. No significant differences were found between subgroups in the use of inpatient services and lifetime history of self-harm, but there was a significant difference in lifetime history of violence, which was more frequent among stimulant users. Alcohol users were older and more likely to be White, but otherwise few differences between subgroups were suggested by exploratory analyses.

10. Putkonen, H., Komulainen, E. J., Virkkunen, M., Eronen, M., & Lönnqvist, J. (2003). Risk of repeat offending among violent female offenders with psychotic and personality disorders. *American Journal of Psychiatry, 160*, 947-951.

The aim of this study was to examine the rate of criminal recidivism among female homicide offenders evaluated by forensic psychiatrists, to compare this rate with that of other violent female offenders, and to analyze the explanatory variables of recidivism. **METHOD:** This was a retrospective study of all women ($N = 132$) sent for forensic psychiatric examination after being convicted of homicide or attempted homicide in Finland during 1982-1992; subjects were followed up until mid-1999. Data were collected from the national crime register, the prisoner record, and Statistics Finland. The authors compared the rate of violent repeat offending in this group with that of other violent women and analyzed the explanatory variables of recidivism. **RESULTS:** During the follow-up period, 23% of the study group committed a repeat offense, 15% of which were violent and 3% of which were homicides. Almost half of all repeat offenses occurred within the first 2 years after the index offense. There was no statistically significant difference in violent recidivism between the study group and other violent female offenders. Of those who committed repeat offenses, 81% were diagnosed with a personality disorder, and 10% were diagnosed with psychosis. Criminality prior to the index event...

11. Richardson, A., & Budd, T. (2003). Young adults, alcohol, crime and disorder. *Criminal Behavior & Mental Health, 13*, 5-17.

This paper examines the relationship between binge drinking and criminal and disorderly behavior among 18-24 yr olds. Secondary analysis was undertaken of the 1998/1999 Youth Lifestyles Survey, a large-scale, representative, household survey of 12-30 yr olds living in

England and Wales. Binge drinking, and especially male binge drinking, among 18-24 yr olds is statistically related to offending behavior. In the 12 months prior to interview 39% of binge drinkers admitted to committing an offense and 60% admitted criminal and/or disorderly behavior during or after drinking alcohol. Multivariate analysis found that binge drinking remains strongly associated with criminal and disorderly behavior even after taking other relevant factors into account. Individuals who got drunk at least once a week had more than five times the odds of being involved in fighting or violent crime. For offenses or disorderly behavior that took place during or after drinking alcohol an individual had a seven times greater chance of breaking or damaging something and a five times greater chance of being involved in a fight if he/she got drunk at least once a week. These findings suggest that frequency of drunkenness is a better predictor of offending behavior than frequency of drinking per se.

12. Robbins, P. C., Monahan, J., & Silver, E. (2003). Mental disorder, violence, and gender. *Law & Human Behavior*, 27, 561-571.

Recent studies have reported comparable rates of violence among men and women with mental disorder, raising important issues for clinical risk assessment. This study examines the relationship between gender and violence using data from the MacArthur Violence Risk Assessment Study. Patients in acute psychiatric wards were interviewed 5 times over the year following their discharge to the community. Results showed some differences between men and women in the violence committed immediately following discharge, with rates for men being higher. But the prevalence of violence over the 1 year was similar for female and male discharged patients. However, there were substantial gender differences in the situational context of the violence committed. Men were more likely to have been drinking or using street drugs, and less likely to have been adhering to prescribed psychotropic medication, prior to committing violence. The violence committed by men was more likely to result in serious injury than the violence committed by women, and men were more likely than women to be arrested after committing a violent act. Women were more likely to target family members and to be violent in the home.

13. Steadman, H. J., Mulvey, E. P., Monahan, J., Robbins, P. C., Appelbaum, P. S., Grisso, T., Roth, L.H. & Silver, E. (1998). Violence by people discharged from acute psychiatric inpatient facilities and by others in the same neighborhoods. *Archives of General Psychiatry*, 55, 393-401.

Examined the prevalence of community violence in a sample of 18-40 yr olds discharged from acute psychiatric facilities at 3 sites. At 1 site, a comparison group of other neighborhood residents was also assessed. 1,136 male and female patients with mental disorders were monitored for violence to others every 10 wks during their 1st yr after discharge. Prevalence rates for violence were derived from patient self report, reports of collateral informants, and official agency records. The comparison group of 519 people living in the neighborhoods in which the patients resided after hospital discharge were interviewed once about violence in the past 10 wks. Results show that the patient sample exhibited significantly higher rates of alcohol or drug abuse symptoms than the community group during the 1st 4 10-wk followup periods. In terms of violence and other aggressive acts, there were significant main effects for these symptoms. When the sample was disaggregated into those with and without *Michigan*

Alcoholism Screening Test and *Drug Abuse Screening Test* symptoms, a significant effect of patient status was found for those Ss with symptoms.

14. Swartz, M. S., Swanson, J. W., Hiday, V. A., Borum, R., Wagner, R., & Burns, B. J. (1998). Taking the wrong drugs: The role of substance abuse and medication noncompliance in violence among severely mentally ill individuals. *Social Psychiatry & Psychiatric Epidemiology*, *33*, S75-S80.

Examined potential predictors of serious violence among persons with severe mental illness (SMI), with a specific focus on the joint effect of substance abuse and medication noncompliance. 331 involuntarily admitted inpatients with SMI awaiting a period of court-ordered outpatient treatment (and, whenever feasible, family members or other informants) were interviewed. In addition, complementary data were gathered by review of involuntary commitment records and hospital records. Data collection included sociodemographic characteristics, illness history, clinical status, medication adherence, substance abuse, and violent behavior during the 4 mo preceding hospitalization. The combination of medication noncompliance and substance abuse was a significant predictor of serious violent acts in the community. Ss who had problems with both alcohol and illicit drug abuse appear to be at greatest risk for violence. These results suggest that reducing violence risk among Ss with SMI requires an aggressive approach to improving medication adherence in the context of integrated mental health and substance abuse treatment.

15. Swartz, M. S., Swanson, J. W., Hiday, V. A., Borum, R., Wagner, H. R., & Burns, B. J. (1998). Violence and severe mental illness: The effects of substance abuse and nonadherence to medication. *American Journal of Psychiatry*, *155*, 226-231.

331 involuntarily admitted inpatients (aged 18+ yrs) with severe mental illness who were awaiting a period of outpatient commitment were interviewed to gather data on sociodemographic characteristics, illness history, clinical status, medication adherence, substance abuse, insight into illness, and violent behavior during the 4 mo prior to hospitalization. Associations between serious violent acts and a range of individual characteristics and problems were analyzed by multivariate logistic regression. The combination of medication noncompliance and alcohol or substance abuse problems was significantly associated with serious violent acts in the community, after sociodemographic and clinical characteristics were controlled.

16. Tengström, A., Hodgins, S., Grann, M., Långström, N., & Kullgren, G. (2004). Schizophrenia and criminal offending: The role of psychopathy and substance use disorders. *Criminal Justice & Behavior*, *31*, 367-391.

This study investigated the associations of psychopathy and substance use disorders (SUDs) with criminal offending among 202 men with schizophrenia and 78 men with a primary diagnosis of psychopathy. Comparisons among six groups of offenders indicated that non-mentally ill offenders diagnosed with psychopathy committed the highest numbers of offenses per year at risk. Among offenders with schizophrenia, those with high psychopathy scores committed more crimes than those with low psychopathy scores. Among non-mentally ill offenders with

psychopathy and schizophrenic offenders with high psychopathy scores, those with and without SUDs committed, on average, similar numbers of offenses. These findings suggest that among offenders with psychopathic traits, the traits, not substance abuse, are associated with criminal offending.

17. Tiihonen, J., Isohanni, M., Raesaenen, P., Koiranen, M., & Moring, J. (1997). Specific major mental disorders and criminality: A 26-year prospective study of the 1966 northern Finland birth cohort. *American Journal of Psychiatry*, 154, 840-845.

The purpose of the study was to examine the quantitative risk of criminal behavior associated with specific mental disorders. An unselected 1966 birth cohort 12,058 Ss in Northern Finland was prospectively studied until the end of 1992. The investigation started during the mothers' pregnancy, and the data on the Ss' family characteristics, mental and physical development, living habits, psychiatric morbidity, and criminal records were gathered at various times. The prevalence of offenses was the highest among males with alcohol-induced psychoses and male schizophrenic Ss with coexisting alcohol abuse, and more than half of the schizophrenic offenders also had problems with alcohol. 11 (7%) of the 165 Ss who committed violent crimes were diagnosed as psychotic. Male schizophrenic Ss had a moderately high risk for violent offenses, but the risk for other types of crimes was not elevated significantly. Risk of criminal behavior was significantly higher among Ss with psychotic disorders, even though the socioeconomic status of the childhood family was controlled. The higher risk for violent behavior was associated especially with alcohol-induced psychoses and with schizophrenia with coexisting substance abuse.

Narrative Review of H5

1. Friedman, A. S. (1998). Substance use/abuse as a predictor to illegal and violent behavior: A review of the relevant literature. *Aggression & Violent Behavior, 3*, 339-355.

Reviews the available literature on alcohol and drug use/abuse and psychopathology as predictors of violent behavior (VB) and criminally violent acts. The preponderance of the research evidence supports the conclusion that abuse of certain types of illicit drugs, separately from the abuse of alcohol, predisposes to subsequent VB. The relationship of cocaine/crack to violent crime has been established more clearly for users of crack in inner city areas than it has for users of other forms of cocaine. In regard to race/ethnic or SES factors, the most clearly established is a higher proportion of young Black males, compared to other race/ethnic groups, actively involved in dealing cocaine/crack in inner city poverty areas. As for gender differences, alcohol abuse as a predictor to and a precipitant of VB, is more clearly established for males than for females. Drug abuse, as distinct from alcohol abuse, has been found to predict subsequent VB, for both sexes. The combination of substance use and psychopathology appears more likely to predict later VB in females. Psychopathology and mental health problems are less likely to predict occurrence of either VB or criminality in the future than are either alcohol abuse or drug abuse.

2. Lipsey, M. W., Wilson, D. B., Cohen, M. A., & Derzon, J. H. (1997). Is there a causal relationship between alcohol use and violence? A synthesis of evidence. In M. Galanter (Ed.), *Recent Developments in Alcoholism*, vol. 13: Alcohol and violence: Epidemiology, neurobiology, psychology, family issues (pp. 245-282). New York, NY, US: Plenum Press.

Reviews the evidence bearing on the question of whether those individuals who consume alcohol have an increased probability of subsequent violent behavior / 4 bodies of relevant research are examined: experimental studies with animals, experimental studies with humans, individual-level correlational studies, and macro-level correlational studies / [discuss] whether alcohol plays a causal role in [violent behavior] / various limitations, deficiencies, and ambiguities of available research that contribute to this state of affairs are discussed / focus is on the psychopharmacological effects of alcohol ingestion upon the behavior of drinkers, including both their directly aggressive behavior and other behavior that might be closely related to the likelihood of those persons engaging in violence, e.g., risk-taking

3. Parker, R. N., & Auerhahn, K. (1998). Alcohol, drugs, and violence. *Annual Review of Sociology, 24*, 291-311.

A review of the scientific literature on the relationship between alcohol and violence and that between drugs and violence is presented. A review and analysis of 3 major theoretical approaches to understanding these relationships are also presented. A number of conclusions are reached on the basis of these efforts. First, despite a number of published statements to the contrary, no significant evidence was found suggesting that drug use is associated with violence. Second, there is substantial evidence to suggest that alcohol use is significantly associated with violence of all kinds. Third, recent theoretical efforts reviewed here have, despite shortcomings, led to significant new understanding of how and why alcohol and drugs are related to violence.

Fourth, these theoretical models and a growing number of empirical studies demonstrate the importance of social context for understanding violence and the ways in which alcohol and drugs are related to violence. Fifth, the shortcomings of these theoretical models and the lack of definitive empirical tests of these perspectives point to the major directions where future research on the relationship between alcohol and violence, and between drugs and violence, is needed.

4. Pihl, R. O., & Hoaken, P. N. S. (1997). Clinical correlates and predictors of violence in patients with substance use disorders. *Psychiatric Annals*, 27, 735-740.

The normal inhibition of social mechanisms inhibiting violence, alteration of the psychomotor system, alteration of the pain system, and alteration of the cognitive control system are conceptualized as physiologic effects of substance abuse that would increase the likelihood of violence seen in patients. When ascertained by broad general surveys, substance abuse disorders are among the most prevalent single and comorbid psychiatric disorders. The effects of alcohol, benzodiazepines, psychostimulants, PCP, opiates, anabolic steroids, and cannabis are characterized in this model of the relationship between aggression and drugs; and implications are drawn for treatment.

5. RachBeisel, J., Scott, J., & Dixon, L. (1999). Co-occurring severe mental illness and substance use disorders: A review of recent research. *Psychiatric Services*, 50, 1427-1434.

Reviewed research studies from the 1992-1997 that have contributed to knowledge about effective assessment, diagnosis, course of illness, and treatment approaches for patients with comorbid severe mental illness and substance use disorders. Research on special populations, including women, persons infected with HIV, and violent patients, is highlighted. PsycINFO, Silver Platter, and MEDLINE databases were used to search for English-language studies published in the US and other countries. Information was sought on epidemiology, screening and assessment strategies, illness course, models of treatment delivery, and cost of care. Results show that estimates of the prevalence of substance use disorders vary by population, a higher prevalence among persons with severe mental illness has been confirmed. Routine screening for substance use disorders among this population has become accepted standard of care. The course of severe mental illness is negatively influenced by a substance use disorder, and an integrated approach to, the treatment of both disorders is accepted to be the most promising treatment strategy. Components of this strategy include harm reduction, treatment in stages, motivational interviewing, cognitive-behavioral interventions, and modified 12-step self-help groups.

6. Soyka, M. (2000). Substance misuse, psychiatric disorder and violent and disturbed behavior. *British Journal of Psychiatry*, 176, 345-350.

Epidemiological studies suggest schizophrenia and substance misuse to be associated with a higher rate of violence and crime. The literature was evaluated to assess whether people with schizophrenia who use substances have an increased risk for violence and disturbed behavior. A detailed Medline analysis was performed and relevant studies were reviewed. A large number of studies have linked substance misuse in schizophrenia with male gender, high incidence of homelessness, more pronounced psychotic symptoms, non-adherence with medication, poor prognosis, violence, and aggression. The latter has been proven by clinical, epidemiological, and

longitudinal prospective studies of unselected birth cohorts. The increased risk for aggression and violent acts cannot be interpreted only as a result of poor social integration. Male gender, more severe psychopathology, a primary antisocial personality, repeated intoxications, and non-adherence with treatment are important confounding variables. Substance misuse has been shown consistently to be a significant risk factor for violence and disturbed behavior. Future research should try to evaluate possible pharmacological and psychosocial treatment approaches.

7. Tengström, A., Hodgins, S., Grann, M., Långström, N., & Kullgren, G. (2004). Schizophrenia and criminal offending: The role of psychopathy and substance use disorders. *Criminal Justice and Behavior*, *31*, 367-391.

This study investigated the associations of psychopathy and substance use disorders (SUDs) with criminal offending among 202 men with schizophrenia and 78 men with a primary diagnosis of psychopathy. Comparisons among six groups of offenders indicated that non-mentally ill offenders diagnosed with psychopathy committed the highest numbers of offenses per year at risk. Among offenders with schizophrenia, those with high psychopathy scores committed more crimes than those with low psychopathy scores. Among non-mentally ill offenders with psychopathy and schizophrenic offenders with high psychopathy scores, those with and without SUDs committed, on average, similar numbers of offenses. These findings suggest that among offenders with psychopathic traits, the traits, not substance abuse, are associated with criminal offending.

H6 Major Mental Illness

1. Arsenault, L., Moffitt, T.E., Caspi, A., Taylor, P.J., & Silva, P.A. (2000). Mental disorders and violence in a total birth cohort: Results from the Dunedin study. *Archives of General Psychiatry*, 57, 979-986.

→ Community Violence; Substance Abuse (Comorbid)

*Article summary also appears under Item H5

Participants were 961 young adults who comprised 94% of a total-city birth cohort (01 April 1972 through 31 March 1973) in New Zealand. There were slightly more boys in the original cohort (51.6%) and the majority of the participants were white. Participants were interviewed at 21 years of age. Mental disorders were assessed using the Diagnostic Interview Schedule, with a reporting period of 12 months before the interview. There was a range of Axis I diagnoses: (1) depression disorders (17.9%); (2) anxiety disorders (17.7%); (3) manic episode (2.0%); (4) eating disorders (1.4%); (5) alcohol dependence (9.8%); (6) marijuana dependence (9.5%); (7) schizophrenia-spectrum disorder (4.1%).

Two sources were used to collect information about violent behaviors at 21 years of age. First, court convictions for violence in all New Zealand and Australia courts were obtained by searching the central computer system of the New Zealand police. Thirty-nine participants (33 women and 6 men; 4.1% of the sample) were convicted of 107 violent offenses in the previous year. Second, self-report of violence committed during the past year were obtained using a private standardized interview developed for the National Youth Survey and National Institute of Justice multisite surveys, yielding a 7-item violence scale comprising the most common violent offenses (e.g., simple assault, aggravated assault, etc.). The violent group comprised the 92 participants (9.6% of the sample) who had self-reported 2 or more different violent offense types or had been convicted of a violent crime. Substance use before the violent offense was assessed during the Self-reported Delinquency Interview. Participants were asked to think about the most serious offense of the past year and to indicate whether or not they had been drinking or taking drugs two hours prior to that incident. The yes/no answers were summed to determine how many of the most serious incidents were committed when alcohol or illicit drugs had been consumed immediately prior to the incident.

Odds ratios, adjusted for SES and sex, for the risk for violent behaviors in the one-year before 21 years of age were calculated. Next, hierarchical logistic regression analyses controlling for SES, sex, and all other concurrent disorders were completed to examine the unique association between each mental disorder and violence perpetrated during that same time period. Individuals who met diagnostic criteria for any disorder were at risk of committing violence. Depression (OR = 2.9; 95% CI = 1.7 – 4.8) and anxiety disorders (OR = 1.8; 95% CI = 1.0 – 3.1) were related weakly to violence, but not after controlling for comorbidity (depression disorders: $\beta = .53$, SE = .31, OR = 1.7, 95% CI = .9 – 3.1; anxiety disorders: $\beta = -.01$, SE = .33, OR = 1.0, 95% CI = .5 – 1.9). Similarly, manic episodes (OR = 4.9; 95% CI = 1.6 – 14.9) and eating disorders (OR = 6.8; 95% CI = 1.8 – 25.2) were significantly associated with violence initially, but not after controlling for comorbidity (manic episodes: $\beta = 1.15$, SE = .64, OR = 3.2, 95% CI = .9 – 11.1; eating disorders: $\beta = 1.11$, SE = .73, OR = 3.0, 95% CI = .7 – 12.7). The authors noted that

they could not rule out an association of those disorders with violence because their low base rates in the sample rendered an interpretation hazardous.

Alcohol dependence (OR = 4.0; 95% CI = 2.4 - 6.8), marijuana dependence (OR = 6.9; 95% CI = 4.1 - 11.4) and schizophrenia-spectrum (OR = 5.4; 95% CI = 2.6-10.9) disorders had a robust association with violence. These factors were associated with violence uniquely and significantly even when controlling for demographic risk factors and all other comorbid disorders.

Individuals who were substance dependent and/or had schizophrenic-spectrum disorder constituted 18.3% of the total sample, but were 55.4% ($n = 51$) of the sample's 92 violent individuals. These individuals were responsible for 57.9% of the sample's 107 violent court convictions and 54.4% of the sample's 2403 self-reported violent offenses. In addition, 6.8% ($n = 12$) of the individuals with substance dependence and/or schizophrenia-spectrum disorder were recidivists (convicted for ≥ 2 violent offenses) according to court records, and 44.3% ($n = 78$) were recidivists according to self-report. In contrast, a lesser concentration of violence was observed among individuals who did not manifest schizophrenia-spectrum disorder or substance dependence. Individuals who did not meet diagnostic criteria for either of those conditions constituted 81.7% of the total sample but only 44.6% of the violent offenders. Moreover, they were responsible for 42.1% of the sample's violent court convictions and 45.6% of its self-reported violent offenses. Only .6% ($n = 5$) of individuals without schizophrenia-spectrum disorder or substance dependence were official recidivists; 18% ($n = 141$) recidivists according to self-report.

The following summary statistics are of particular relevance to HCR-20 items H5 and H6. Overall, 11.3% of the sample's risk of becoming a violent offender was uniquely attributable to alcohol dependence, 28.2% to marijuana dependence, and 9.6% to schizophrenia-spectrum disorder. The risk was more than doubled if two of these disorders at once were present, compared with having one of them: alcohol dependence plus schizophrenia-spectrum disorder (OR = 8.3; 95% CI = 3.2 - 23.4); alcohol plus marijuana dependence (OR = 11.7; 95% CI = 5.9 - 23.4); and marijuana dependence plus schizophrenia-spectrum disorder (OR = 18.4; 95% CI = 7.5 - 45.3).

2. Brennan, P.A., Mednick, S.A., & Hodgins, S. (2000). Major mental disorders and criminal violence in a Danish birth cohort. *Archives of General Psychiatry*, 57, 494-500.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Item H5

This epidemiological study investigated the relationship between each of the major mental disorders and criminal violence. Participants were drawn from a birth cohort of all individuals born in Denmark between 1 January 1944 and 31 December 1947. The final sample consisted of 173,668 men (51.7%) and 162,322 women (48.3%). Official arrest and conviction data through 1991 were collected from the Danish National Police Register in Copenhagen. For this study, arrest data was examined because all individuals suspected of committing a crime are arrested, regardless of mental status (this differs from some countries where the police may take an

individual to a hospital instead of arresting him/her). Only criminal index violent offenses were considered in the present study. Violent offenses included: murder (7.6% of total violent offenses); attempted murder (11.0%); rape (11.1%); violence against authority (e.g., assault on a police officer; 9.2%); assault (52.0%); domestic violence (0.09%); and robbery (8.2%). Mental health status was determined through records of psychiatric hospitalizations through 1991, which were obtained through the Danish Psychiatric Register at the Institute for Psychiatric Demography. Subjects were separated into diagnostic groups based on ICD-8 hospital discharge diagnoses. Subjects were assigned to a diagnostic group based on a hierarchy of diagnoses (from highest to lowest): schizophrenia; organic brain syndrome; affective psychoses; and other psychoses. Secondary diagnoses of substance abuse and personality disorder also were recorded.

Logistic regression analyses demonstrated that individuals with each type of major mental disorder were more likely than those who had never been hospitalized to have been arrested for a violent offense. Among men, the odds ratios were: schizophrenia (4.6, 95% CI = 3.8 – 5.6); organic psychosis (8.8, 95% CI = 7.4 – 10.4); affective psychosis (2.0, 95% CI = 1.4 – 2.8); and other psychoses (4.4, 95% CI = 3.6 – 5.3). Among women, the odds ratios were: schizophrenia (23.2, 95% CI = 14.4 – 37.4); organic psychosis (16.6, 95% CI = 8.34 – 32.6); affective psychosis (3.9, 95% CI = 1.7 – 8.9); and other psychoses (9.6, 95% CI = 6.1 – 15.0).

Pertaining to substance abuse, logistic regression analyses showed that both men and women with affective psychosis who did not have a secondary substance abuse diagnosis were not more likely to be arrested for violence than persons who had never been hospitalized (Men: OR = 1.2, 95% CI = 0.8 - 1.9; Women: OR = 2.3, 95% CI = 0.7 - 7.3). In addition, women with organic psychosis, but no secondary substance abuse diagnosis, were not more likely than women who had never been hospitalized to have a record of violent arrest (OR = 3.6, 95% CI = 0.5 - 25.6). All other associations between mental disorders and violence relationships remained significant for individuals with no secondary substance abuse diagnoses.

Logistic regression analyses also were conducted to examine the relationship between major mental disorders and violence when sociodemographic factors and secondary diagnoses were controlled simultaneously. For both men and women, all major mental health disorder groups remained significantly different from the nonhospitalized comparison group when controlling for demographic factors. When substance abuse was controlled for, the relationship between major mental disorder and violence was not significant for men and women with affective disorder, and for women with organic psychosis. Controlling for personality disorder did not change these results.

Of relevance to HCR-20 items H5 and H6, the major finding of this present study was that, overall, the risk of arrest for violent crime for both men and women with a major mental disorder diagnosis was reduced considerably when they did not present with co-occurring substance abuse.

3. Schanda, H., Knecht, G., Schreinzer, D., Stompe, T., Ortwein-Swoboda, G., & Waldhoer, T. (2004). Homicide and major mental disorders: A 25-year study. *Acta Psychiatrica Scandinavica*, *110*, 98-107.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Item H5

This study investigated the likelihood that participants with major mental disorders (MMDs) in Austria would commit a homicidal act that was associated with their illness. The rates of exculpations because of MMDs among 1087 homicide offenders in Austria during a 25-year period (1 January 1975 through 31 December 1999) were compared with the rates of the respective disorders in the general population. During the period of study, there were 96 “criminal commitments” (i.e., findings of non-responsibility) for murder or manslaughter (9.2% of all reported cases suspicious of homicide). Mental health files of the 96 exculpated mentally ill offenders were collected from the regional mental hospitals and/or from a central institution for the treatment of mentally ill offenders. The sample was divided into the following diagnostic categories: schizophrenia, major depressive episode, manic episode, delusional disorder. Two authors (G.K. and D.S) used these files to assign DSM-IV diagnoses to participants. Interrater reliability (Cohen’s Kappa) for the main diagnostic categories was 0.949. Nineteen offenders were excluded because their first diagnosis was one of mental retardation, personality disorder, substance related disorder or dementia, mental disorder/delirium due to general medical condition. This resulted in a final sample size of 77 exculpated offenders (53 men, 24 women) who were suffering from MMDs.

The association between homicide and MMDs was examined via odds ratios. The rates of offenders in each diagnostic category were compared with the rates of all other offenders without the respective diagnoses (e.g., rates of exculpated offenders who had schizophrenia and estimate of individuals in the general population with schizophrenia versus all other offenders and non-schizophrenic population, including the remaining diagnostic categories).

Of relevance to HCR-20 item H6, Schizophrenia was associated with an increased likelihood of homicide. Among men, the increased risk when adjusted for age was about six-fold (OR = 5.85, 95% CI = 4.28 - 8.01). Among women, the increased risk when adjusted for age was about 19-fold (OR = 18.83, 95% CI = 11.24 - 31.55).

Of particular relevance to HCR-20 item H5, substantial differences in the likelihood of homicide were observed when comorbid alcohol dependence was present. For individuals with schizophrenia-spectrum disorders: with comorbid alcohol dependence (OR = 20.70, 95% CI = 12.40 – 34.08); without comorbid alcohol dependence (OR = 7.08, 95% CI = 5.11 – 9.77). A similar, although less striking, pattern was observed when major depressive plus manic episodes were considered: with comorbid alcohol dependence (OR = 3.10, 95% CI = 1.26 – 7.15); without comorbid alcohol dependence (OR = .37, 95% CI = .18 - .74).

Finally, the total of MMDs was positively related with homicide in men (OR = 2.29, 95% CI = 1.72 - 3.04) and in women (OR = 6.42, 95% CI = 4.01 - 10.20). Even under consideration of comorbid alcohol abuse/dependence, these results remained significant, as the following odds

ratios (aggregate for both sexes) illustrated: MMD with alcoholism (OR = 7.58, 95% CI = 4.89 - 11.63); MDD without alcoholism (OR = 1.90, 95% CI = 1.43 - 2.51).

4. Stuart, H.L., & Arboleda-Florez, J.E. (2001). A public health perspective on violent offenses among persons with mental illness. *Psychiatric Services*, 52, 654-659.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Item H5

This study evaluated the extent to which persons with mental illness account for criminal violence in the community. The authors reanalyzed existing data that originally were collected for an investigation of the prevalence of DSM-III-R mental disorders in a pretrial population. There were 4,770 offenders admitted to a detention center in Western Canada during the study period (July 1992 through December 1992). Of these, 1,151 offenders were selected randomly from daily admission logs and were invited to participate in the study. The selected inmates were approached for an interview within 24 hours of admission to the facility prior to any bail hearings, forensic transfers, or other releases. The final sample comprised 1045 men and 106 women. The men and women did not differ significantly in age distribution (mean age = 28 years, $SD = 8.8$ years) and both had low education levels. The majority of participants were White (75%; 20% Aboriginal).

Participants were administered the SCID non-patient edition and modules B and C of the SCID patient edition. Interrater reliability for broad disorder categories ranged from .80 to 1 (partial kappa). Results presented were based on the one-month prevalence of the principal SCID diagnoses. To avoid inflating the prevalence of Axis II disorders, interviewers asked participants who received a diagnosis of antisocial personality disorder to complete the Psychopathy Checklist-Revised (PCL-R). Only participants who exceeded the recommended diagnostic threshold for the PCL-R were considered to have antisocial personality disorder and therefore considered to have met diagnostic criteria for an Axis II disorder.

Official police records and warrants of remand were used to obtain crime data. Violent offenses were operationalized as all crimes against persons. Nonviolent crimes were defined as crimes committed against property or victimless offenses. The total sample had accumulated 537 charges for violent crimes (this represented 10.8% of all crimes committed). A significantly larger proportion of men, compared to women, were charged with a violent offense (27% vs. 18%; $\chi^2 = 4.23$, $df = 1$, $p = .04$).

A total of 703 participants received a principal diagnosis of either an Axis I or an Axis II disorder. The most prevalent disorder type was psychoactive disorders (mostly alcohol related) and the least prevalent types were psychotic disorders. In general, the number of offenses allegedly perpetrated by offenders with mental disorders was proportionate to that of offenders with no disorders. Of relevance to HCR-20 item H5, offenders with substance use disorders accounted for almost half of all violent offenses (49%). Further, one of every two violent offenses was committed by a person with a primary substance use disorder, whereas one of every six violent offenses was committed by a person with a non-substance use disorder.

Of relevance to HCR-20 item H6, compared with offenders with no diagnosis, a significantly greater proportion of violent offenses were committed by offenders with a principal diagnosis of adjustment disorder ($\chi^2 = 11.1, df = 2, p = .001$) and a significantly smaller proportion of violent offenses were committed by offenders with a psychotic disorder ($\chi^2 = 4.2, df = 2, p = .04$).

The proportion of preventable violent offenses was calculated and was expressed as a percentage of all violent offenses in the sample. **Of further relevance to HCR-20 item H6, less than 3 percent of violent crimes could be attributed to persons with a mood, psychotic, anxiety, adjustment, or miscellaneous other Axis I disorder or an Axis II personality disorder.** Of relevance to HCR-20 item H5, an additional 7 percent of violent crimes could be attributed to individuals with a principal psychoactive substance use disorder. To couch these findings in a public health framework, one in ten violent crimes could have been prevented if these disorders did not exist.

5. Stueve, A., & Link, B. G. (1997). Violence and psychiatric disorders: Results from an epidemiological study of young adults in Israel. *Psychiatric Quarterly*, 68, 327-342.

→ Community Violence

Participants were selected from the Israeli population register and comprised a sample stratified on the basis of SES and ethnicity ($N = 2,741$). All participants were between the ages of 24 and 33 and had completed the Psychiatric Epidemiology Research Interview (PERI) and a modified version of the Schedule for Affective Disorders and Schizophrenia (SADS; referred to as SADS-I, for Israel).

Violent behavior was assessed using self-report measures of fighting and weapon use in the five-year period preceding the PERI interview. Psychiatric diagnoses were made using a modified version of the SADS interview and Research Diagnostic Criteria (RDC). Diagnoses were classified as follows: (1) psychotic disorders (i.e., schizophrenia, schizoaffective, unspecified functional psychosis, and major depression with psychosis); (2) bipolar disorders (i.e., bipolar I and II disorders and cyclothymia); (3) major depression without psychosis; (4) generalized anxiety disorder; and (5) phobias. Data regarding the onset and offset of episodes was used to determine whether a participant had the disorder during the five-year period when violence was evaluated. Participants were classified further into three categories: (1) those with neither a lifetime substance abuse nor an antisocial personality diagnosis; (2) those with a lifetime substance abuse diagnosis (SUD) but no antisocial personality disorder (APD); and (3) those with APD, with or without a lifetime SUD.

The unadjusted prevalence of recent fighting and weapon use was three to ten times higher among people diagnosed during the five-year interval with psychotic or bipolar disorders than among the control group. By contrast, respondents meeting criteria for non-psychotic major depression, generalized anxiety disorder or phobias were not more likely to report recent violence. More specifically, the percentage of participants who reported fighting and weapon

use, respectively, during the five-year period was: psychotic disorders (28.9; 11.1); bipolar disorders (23.7; 6.7); major depression without psychosis (11.0; 1.7); anxiety disorders (10.9; 1.3); phobias (7.8; 1.0); none of the above disorders (8.1; 1.1); total sample (9.5; 1.4). These results also were supported by logistic regression analyses that controlled for respondents' social and demographic characteristics (values not presented in the article).

SUD and APD increased the likelihood of violent behavior. **With respect to Item H6, as noted above, the prevalence of recent fighting and of weapon use also were elevated among participants with psychotic or bipolar disorders in the absence of comorbidity. More specifically, among participants with no lifetime SUD or APD, the percentage of participants who reported fighting and weapon use, respectively, during the five-year period was: psychotic/bipolar disorders (20.7; 4.4); non-psychotic major depression, anxiety disorder, or phobia (8.6; 1.0); none of the above disorders (7.0; 1.0). Among participants with lifetime SUD without APD, the percentage of participants who reported fighting and weapon use, respectively, during the five-year period was: psychotic/bipolar disorders (39.3; 18.3); non-psychotic major depression, anxiety disorder, or phobia (26.1; 4.2); none of the above disorders (25.1; 8.7). Among participants with APD, with or without SUD, the percentage of participants who reported fighting and weapon use, respectively, during the five-year period was: psychotic/bipolar disorders (93.4; 65.8); non-psychotic major depression, anxiety disorder, or phobia (56.2; 20.9); none of the above disorders (42.0; 13.3).**

Of relevance to Item H6, logistic regression analyses indicated that the association between psychotic and bipolar disorders and both fighting and weapon use remained statistically significant controlling for lifetime SUD, APD, demographic characteristics, and social desirability (assessed via the Crowne-Marlowe scale). For the criterion variables of fighting and weapon use, respectively, beta values were: psychotic/bipolar disorders (1.19, $p = .00$; 1.88, $p = .00$). The adjusted odds ratios comparing respondents with psychotic or bipolar disorders to those with none of the five types of psychiatric disorders assessed was 3.3 for fighting and 6.6 for weapon use. The association between the combined diagnoses of non-psychotic depression, anxiety disorder and phobias and both forms of violence was not statistically significant: fighting (beta = .27, $p > .10$); weapon use (beta = .16, $p = .10$).

6. Swartz, J.A., & Lurigio, A.A. (2004). Psychiatric diagnosis, substance use and dependence, and arrests among former recipients of supplemental security income for drug abuse and alcoholism. *Journal of Offender Rehabilitation*, 39, 19-38.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Items H5 and H9

The data used in the present study were collected as part of a larger, nine-site, longitudinal study of the effects of terminating the Supplemental Security Income for drug addiction and alcoholism (SSI/DA&A) on former benefits. Participants were randomly selected from among those who had received SSI/DA&A in 1996 and were between the ages of 21 and 59 years. At baseline, 276 participants were interviewed, but 21 were excluded from the study because they were receiving concurrent Social Security Disability Insurance (an exclusion criteria). Over a

period of two years, four follow-up interviews at six-month intervals were attempted, for a total of up to five interviews per participant. At the 12-month follow-up, 228 participants were located and re-interviewed. At this time, standardized diagnoses of psychiatric disorders and substance use disorders were obtained and urine samples to test for current drug use were collected. Complete follow-up information was collected from 187 of the 228 participants interviewed at the 12-month follow-up. Participants also were interviewed at 18-month and 24-month follow-ups. The majority of the participants (84%) completed all interviews.

Demographic, SSI, and income data collected at the 12-month follow-up interview were used in the present analyses. Also at the 12-month interview, the Quick Diagnostic Interview Schedule (QDIS) was administered to obtain lifetime and past-year psychiatric diagnoses, including substance dependence, based on DSM-III-R criteria. Past-year diagnoses were used in analyses for all disorders except antisocial personality disorder, which was assessed as a lifetime disorder.

Urine samples collected at 12-, 18-, and 24-month interviews were tested for a variety of drugs (alcohol was not tested via urinalysis). Past-year dependence on alcohol was used as the measure of current alcohol use.

After the interview-phase of the study was completed, arrest information covering the length of each participant's criminal career through the end of the 24-month follow-up was obtained from the Chicago Police Department. Violent offenses consisted of arrests for charges such as murder, aggravated criminal sexual assault, robbery, battery, assault, and unlawful use of a weapon. Arrest histories for property offenses, drug offenses and 'other' offenses were coded as well. For participants with an arrest in any category, the number days between the date of arrest and 1 January 1997 were calculated, the date the DA&A program was terminated.

The sample was mostly men (67%) and African American (91%). The mean age was 42.1 years ($SD = 8.4$). At least one positive drug test occurred for 68% of the sample. However, only 34% of the sample met the criteria for a past-year diagnosis of dependence on any drug (including alcohol).

Cox regression survival models were used to analyze the relationships between demographic characteristics, SSI status, psychiatric diagnosis, and drug use and time-to-arrest over the two-year follow-up for each of the four arrest categories. For violent offenses, being dependent on alcohol and having an antisocial personality disorder were each significantly and positively related to being arrested. Of relevance to HCR-20 item H5, participants dependent on alcohol had almost five times ($OR = 4.61$, 95% $CI = 1.67 - 12.75$, $p < .01$) the chance of being arrested for a violent crime as those not dependent.

Of relevance to HCR-20 item H6, participants with a diagnosis of major depression had only one-tenth the chance of being arrested for a violent offense compared to participants who were not diagnosed as being depressed. Similarly, there was no evidence of elevated arrest rates for violent crime among participants diagnosed with schizophrenia-spectrum disorders ($OR = .35$, 95% $CI = .04 - 3.22$ $p = n.s.$).

Of relevance to HCR-20 item H9, a diagnosis of antisocial personality disorder was associated with a three-fold increase in the chances of an arrest for a violent crime (OR = 3.03, 95% CI = 1.08 – 8.53, $p < .05$).

7. Tiihonen, J., Isohanni, M., Raesaenen, P., Koiranen, M., & Moring, J. (1997). Specific major mental disorders and criminality: A 26-year prospective study of the 1996 northern Finland birth cohort. *American Journal of Psychiatry*, 154, 840-845.

→ Community Violence

The authors reported on a longitudinal, 26-year prospective study of an unselected birth cohort that comprised 12,058 infants born in Finland during 1966. Data on their health and development were recorded from morbidity and mortality registers at regular intervals until the age of 26. Final case ascertainment was completed at the end of 1993 from a register that includes all patients discharged from all hospitals in Finland. Clinical information was obtained from the case records. The Operational Criteria Checklist for Psychotic Illness was completed and the associated operational criteria program was used to provide diagnoses according to DSM-III-R criteria. In addition, the clinical data were transferred to a separate checklist to evaluate the DSM-III-R criteria for schizophrenia. Both the operational criteria and the DSM-III-R checklist diagnoses were then rechecked against clinical records by two of the authors (M.I. and J.M.) to establish consensus and a final operational diagnosis.

Criminal history information was collected from files maintained by the Ministry of Justice for those between 15 and 25 years of age. Violent crimes included homicides, assault, robbery, arson, or violation of domestic peace. There were 5,636 and 5,217 male and female participants, respectively, who were alive at the age of 15 years and living in Finland. Five hundred three men and 53 women had committed at least one crime resulting in a criminal record by the end of 1992. There were 165 men who committed violent crimes.

Of the 5,636 male participants, 351 had a psychiatric diagnosis, and 86 had a major mental disorder. Of the 165 violent offenders, 11 (7%) were diagnosed as psychotic. Of the 503 male offenders, 116 (23%) had a psychiatric diagnosis (27 had a major mental disorder). The majority (62%; $n = 72$) had committed their first crime before being diagnosed as having a psychiatric illness.

There were 43 women diagnosed with a major mental disorder: schizophrenia ($n = 25$); schizophreniform and schizoaffective disorders ($n = 10$); none with paranoid, schizoid, or schizotypal personality disorder; mood disorders with psychotic features ($n = 3$); organic mental syndrome or disorder ($n = 3$); and paranoid or other psychosis ($n = 2$). Only one female criminal offender was diagnosed with a major mental disorder (organic mental syndrome or disorder).

Forty percent ($n = 6$) of male schizophrenic participants with alcohol problems were criminal offenders, compared with 11% ($n = 4$) of those without alcohol problems. The prevalence of criminality among mentally healthy men was 7% ($n = 387$). Four (27%) of the 15 male schizophrenic participants with coexisting alcohol abuse committed violent offenses, compared

with three (8%) without alcohol abuse. Both of these prevalences are significantly higher ($p < 0.05$) than the prevalence among participants without mental disorders (2%).

Of relevance to HCR-20 item H6, the odds ratios (adjusted for SES) for violent crime among men were: schizophrenia (OR = 7.2, 95% CI = 3.1 – 16.6, $p < .0001$); mood disorders with psychotic features (OR = 10.4, 95%CI = 1.2 – 94.0, $p = .04$); paranoid and other psychoses (OR = 4.7, 95% CI = .6 – 39.3, $p = .15$).

8. Wessely, S. (1998). The Camberwell study of crime and schizophrenia. *Social Psychiatry & Psychiatric Epidemiology*, 33, S24-S28.

→ Community General Criminality

*Article summary also appears under Items H3, H4, and H5

In this population-based study of an incident cohort, participants ($N = 538$) with an ICD-9 diagnosis of schizophrenia or related disorders were identified from a cumulative case register in operation between 1964 and 1984 that records all contacts with mental health services and/or professionals (i.e., the Camberwell Psychiatric Case Register). Controls were chosen from the same case register as the cases and were matched by gender, age band, and year in which s/he joined the register. That is, cases were compared not with the general population, but with those with other mental disorders but excluding psychosis.

Records were obtained from various sources and included details of all hospital admissions and prison sentences. Dates of migration and dates of death were recorded in order to adjust for time at risk in all analyses. Outcome data were obtained from the central criminal register held by the Home Office (i.e., a record of all convictions, but not arrests.).

To compare rates of offending between schizophrenics and controls, rate ratios were calculated using the person years at risk. Confounding effects of social class and ethnicity were controlled for using Poisson regression after tests of heterogeneity. The rate ratio for assault and serious violence among men was 2.1 (95% CI = 1.5 - 2.9), $p < .001$ and among women was 3.1 (95% CI = 1.3 - 7.4), $p = .005$.

Unadjusted odds ratios were calculated to determine the strength of the association between a variety of factors and the chances of acquiring a first conviction. Of relevance to HCR-20 items H3 and H4, factors that decreased the risk were being female, being married, or having a job. Factors that increased the risk were having schizophrenia, being unemployed, belonging to an ethnic minority, being male, being a substance abuser and being born later. **Of relevance to HCR-20 items H5 and H6, Cox's proportional hazard analyses ($n = 1076$) to examine independent predictors of the risk of first conviction indicated that having schizophrenia (as opposed to any other mental disorder) exerted an independent effect (hazard ratio = 1.4, 95% CI = 1.0 - 2.0, $p = .047$), but less than the other variables examined, such as substance abuse (hazard ratio = 2.5, 95% CI = 1.7 - 3.5, $p = .001$) and ethnicity (hazard ratio = 2.3, 95% CI = 1.6 - 3.2, $p = .001$).**

Additional Relevant Sources Supportive of H6 – Abstracts Provided

1. Arseneault, L., Cannon, M., Murray, R., Poulton, R., Caspi, A., & Moffitt, T. E. (2003). Childhood origins of violent behavior in adults with schizophreniform disorder. *British Journal of Psychiatry, 183*, 520-525.

Background: People with psychosis have an elevated risk of violence. Aims: To examine whether violent behavior in adults with psychosis can be accounted for by psychotic symptoms or physical aggression in childhood. Method: We used data from a prospective longitudinal study of a complete birth cohort born in New Zealand. When cohort members were 26 years old, information was obtained on past-year psychiatric diagnosis of schizophreniform disorder and on violent behavior. Childhood psychotic symptoms were measured at age 11 years using a diagnostic interview, and childhood physical aggression was assessed by teachers when cohort members were aged 7, 9 and 11 years. Results: Participants with schizophreniform disorder were more likely to be violent than participants without, even after controlling for sociodemographic variables and concurrent substance dependence disorders. Childhood psychotic symptoms were a strong risk factor for violence in adults with schizophreniform disorder, as was childhood physical aggression, although to a lesser extent. Conclusions: Violence by individuals with schizophreniform disorder could be prevented by monitoring early signs of psychotic symptoms and by controlling childhood physical aggression.

2. Ayuba, L. N., Audu, M. D., Choji, A. R., & Mela, M. (2004). A developing world perspective on homicide and mental disorder: An eighteen-year retrospective study (1980-1998) at Jos, Nigeria. *International Journal of Forensic Mental Health, 3*, 211-216.

We examined the association between mental disorder and homicide in a developing country. Specifically, we studied culpable homicide offenders referred for psychiatric evaluation in Northern Nigeria, including their psychiatric diagnoses and their relationship with victims. A semi-structured questionnaire was used to collect forensic, demographic, and clinical information from 12,500 patients who underwent court-ordered psychiatric evaluations at the Jos University Teaching Hospital. Of all patients evaluated at the hospital, 1.3% had committed a homicide. Schizophrenia was the most common diagnosis among homicide offenders; there were relatively low rates of antisocial personality disorder and substance dependence. Most offenders knew their victims. The mean duration of time between arrest and psychiatric assessment was 24 months, with a range between 6 to 192 months. We discuss the implications of these findings with respect to motivations for homicide, the evaluation of offenders, and the need for treatment and follow-up of patients.

3. Beck, J. C. (2004). Delusions, substance abuse, and serious violence. *Journal of the American Academy of Psychiatry & the Law, 32*, 169-172.

The objective of the study was to learn how delusions, substance abuse, and violence are related. The sample was 90 hospitalized patients with adequate descriptions of mental status when violent. Data sources were risk assessment based on record review and patient and staff interviews. The data include history of violence and substance abuse, diagnosis, and demographic and legal status. Delusions were definitely or questionably present in 73.3 percent

and absent in 26.7 percent of violent episodes; 83.5 percent of delusionally violent patients had a history of substance abuse. These results support the importance of substance abuse in relation to violence by psychiatric patients. Delusions alone were infrequently related to violence, but when present appeared almost always to drive the violent behavior.

4. Bland, R. C., Newman, S. C., Thompson, A. H., & Dyck, R. J. (1998). Psychiatric disorders in the population and in prisoners. *International Journal of Law and Psychiatry*, 21, 273-279.

The authors report results from standardized diagnostic interviews of a random sample of 180 males under 45 who received prison sentences of less than 2 yrs, and compare those with the results from a community survey of 924 males under 45 using similar methods for diagnosis and case detection. All Ss were administered the Diagnostic Interview Schedule, which yields DSM-III diagnoses. Lifetime disorder rates were significantly higher among inmates, at 2.1 times the rate of the general population for any disorder. An even higher rate was found with more recent disorders, with inmates having 3.3 times the population rate for the previous 6 mos. Also inmates had a rate of suicide attempts that was 7.1 times the expected rate in the general population. The authors conclude by discussing factors that may effect prisoner demographics.

5. Dailey, W. F., Chinman, M. J., Davidson, L., Garner, L., Vavrousek-Jakuba, E., & Essock, S. et al. (2000). How are we doing? A statewide survey of community adjustment among people with serious mental illness receiving intensive outpatient services. *Community Mental Health Journal*, 36, 363-382.

Although mental health consumers often prefer community living, the factors influencing community outcomes are not well understood. In order to address this issue in Connecticut, the Department of Mental Health and Addiction Services (DMHAS) commissioned a statewide study of 6,813 clients (aged 18+ yrs) receiving the most intensive community-based mental health services funded by the state. DMHAS clinicians provided the ratings for their clients on a variety of variables including demographics, diagnosis, clinical stability, current psychotic symptomology, adherence to prescribed medications, substance abuse, history of violent crime, community trouble-making or victimization, likelihood of threatening behavior, frequency of social contacts, and difficulty in adjusting to life in the community. Also, the total length of stay and total number of admissions during a 2-yr period were examined for each client in the study. Results show that many of the clients were able to adjust to life in the community. Specifically, clients with better composite scores were those who had a prescription for medications, adhered more to their medication regimen, were perceived to be less threatening, and had more frequent social interactions. Implications for outpatient treatment are discussed.

6. Fazel, S., & Danesh, J. (2002). Serious mental disorder in 23 000 prisoners: A systematic review of 62 surveys. *Lancet*, 359, 545.

Presents a systematic review of surveys pertaining to mental disorders such as psychosis, major depression, and antisocial personality disorder taken in general prison populations in western countries. About 9 million people are imprisoned worldwide, but the number with serious mental disorders (psychosis, major depression, and antisocial personality disorder) is unknown. We did a systematic review of surveys on such disorders in general prison populations in western

countries. Methods: We searched for psychiatric surveys that were based on interviews of unselected prison populations and included diagnoses of psychotic illnesses or major depression within the previous 6 months, or a history of any personality disorder. We did computer-assisted searches, scanned reference lists, searched journals, and corresponded with authors. We determined prevalence rates of serious mental disorders, sex, type of prisoner (detainee or sentenced inmate), and other characteristics. Findings: 62 surveys from 12 countries included 22,790 prisoners (mean age 29 years, 18,530 [81%] men, 2568 [26%] of 9776 were violent offenders). 3.7% of men (95% CI = 3.3 - 4.1) had psychotic illnesses, 10% (9-11) major depression, and 65% (61-68) a personality disorder, including 47% (46-48) with antisocial personality disorder. 4.0% of women (3.2-5.1) had psychotic illnesses, 12% (11-14) major depression, and 42% (38-45) a personality disorder, including 21% (19-23) with antisocial personality disorder. Although there was substantial heterogeneity among studies (especially for antisocial personality disorder), only a small proportion was explained by differences in prevalence rates between detainees and sentenced inmates. Prisoners were several times more likely to have psychosis and major depression, and about ten times more likely to have antisocial personality disorder, than the general population.

7. Fazel, S., & Grann, M. (2004). Psychiatric morbidity among homicide offenders: A Swedish population study. *American Journal of Psychiatry*, *161*, 2129-2131.

The authors examined psychiatric diagnoses of all individuals convicted of homicide and attempted homicide in Sweden from 1988 to 2001 ($N = 2,005$). Method: High-quality national crime and hospital registers were linked to investigate standardized psychiatric diagnoses of homicide offenders. Results: The presence or absence of psychiatric diagnoses was ascertained for 1,625 (81%) of the homicide offenders; 1,464 (90%) of these offenders had a psychiatric diagnosis. Twenty percent ($N=409$) of all 2,005 offenders had a psychotic illness, and 54% ($N=589$) of a subgroup of 1,091 offenders with information on secondary diagnoses had a personality disorder as a principal or secondary diagnosis. Only 10% of the offenders for whom psychiatric diagnostic information was available had no diagnosis. Conclusions: Using a comprehensive method for identifying psychiatric illness in homicide offenders, the authors found higher rates of psychiatric morbidity than previous studies. Their findings underline the importance of psychiatric assessment in homicide offenders and suggest that treatment might have a preventive role.

8. Hartl, T. L., Rosen, C., Drescher, K., Lee, T. T., & Gusman, F. (2005). Predicting high-risk behaviors in veterans with posttraumatic stress disorder. *Journal of Nervous and Mental Disease*, *193*, 464-472.

The present study sought to identify posttraumatic stress disorder (PTSD) patients at high risk for negative behavioral outcomes (violence, suicide attempts, and substance use). The Mississippi Scale for Combat-Related PTSD, the Beck Depression Inventory, and demographic and behavioral data from 409 male combat veterans who completed a VA residential rehabilitation program for PTSD were analyzed using signal detection methods (receiver operating characteristics). A validation sample ($N = 221$) was then used to test interactions identified in the signal detection analyses. The best predictors of behaviors at follow-up were those same behaviors shortly before intake, followed by depressive and PTSD symptoms. However, for each

of the models other than that for hard drug use, cutoffs determined at the symptom level did not lend themselves to replication. Recent high-risk behaviors, rather than patients' history, appear to be more predictive of high-risk behaviors postdischarge.

9. Hodgins, S., Lapalme, M., & Toupin, J. (1999). Criminal activities and substance use of patients with major affective disorders and schizophrenia: A 2-year follow-up. *Journal of Affective Disorders*, 55, 187-202.

Examined criminal activity and substance use of 30 male patients (aged 18-55) with major affective disorders and 74 with schizophrenia in a 2 yr follow-up study. At discharge, Ss were intensively assessed including diagnoses using Schedule for Schizophrenia and Affective Disorders and Research Diagnostic Criteria. During follow-up, alcohol and drug use were measured, subjectively and objectively. At discharge, the 2 groups were similar as to secondary diagnoses of antisocial personality disorder, drug abuse/dependence, socio-demographic characteristics, and criminal history, but more of the patients with major affective disorders than those with schizophrenia had a history of alcohol abuse/dependence. During the follow-up period, the 2 groups were similar as to rehospitalization, treatment intensity, and substance use. By the end of the follow-up period, 33% of the Ss with major affective disorders and only 15% of those with schizophrenia had committed crimes, most violent. Co-morbid antisocial personality disorder was associated with criminality among the Ss with schizophrenia but not among those with major affective disorders. Among these latter Ss, drug use and the intensity of outpatient care were associated with violent criminality.

10. Munkner, R., Haastrup, S., Joergensen, T., & Kramp, P. (2003). The temporal relationship between schizophrenia and crime. *Social Psychiatry & Psychiatric Epidemiology*, 38, 347-353.

Little is known about the temporal relationship between illness onset and the possible beginning of a criminal career among people with schizophrenia, although criminality (especially of a violent nature) has been shown to be more common among people with schizophrenia than among non-mentally disordered individuals. The aim of this study was to analyse the temporal relationship between registered crime and contact to the psychiatric hospital system. This is a register-based study merging data on the psychiatric career with criminal records. Among the males with schizophrenia, 37% started a criminal career and 13% had committed first violent crime before first contact with the psychiatric hospital system. The criminality committed before first contact to the psychiatric hospital system is substantial, especially among males with schizophrenia.

11. Phillips, H. K., Gray, N. S., MacCulloch, S. I., Taylor, J., Moore, S. C., & Huckle, P., MacCulloch, M.J. (2005). Risk assessment in offenders with mental disorders: Relative efficacy of personal demographic, criminal history, and clinical variables. *Journal of Interpersonal Violence*, 20, 833-847.

Following the meta-analysis by Bonta, Law, and Hanson, (1998) this study examined the ability of personal demographic, criminal history, and clinical variables to predict reoffending in offenders in the United Kingdom who had mental disorders. The efficacy of each variable in predicting rate of general reoffending and violent reoffending was investigated. Age on

admission, number of days hospitalized, and number of previous offenses were the most effective variables in predicting reoffending, with number of previous offenses being the strongest predictor. Clinical diagnosis was not predictive of reoffending when the variance attributable to these other predictors was controlled for. None of the variables were able to discriminate between general offenders and violent offenders indicating that the same variables predict both types of reoffending. The results showed that reconviction in offenders with mental disorders can be predicted using the same criminogenic variables that are predictive in offenders without mental disorders.

12. Robbins, P. C., Monahan, J., & Silver, E. (2003). Mental disorder, violence, and gender. *Law & Human Behavior, 27*, 561-571.

Recent studies have reported comparable rates of violence among men and women with mental disorder, raising important issues for clinical risk assessment. This study examines the relationship between gender and violence using data from the MacArthur Violence Risk Assessment Study. Patients in acute psychiatric wards were interviewed 5 times over the year following their discharge to the community. Results showed some differences between men and women in the violence committed immediately following discharge, with rates for men being higher. But the prevalence of violence over the 1 year was similar for female and male discharged patients. However, there were substantial gender differences in the situational context of the violence committed. Men were more likely to have been drinking or using street drugs, and less likely to have been adhering to prescribed psychotropic medication, prior to committing violence. The violence committed by men was more likely to result in serious injury than the violence committed by women, and men were more likely than women to be arrested after committing a violent act. Women were more likely to target family members and to be violent in the home.

13. Simpson, A. I. F., McKenna, B., Moskowitz, A., Skipworth, J., & Barry-Walsh, J. (2004). Homicide and mental illness in New Zealand, 1970-2000. *British Journal of Psychiatry, 185*, 394-398.

Background: Homicides by mentally ill persons have led to political concerns about deinstitutionalisation. Aims: To provide accurate information about the contribution of mental illness to homicide rates. Method: Retrospective study of homicide in New Zealand from 1970 to 2000, using data from government sources. 'Mentally abnormal homicide' perpetrators were defined as those found unfit to stand trial, not guilty by reason of insanity, convicted and sentenced to psychiatric committal, or convicted of infanticide. Group and time trends were analysed. Results: Mentally abnormal homicides constituted 8.7% of the 1498 homicides. The annual rate of such homicides was 1.3 per million population, static over the period. Total homicides increased by over 6% per year from 1970 to 1990, then declined from 1990 to 2000. The percentage of all homicides committed by the mentally abnormal group fell from 19.5% in 1970 to 5.0% in 2000. Ten percent of perpetrators had been admitted to hospital during the month before the offense; 28.6% had had no prior contact with mental health services. Victims were most commonly known to the perpetrator (74%). Conclusions: Deinstitutionalisation appears not to be associated with an increased risk of homicide by people who are mentally ill.

14. Soyka, M., Morhart-Klute, V., & Schoech, H. (2004). Delinquency and criminal offenses in former schizophrenic inpatients 7-12 years following discharge. *European Archives of Psychiatry & Clinical Neuroscience*, 254, 289-294.

Previously, we reported a high prevalence of aggression in a large sample of schizophrenic patients treated between 1990-1995 in the psychiatric hospital of the University of Munich. Aims: To assess the prevalence of criminal offenses and delinquency in former schizophrenic inpatients following discharge. Method: With permission of the German General Attorney we reviewed the national criminal register records of criminal offenses of these patients for a 7-12 year period following discharge. Results: 224 (13.1 %) of the 1705 patients had been convicted in the 7-12 year post discharge period. Male patients (22.1%) outnumbered female patients (6.9 %) 3:1 in this respect. The rate for violent offenses was especially high: 45 (2.6 %) of the sample were convicted for physical injury offenses (68 cases). Five cases of attempted or completed manslaughter or murder were recorded. Conclusions: These data indicate a significant rate of delinquency and serious physical injuries in former schizophrenic inpatients. Future research may try to identify risk factors for aggression and violence in schizophrenic patients.

15. Stueve, A., & Link, B. G. (1998). Gender differences in the relationship between mental illness and violence: Evidence from a community-based epidemiological study in Israel. *Social Psychiatry & Psychiatric Epidemiology*, 33, S61-S67.

Examined whether the associations between gender and self-reported violent behaviors (fighting and weapon use) are moderated by 3 mental health indicators: treatment status, psychiatric diagnosis, and threat/control-override psychotic symptoms. Data from a 2-stage epidemiological study of 24-33 yr old Israeli Ss were analyzed using descriptive statistics and logistic regression analysis. Results indicate that treatment status and psychiatric diagnosis moderate the association between gender and fighting, but leave unanswered questions both about the moderating role of threat/control-override symptoms and about the implications of mental illness for the gender/weapon use relationship.

16. Taft, C. T., Pless, A. P., Stalans, L. J., Koenen, K. C., King, L. A., & King, D. W. (2005). Risk factors for partner violence among a national sample of combat veterans. *Journal of Consulting and Clinical Psychology*, 73, 151-159.

In this study, the authors identified potential risk factors for partner violence perpetration among a subsample ($n = 109$) of men who participated in a national study of Vietnam veterans. Partner violent (PV) men with posttraumatic stress disorder (PTSD) were compared with PV men without PTSD and nonviolent men with PTSD on family-of-origin variables, psychiatric problems, relationship problems, and war-zone factors. PV men with PTSD were the highest of the 3 groups on every risk factor other than childhood abuse. Group contrasts and a classification tree analysis suggest some potential markers and mechanisms for the association between PTSD and partner violence among military veterans and highlight the need for theory development in this area of inquiry.

17. Taylor, P. J., Leese, M., Williams, D., Butwell, M., Daly, R., & Larkin, E. (1998). Mental disorder and violence: A special (high security) hospital study. *British Journal of Psychiatry*, 172, 218-226.

Determined what elements of mental disorders seem most likely to lead to dangerous behavior among 1,740 psychiatric patients (aged 17-88 yrs) in special hospitals. 1,015 patients (58%) had functional psychosis (25% of whom also had an independent personality disorder), 461 (26%) had personality disorders uncomplicated by psychosis, and 264 (16%) had learning disabilities. Pre-admission substance misuse was most common among Ss with psychosis and an independent personality disorder. Less than 10% had never been convicted of a criminal offense, although 25% had been admitted directly from other hospitals. Direct personal violence was more common among men, and fire-setting among women. Schizophrenia was most strongly associated with personal violence. More than 75% of Ss with a psychosis were recorded as being driven to offend by their delusions. In the absence of delusions, hallucinations had no such effect.

18. Timonen, M., Miettunen, J., Hakko, H., Järvelin, M.R., Vejjola, J., & Kinnunen, J., & Rasanen, P. (2000). Psychiatric admissions at different levels of the national health care services and male criminality. The Northern Finland 1966 Birth Cohort Study. *Social Psychiatry and Psychiatric Epidemiology*, 35, 198-201.

This study examined whether violent and non-violent offenders differ with respect to admissions to any health care inpatient service due to psychiatric disorders. The authors used a genetically homogeneous, general population database from the Northern Finland 1966 Birth Cohort, together with the Finnish Hospital Discharge Register and national crime registers. One-third of violent and one-fourth of non-violent male offenders had at least 1 hospital admission due to a psychiatric disorder before the age of 32. 65 violent criminals--1.2% of all cohort males of 5,636 Ss--accounted for 14.4% of all psychiatric treatment days. The admission rates among both violent and non-violent male offenders were significantly higher when compared with males with no criminal history. Among violent males, only half (55.5%) of the inpatient hospital days due to psychiatric disorders occurred in psychiatric hospitals. The corresponding percentages for non-violent criminals and non-criminals were 64.9% and 74.1%, respectively. Among the violent offenders, one-third of hospital inpatient days occurred in university hospitals or central hospitals, and only 1.9% of them occurred in a comprehensive community care system.

19. Wallace, C., Mullen, P., Burgess, P., Palmer, S., Ruschena, D., & Browne, C. (1998). Serious criminal offending and mental disorder. *British Journal of Psychiatry*, 172, 477-484.

A relationship exists between mental disorder and offending behaviors but the nature and extent of the association remains in doubt. Those convicted in the higher courts of Victoria between 1993 and 1995 had their psychiatric history explored by case linkage to a register listing virtually all contacts with the public psychiatric services. Prior psychiatric contact was found in 25% of offenders, but personality disorder and substance misuse accounted for much of this relationship. Schizophrenia and affective disorders were also overrepresented, particularly those with coexisting substance misuse. The increased offending in schizophrenia and affective illness is modest and may often be mediated by coexisting substance misuse. The risk of a serious crime

being committed by someone with a major mental illness is small and does not justify subjecting them, as a group, to either increased institutional containment or greater coercion.

20. Xie, L. (2000). Gender difference in mentally ill offenders: A nationwide Japanese study. *International Journal of Offender Therapy & Comparative Criminology*, 44, 714-724.

Studied the entire population of 2,094 mentally ill offenders who were adjudicated as partially or fully not criminally responsible due to mental disorders during the years 1980-1994 in Japan. A series of factors, including demographic, criminal and psychiatric, were analyzed. Results show that men were predominant, and more than 60% of the Ss had previously received psychiatric treatment. Schizophrenia and other psychoses were the most common diagnoses among both males and females. Females were more likely to be charged with violent crimes, and half of them committed homicide. Females attacked family members more often, and they were diagnosed with depression more often than were males. In contrast, males were more often charged with nonviolent crimes and had a greater number of criminal records. Despite the fact that persons diagnosed solely with personality disorders were largely excluded from the study, male mentally ill offenders still shared more negative demographic factors with male criminals in general, such as being unmarried, having a lower educational level, a poorer employment history, chaotic lives, and substance abuse problems.

Additional Resource with Contradictory Findings for H6 – Abstract Provided

1. Swanson, J., Borum, R., Swartz, M., & Hiday, V. (1999). Violent behavior preceding hospitalization among persons with severe mental illness. *Law and Human Behavior*, 23, 185-204.

Describes characteristics of violent behavioral events in a sample of 331 people with psychotic or major mood disorders who were placed on involuntary outpatient commitment in North Carolina. By pooling baseline data from Ss' self-report, collateral informant interviews, and hospital records, the study found violent behavior to be a problem affecting over half the sample in a 4-mo period preceding hospitalization. The study also found considerable variability in the frequency of violent events, severity, weapon use, subjective state when incidents occurred, initiation of fights, settings, relationship to others involved, and associated threat of victimization. Multivariable analyses showed that co-occurring substance abuse problems, history of criminal victimization, and age (being younger) were significantly associated with violent behavior when all sources of data were taken into account. **Clinical diagnosis and symptom variables were not related to violence in this sample.** Implications of these findings for service delivery priorities and future research are discussed.

Narrative Review of H6

1. Angermeyer, M. C. (2000). Schizophrenia and violence. *Acta Psychiatrica Scandinavica*, 102, 63-67.

The relationship between schizophrenia and violence is studied from a psychiatric and a public health perspective. Method: All epidemiological studies which have been published since 1990 are reviewed. Results: Despite differences in the methodological approaches chosen the studies reviewed concur in supporting the assumption that there is a moderate but significant association between schizophrenia (or more generally psychotic disorders) and violence. However, compared with the magnitude of risk associated with substance abuse and personality disorders, that associated with schizophrenia or other major mental disorders is small. In addition, the elevated risk to behave violently appears to be limited to particular symptom constellations. The evidence available so far suggests that the proportion of violent crimes committed by people suffering from a severe mental disorder is small. There is no unambiguous evidence of an increase of violent acts committed by severely mentally ill people in general and people suffering from schizophrenia in particular during recent years. Strangers appear to be at an even lower risk of being violently attacked by someone suffering from severe mental disorder than by someone who is mentally healthy. Conclusion: While the assessment of relative risk is of great interest for psychiatric researchers who are trying to identify factors which may increase or decrease the risk of violent behavior among the mentally ill, which in turn may provide some clues as to how to intervene best in order to reduce the risk, the attributable risk is of special interest for the public since it informs about the risk of becoming victim of a violent act committed by someone who is suffering from a mental disorder.

2. Arboleda-Flórez, J., Holley, H., & Crisanti, A. (1998). Mental illness and violence. *International Medical Journal*, 5, 3-8.

The Mental Health Division of Health Canada commissioned a study to conduct a critical appraisal of the literature to determine whether mental illness causes violence. Peer-reviewed articles containing quantitative empirical studies were the main target, but qualitative studies and literature reviews were also included. A rigorous, conservative epidemiological framework was used to make the determination of causality. Computerized databases covering the scientific literature were searched for articles dealing with mental illness and violence. Of the 5,500 citations captured, only 320 articles met the criteria and were retrieved for detailed analysis. Over 100 were included in an annotated bibliography presented to Health Canada. This exhaustive review of the literature indicated that, as yet, there is no compelling scientific evidence to suggest that mental illness causes violence.

3. Bjorkly, S. (1997). Clinical assessment of dangerousness in psychotic patients: Some risk indicators and pitfalls. *Aggression and Violent Behavior*, 2, 167-178.

In the assessment of psychotic patients, clinicians are recurrently confronted with the difficult task of deciding whether or not patients are dangerous to others. Since no single predictor of dangerousness has proved to have superior predictive value, it is suggested that clinicians should rely on sets of indicators. An indicator is defined here as a variable that has been associated with

increased risk of aggression in empirical studies. Most of these indicators are characterized by being of a dynamic and interactional nature rather than by being static trait measures. Based on findings from empirical studies, some sets of indicators of dangerousness in psychotic patients are presented. These are: background variables, demographic variables, psychopathological and psychodynamic indicators, analysis of observed aggressive incidents, and indicators derived from analyzing patients' apprehension of their dynamics of aggression. It is argued that clinicians should use such sets of indicators of dangerousness, rather than relying on clinical anecdotes. Finally, some pitfalls in the clinical assessment of dangerousness in psychotic patients are discussed.

4. Citrome, L., & Volavka, J. (1999). Violent patients in the emergency setting. *Psychiatric Clinics of North America*, 22, 789-801.

Violent or threatening behavior is a frequent reason for presentation to an emergency department. This article reviews the epidemiologic evidence linking mental disorders with violent behavior. Key issues in patient assessment and differential diagnosis are presented, and a summary of the therapeutic options that are appropriate in the emergency setting is provided. Patients with aggressive behavior must first be assessed for the possibility of comorbid medical conditions, including acute withdrawal from alcohol or sedatives. Short-term sedation with lorazepam is a safe and effective choice for managing acute agitation. Use of typical neuroleptics may lead to side effects such as akathisia, which may in turn precipitate further agitation. This may be obviated with the introduction of intramuscular preparations of atypical antipsychotics.

5. Crichton, J. (1999). Mental disorder and crime: Coincidence, correlation and cause. *Journal of Forensic Psychiatry*, 10, 659-677.

This paper reviews the literature on the relationship between mental disorder and crime from 1997 and 1998. There is a brief examination of the importance of the topic and methodological challenges in researching the subject. Studies are divided between those that are designed to include a control, and which are therefore of greater use in establishing causality, and those that do not. The more specific that studies have been in comparing particular diagnosis and symptom clusters with specific criminal behavior, the more useful they have been in establishing causality. An emerging theme is the importance of dual diagnosis, particularly substance misuse and psychosis, and violent crime.

6. Eronen, M., Angermeyer, M. C., & Schulze, B. (1998). The psychiatric epidemiology of violent behavior. *Social Psychiatry & Psychiatric Epidemiology*, 33, S13-S23.

This paper reviews the current state of the debate on the relationship between mental disorder and violent behavior. Starting from the discussion of methodological approaches to assessing a possible association, the most important studies carried out on the issue in recent years are discussed. The results concur in supporting the assumption that there is a moderate but reliable association between mental disorder and violence. However, this does not imply that people with mental illness are generally more likely to commit violent acts than members of the general population. An elevated risk of violent behavior is only evident for specific psychiatric diagnoses and symptom constellations. For schizophrenia and other psychotic disorders, a significant

increase in the likelihood to commit violent acts is reported. Substance use disorders and antisocial personality disorder, however, represent a markedly higher risk for violent behavior. The article further discusses possible determinants of violent behavior such as psychotic symptoms and comorbidity with substance abuse and considers who is at particular risk of becoming a target of violent acts.

7. Hiday, V. A. (1997). Understanding the connection between mental illness and violence. *International Journal of Law & Psychiatry*, 20, 399-417.

To understand how mental illness and violence are associated, this paper presents a series of models based on empirical research that illuminate the statistical association between the two phenomena. It begins with the most simple model showing a direct sequence of severe mental illness producing violence, then moves to build more complexity in the relationship with multiple paths involving socializing conditions and intervening experiences that connect active, major mental illness to violence. It concludes with a model suggesting that both violence and manifestations of mental illness largely grow from the structural arrangements in which individuals are embedded, and that the paths between mental illness and violence are mainly indirect and contingent.

8. Hodgins, S. (2001). The major mental disorders and crime: Stop debating and start treating and preventing. *International Journal of Law & Psychiatry*, 24, 427-446.

Addresses the relation between the major mental disorders and crime and violence. Emphasis is put on the methodological features of each type of investigation which limit the validity and/or generalizability of the results. The paper then presents a conceptual framework for undertaking research designed to unravel the etiology of criminal and violent behavior of persons who develop major mental disorders.

9. Lamb, H. R., & Weinberger, L. E. (2001). Persons with severe mental illness in jails and prisons: A review. In H. R. Lamb, & L. E. Weinberger (Eds.), *Deinstitutionalization: Promise and problems*. (pp. 29-49).

This reprinted chapter originally appeared as an article in *Psychiatric Services*, 1998(Apr), Vol 49(4), 483-492. (The following abstract of the original article appeared in record 1998-01415-007.) Examines the presence of severely mentally ill persons in jails and prisons and makes recommendations for preventing and alleviating this problem. The authors found that offenders with severe mental illness generally have acute and chronic mental illness and poor functioning. It appears that a greater proportion of mentally ill persons are arrested compared with the general population. Factors cited as causes of mentally ill persons' being placed in the criminal justice system are deinstitutionalization, more rigid criteria for civil commitment, lack of adequate community support for persons with mental illness, mentally ill offenders' difficulty gaining access to community treatment, and the attitudes of police officers and society. Recommendations include mental health consultation to police in the field; formal training of police officers; careful screening of incoming jail detainees; diversion to the mental health system of mentally ill persons who have committed minor offenses.

10. McNiel, D. E. (1997). Correlates of violence in psychotic patients. *Psychiatric Annals*, 27, 683-690.

Reviews research on violent behavior by the mentally ill and discusses implications for clinical assessment of the risk of violence among patients with psychotic disorders and symptoms. Epidemiological studies demonstrating a link between major mental disorder and violence potential are discussed. Clinical, demographic or personal history, and situational correlates of violence identified in recent research are examined. The general process involved in integrating these correlates in the clinical assessment of risk of violence is presented. It is stated that the development of aids to assist the clinician in screening for the risk of violence, in which items are included based on their empirical association with violence, offers considerable potential in anchoring clinical judgment by allowing access to actuarial estimate of risk.

11. Soyka, M. (2000). Substance misuse, psychiatric disorder and violent and disturbed behavior. *British Journal of Psychiatry*, 176, 345-350.

Epidemiological studies suggest schizophrenia and substance misuse to be associated with a higher rate of violence and crime. The literature was evaluated to assess whether people with schizophrenia who use substances have an increased risk for violence and disturbed behavior. A detailed Medline analysis was performed and relevant studies were reviewed. A large number of studies have linked substance misuse in schizophrenia with male gender, high incidence of homelessness, more pronounced psychotic symptoms, non-adherence with medication, poor prognosis, violence, and aggression. The latter has been proven by clinical, epidemiological, and longitudinal prospective studies of unselected birth cohorts. The increased risk for aggression and violent acts cannot be interpreted only as a result of poor social integration. Male gender, more severe psychopathology, a primary antisocial personality, repeated intoxications, and non-adherence with treatment are important confounding variables. Substance misuse has been shown consistently to be a significant risk factor for violence and disturbed behavior. Future research should try to evaluate possible pharmacological and psychosocial treatment approaches.

12. Tehrani, J. A., Brennan, P. A., Hodgins, S., & Mednick, S. A. (1998). Mental illness and criminal violence. *Social Psychiatry & Psychiatric Epidemiology*, 33, S81-S85.

Examines the relationship between criminal violence and mental illness, focusing on the impact of family, twin, and adoption studies on the conceptualization of criminal behavior. Data examining the question of a genetic predisposition to criminal behavior, offense type, recidivism, and the comorbidity between mental disorder and crime are reviewed. Data suggest that mentally ill persons tend to have an increased risk for committing violent offenses, and that the violent offending by these individuals tends to be recidivistic. Findings also suggest that parents who have both committed violent offenses and experienced a psychiatric hospitalization increase the risk of violent offending among their offspring. It is hypothesized that mentally ill parents transmit a biological characteristic which may genetically predispose their child towards criminal violence. Prenatal disturbances during critical periods of fetal neural development may provide clues regarding the etiology of criminal violence and possible links between schizophrenia and violent behavior.

13. Walsh, E., Buchanan, A., & Fahy, T. (2002). Violence and schizophrenia: Examining the evidence. *British Journal of Psychiatry*, 180, 490-495.

Examined the epidemiological evidence for the association between violence and schizophrenia and estimate the impact of this association on society. A selective review of the key literature on the epidemiology of violence and schizophrenia is given. Population-attributable risks for violence in schizophrenia are calculated from population-based studies. Most studies confirm the association between violence and schizophrenia. Recent good evidence supports a small but independent association. Comorbid substance abuse considerably increases this risk. The proportion of violent crime in society attributable to schizophrenia consistently falls below 10%. Less focus on the relative risk and more on the absolute risk of violence posed to society by people with schizophrenia would serve to reduce the associated stigma. Strategies aimed at reducing this small risk require further attention, in particular treatment for substance misuse.

14. Woodward, M., Nursten, J., Williams, P., & Badger, D. (2000). Mental disorder and homicide: A review of epidemiological research. *Epidemiologia e Psichiatria Sociale*, 9, 171-189.

Reviews 28 studies on the epidemiology of homicide committed by mentally disordered people, taken from recent international academic literature. The studies included were identified as part of a wider systematic review of the epidemiology of offending combined with mental disorder. A comprehensive search was made for studies published since 1990, supplemented with key studies from the 1980s identified through citation tracing and personal contacts. A summary is given in tabular form of the content and quality of each study. There is then discussion of the studies in 8 categories: descriptive studies, studies of trends, comparative studies amongst homicide offenders, amongst prisoners and including general populations, studies of homicide of relatives, follow-up studies, and studies of recidivism. Results indicate there is an association of homicide with mental disorder, most particularly with certain manifestations of schizophrenia, antisocial personality disorder and drug or alcohol abuse. However, the quality of epidemiological research in this area is not adequate to answer key questions, and prediction of potential for homicide remains elusive.

H7 Psychopathy

1. Barbaree, H. E. (2005). Psychopathy, treatment behavior, and recidivism: An extended follow-up of Seto and Barbaree. *Journal of Interpersonal Violence, 20*, 1115-1131.

→ Community Violence

This study reported on 212 of the 224 adult male sex offenders investigated by Seto and Barbaree (1999). Seto and Barbaree (1999) found that participants who scored higher on psychopathy and exhibited better behavior in treatment were almost four times more likely to commit a new serious offense once released than other offenders. The purpose of the present study was to reexamine this sample after a longer follow-up time using more complete recidivism data from a national police database. More specifically, the average time-at-risk for recidivism was 62 months and ranged from 29 days to 10 years ($M = 5.2$ years, $Mdn = 5.5$ years). Regarding source of recidivism data, whereas Seto and Barbaree (1999) used databases maintained by the Correctional Service of Canada and the National Parole Board of Canada, the source of recidivism data in the present study was the Canadian Police Information Centre (CPIC) database. Information from CPIC is more comprehensive and the author regards use of this data source as an important methodological improvement.

The independent variables of interest were PCL-R defined psychopathy and treatment behavior. The PCL-R was scored on the basis of an interview and a review of collateral documents. Ratings of behavior in group therapy sessions and clinical change were made by research assistants who reviewed the clinical notes and treatment reports in the Warkworth Sexual Behavior Clinic files. Ratings of motivation for treatment and overall degree of change were jointly made by the group therapist and program director on a 5-point scale (from *low* to *high*) and provided in the posttreatment reports. The joint clinician ratings were made at the end of the participants' involvement in treatment, before they were released from prison. All treatment behavior ratings were made without knowledge of recidivism outcomes. Participants were classified in one of four groups based on whether their scores on the PCL-R and treatment behavior fell above or below the median of that measure (median PCL-R score = 15, median treatment behavior score = .70) in the original sample (Seto & Barbaree, 1999). Men who scored below the median treatment behavior score were described as being "poor" in treatment behavior and men who scored at or above the median were described as "good" in treatment behavior. In the present sample, 52 men were in the low psychopathy and poor treatment behavior group (low-poor); 60 were in the low psychopathy and good treatment behavior group (low-good); 56 were in the high psychopathy and poor treatment behavior group (high-poor); and 44 were in the high psychopathy and good treatment behavior group (high-good). Psychopathy was not significantly correlated with treatment behavior, $r(210) = -.12, ns$.

Reoffenses during the follow-up period were classified as *general* (i.e., any type of reoffense) or as *serious* (i.e., a new nonsexually violent offense or a new sexual offense involving physical contact with a victim). There were 90 men who committed a new offense of some kind (42% general recidivism) and 52 men who committed a new nonsexually violent or sexual offense (24% serious recidivism). Although psychopathy continued to be a significant predictor of general and serious recidivism, treatment behavior was no longer related to either general or

serious recidivism, and there was no statistically significant interaction between psychopathy and treatment behavior.

There was a significant difference among the four psychopathy/treatment behavior groups in the proportion of participants who committed a new offense during the follow-up period, $\chi^2 (3) = 14.29, p < .005$. Men who scored higher in psychopathy were more likely to reoffend than men who scored lower on psychopathy. However, in contrast to the Seto and Barbaree (1999) finding, treatment behavior had no relationship to general recidivism. No significant overall group difference was observed when only serious reoffenses were considered, $\chi^2 (3) = 5.99, ns$. Analyses in which the overall comparison was decomposed to single *df* comparisons that examined the effects of psychopathy, treatment behavior, and their interaction indicated that whereas there was a significant effect for psychopathy, neither treatment behavior nor the interaction was significant.

Recidivism was examined using Kaplan-Meier survival analysis because the groups differed significantly in time-at-risk. Men in the high-good group reoffended at a significantly faster rate than men in the low-good group, $\chi^2 (1) = 5.69, p < .05$. This finding is suggestive of a significant effect of psychopathy among the good treatment behavior groups. There was no other significant difference between groups in any of the other pairwise comparisons.

When psychopathy was treated as a continuous variable and its influence was examined via Cox regression analyses, psychopathy proved to be a significant predictor of serious recidivism (Wald statistic = 8.17, $p < .005$). In contrast, neither treatment behavior (Wald statistic < 1, *ns*) nor a psychopathy-treatment behavior interaction term (Wald statistic < 1, *ns*) were significant predictors. Additional analyses ruled out the possibility that the differences between studies could be accounted for by the different average length of follow-up. A direct comparison of the two sources of recidivism data showed that differences in recidivism between subgroups were reduced by using the more complete recidivism data.

2. Grann, M., Långström, N., Tengström, A., & Kullgren, G. (1999). Psychopathy (PCL-R) predicts violent recidivism among criminal offenders with personality disorders in Sweden. *Law & Human Behavior, 23*, 205-217.

→ Community Violence

The sample comprised all individuals subjected to court-ordered forensic psychiatric evaluation and convicted for a violent crime in Sweden between 1988 and 1990 who were diagnosed with a personality disorder with or without concomitant abuse or dependence of alcohol or drugs. At the indexed forensic psychiatric evaluation, the age of the cohort averaged 32 years ($SD = 10.4$ years) and ranged from 16 to 72 years. Thirty-six (9%) participants were women. In addition to personality disorder, 60% of the cohort had a concomitant abuse of or dependence on alcohol (49%) and/or drugs (29%).

The main source for data collection was the forensic psychiatric assessment reports from 1988 to 1990. Baseline data also were corroborated with information from the National Police Register,

the Hospital Discharge Register of the National Board of Health and Welfare, the National Cause of Death Register, and files from the courts. PCL-R scores and all information about background characteristics in this study pertain to the index forensic psychiatric evaluation. Files, medical records, and register excerpts were separated so that baseline and follow-up data were kept apart. Three raters who were blind to the subjects' follow-up status completed the baseline ratings during a 12-month period. A different rater completed the follow-up in parallel. An interrater reliability prestudy comprising 38 randomly chosen cases was independently assessed by the three raters. The intraclass correlation coefficient of the PCL-R total scores was $ICC_{(2,1)} = .78$. As another check to ensure high quality data, a controller procedure was adopted during the subsequent 12-month rating period. An additional 15 randomly chosen cases were again rated once by each rater (without them knowing which or when) and compared. Among the controller cases, the interrater agreement on the PCL-R total scores was $ICC_{(2,1)} = .75$.

Violent crime was defined as a conviction for attempted or completed homicide (murder or manslaughter according to Swedish legislation), assault, rape, or robbery. Following release from prison ($n = 172$), discharge from forensic psychiatric treatment ($n = 729$), or probation ($n = 51$), a total of 352 individuals were followed for up to 8 years ($M = 3.7$ years) with reconviction for violent crime as endpoint variable (base rate 34%).

The PCL-R total scores among the 352 in the cohort available for postdetainment follow-up ranged from 0.0 to 40.0 points with a median value of 20.0 points. A total of 151 offenders (43%) had scores of 22 or higher, 111 (32%) had scores of 26 or higher, and 36 (10%) had scores of 32 or higher. Mean score was 20.7 points (95% CI = 19.8 - 21.5, $SD = 8.5$).

The follow-up time in the analyses began at release or discharge. For probationers, time was computed from the day of formal conviction. Follow-up ended at 31 December 1995, at which point nonrecidivists were censored. Violent recidivism leading to court conviction was used as the endpoint criterion variable. The postdetainment follow-up times ranged from 1 to 2,896 days ($M = 3.7$ years, $SD = 2.3$ years).

A total of 121 (34%) of the 352 individuals in the follow-up group committed at least one new violent crime that led to court conviction. The relative risk for violent recidivism of psychopathy (defined as a PCL-R score ≥ 26 points) was 1.98 (95% CI = 1.50 - 2.61). The survival functions of the psychopaths and the nonpsychopaths differed distinctively (Kaplan-Meier log-rank = 28.8, $df = 1$, $p < .0001$). Neither substance abuse or dependence, early behavior problems as reflected by conduct disorder with onset before age 15, number of convictions for violent crimes prior to index offense, age, nor type or length of sentence could better account for the violent recidivism in the cohort than PCL-R defined psychopathy.

The AUC value for total PCL-R score to predict violent recidivism (within two years postdetainment) was .72 (95% CI = .66 - .78). There was not a substantial difference in AUC values as a function of follow-up time. The AUC associated with PCL-R Factor 1 was .63 (95% CI = .57 - .70). The difference between the AUC values for total and Factor 1 scores was statistically significant, $\chi^2(1) = 11.1$; $p = .0009$. The AUC for Factor 2 was .71 (95% CI = .65 - .77). Similarly, the difference between the AUC values for total and Factor 2 did not differ

significantly from that of the total score, $\chi^2(1) = .34$; $p = .56$. However, the difference between the AUCs of Factor 1 and Factor 2 were significant, $\chi^2(1) = 3.77$, $p = .052$.

3. Guy, L. S., Edens, J. F., Anthony, C., & Douglas, K. (*in press*). Does psychopathy predict institutional misconduct among adults? A meta-analytic investigation. *Journal of Consulting and Clinical Psychology*.

→ Institutional Violence

In this quantitative synthesis, 273 effect sizes were presented in an investigation of the association between the Psychopathy Checklist (and its derivative measures) and a hierarchy of increasingly specific forms of institutional misconduct. More specifically, five criterion categories were examined: total/any misconduct, nonaggressive misconduct, general aggression, physical violence, and verbal aggression/property destruction. All relevant published and unpublished studies known to the authors were retrieved and coded. Analyses were based on 34 documents that presented nonoverlapping data sets. This reflected 38 independent samples with a total sample size of 5,381 participants ($M = 141.61$, $SD = 116.79$, range = 34 – 652, IQR = 105.50). Effect sizes for Total, Factor 1, and Factor 2 scores were quite heterogeneous overall and weakest for physically violent misconduct ($r_w = .17$, $.14$, and $.15$, respectively). Moderator analyses suggested that physical violence effect sizes were smaller in U.S. prison samples ($r_w = .11$) than in non-U.S. prisons ($r_w = .23$). Results indicated that the magnitude of the predictive association between PCL-R defined psychopathy and violence is larger for violence perpetrated in the community compared to violence perpetrated in an institutional setting.

4. Hemphill, J. F., Hare, R. D., & Wong, S. (1998). Psychopathy and recidivism: A review. *Legal & Criminological Psychology*, 3, 139-170.

→ Community Violence

The meta-analysis included all unpublished and published studies (seven datasets) of which the authors knew in which psychopathy was assessed with the PCL-R and in which recidivism was calculated prospectively after a follow-up period (i.e., studies that reported only retrospective analyses were excluded). Participants were all men and were mostly inmates who were 30 years old on average and predominantly White. Diverse groups were included (e.g., treated and untreated offenders, mentally disordered offenders, adolescent offenders, offenders at high and at low risk to reoffend). It was found that the PCL-R consistently was an important predictor across inmate samples and was consistently among the best predictors of recidivism. PCL-R scores, weighted by their degrees of freedom, correlated an average $.27$ with general recidivism (GR), $.27$ with violent recidivism, and $.23$ with sexual recidivism. Mean relative risk was computed by dividing the mean recidivism rate for the high PCL-R group by the mean recidivism rate for the low PCL-R group. Relative risk statistics at 1 year for general recidivism ranged from 2.18 to 3.73. For violent recidivism: 2.64 and 5.33. Therefore, relative risk statistics at 1 year indicated that psychopaths were approximately 3 times more likely to recidivate generally --or 4 times more likely to violently recidivate--than were non-psychopaths. The correlation between GR and

PCL-R Factor 2 was stronger than the correlation between GR and PCL-R Factor 1. The PCL-R routinely made a significant contribution towards predicting recidivism beyond that made by key demographic variables, criminal history, and personality disorder diagnoses. **Across studies, PCL-R scores were as strongly associated with GR, and were more strongly associated with violent recidivism, than were actuarial risk scales designed specifically to predict reoffending.**

5. Porter, S., Birt, A., & Boer, D. P. (2001). Investigation of the criminal and conditional release profiles of Canadian federal offenders as a function of psychopathy and age. *Law & Human Behavior, 25*, 647-661.

→ Community Violence

Using the Psychopathy Checklist-Revised (PCL-R; R. D. Hare, 1991) diagnostic cutoff score of 30, the complete criminal career and community release profiles of 317 Canadian federal offenders (224 low scorers and 93 scoring within the psychopathic range) were investigated. Adult crimes were coded according to age at commission as well as violent, nonviolent, or nonsexually violent. Changes in performance following release into the community also were examined. Results indicated that offenders scoring within the psychopathic range consistently committed more violent and nonviolent crimes than their counterparts for about three decades, spanning their late adolescence to their late 40s. Numbers of nonviolent criminal offenses committed by high PCL-R scorers declined considerably after age 30 relative to violent offenses, which declined and then rebounded in the late 30s before a major reduction was evidenced. Throughout adulthood, high PCL-R scorers failed during community release significantly faster than did low scorers. Importantly, from a risk management perspective, the release performance of low PCL-R scorers improved with age, whereas the opposite was seen for high scorers.

Participants included all male offenders ($N = 317$) who: (1) had been incarcerated (including new admissions) in a medium security federal prison between November 1997 and June 1998, and (2) who had undergone a PCL-R assessment by a psychologist during their current term of incarceration. Participants mostly were White (70.8%; 23% North American Native; 2.2% Black; 4.0% unknown). The mean age was 43.5 years ($SD = 11.5$, range = 20.15 – 81.06). Age scores approximated a normal distribution.

The PCL-R scores were normally distributed with a mean of 24.7 ($SD = 6.84$), a median of 25.0, and a range of 3–39. There were 93 offenders with scores above 30. PCL-R scores were coded from records as reported in official risk assessments on these offenders. All PCL-R assessments had been conducted during the offenders' current incarceration.

Crimes were coded as either *violent* (robbery, assault, murder, possession of weapon, sex offenses, kidnapping, arson), *nonviolent* (theft, drug offenses, major driving offenses, fraud, escape, obstruction of justice, miscellaneous), or *nonsexually violent* (all violent crimes excluding sexual offenses). All crimes and conditional releases were categorized according to the age in which they occurred. The age categories coded were (with cumulative percentiles in parenthesis): 20–24 (3.1), 25–29 (11.6), 30–34 (25.2), 35–39 (41.5), 40–44 (58.5), 45–49 (72.0), 50–54 (83.6), 55–59 (91.2), and 60–over (100).

The average number of days between a release date and a new charge/violation was calculated for each offender within the different age categories. To estimate length of “opportunity time” in the community, the number of days between a recorded release and the next charge or conviction across the criminal career was totaled. The authors completed two rounds of coding to ensure accurate data classification/entry.

Regarding age at first offense, high scorers began committing crimes about 5 years earlier on average ($M = 20.01$, $SD = 4.07$) than low scorers ($M = 25.24$, $SD = 12.45$). In terms of factor scores, F2 scores, $r(310) = -.54$, $p < .0001$, but not F1 scores, $r(310) = .04$, $p > .05$, were significantly related to age at first offense.

Regarding total offenses committed across adulthood, high PCL-R scorers committed about twice as many crimes on average ($M = 38.18$, $SD = 37.13$) as low scorers ($M = 21.96$, $SD = 21.94$). In terms of factor scores, both F1, $r(311) = .14$, $p < .05$ and F2 scores, $r(310) = .31$, $p < .001$ were positively correlated with total criminal offenses perpetrated in adulthood.

High PCL-R scorers had committed significantly more thefts ($M = 16.43$, $SD = 26.13$ vs. $M = 6.06$, $SD = 8.97$), robberies ($M = 2.73$, $SD = 7.69$ vs. $M = 1.16$, $SD = 3.09$), drug offenses ($M = 1.28$, $SD = 2.50$ vs. $M = 0.65$, $SD = 1.48$), escapes ($M = 2.99$, $SD = 3.42$ vs. $M = 1.65$, $SD = 3.02$), kidnappings ($M = 0.73$, $SD = 1.69$ vs. $M = 0.36$, $SD = 1.06$), obstructions of justice ($M = 0.76$, $SD = 1.16$ vs. $M = 0.33$, $SD = 0.95$), and miscellaneous offenses ($M = 1.66$, $SD = 3.36$ vs. $M = 1.00$, $SD = 1.78$), whereas low scorers had committed significantly more sex offenses ($M = 4.04$, $SD = 5.79$ vs. $M = 2.95$, $SD = 7.83$) (all $ps < .05$). High scorers were not more likely than low scorers to have committed homicide. However, for high PCL-R scorers, there was a significant positive relationship between F1 scores and homicide, $r(92) = .23$, $p < .05$, but not between F2 scores and homicide, $r(92) = -.08$, $p > .05$. In contrast, for low scorers homicide was significantly related to F2 scores, $r(217) = .19$, $p < .01$, but not to F1 scores, $r(219) = -.05$, $p > .05$.

High PCL-R scoring offenders committed about twice as many ($M = 27.91$, $SD = 35.10$) nonviolent offenses as low scoring offenders ($M = 13.39$, $SD = 19.76$). For violent crimes, high PCL-R scorers committed a mean of 10.27 ($SD = 12.01$) crimes and low scorers committed a mean of 8.57 ($SD = 7.24$). For nonsexual violent crimes, high PCL-R scorers committed a mean of 7.32 ($SD = 9.74$) crimes compared to $M = 4.52$ ($SD = 5.56$) crimes by low scorers. F1 scores were correlated significantly with the total number of violent, $r(311) = .11$, $p < .05$ and nonviolent crimes, $r(311) = .11$, $p < .05$. F2 scores were correlated with the number of nonviolent, $r(309) = .33$, $p < .0001$ and nonsexual violent offenses, $r(309) = .26$, $p < .001$.

Next, analyses were completed to examine changes in crime across the criminal career as a function of psychopathy. Overall, there were negative correlations between age and total PCL-R scores, $r(310) = -.18$, $p < .01$ and between age and F2 scores, $r(310) = -.40$, $p < .001$. There was a slight positive correlation between age and F1 scores, $r(310) = .13$, $p < .05$. Frequency of criminal behavior differed according to age, $F(27, 288) = 14.66$, $p < .0001$ and to PCL-R group, $F(3, 312) = 8.97$, $p < .0001$. The interaction between age and psychopathy was significant, $F(27, 288) = 2.06$, $p < .01$. In terms of violent crimes, pairwise comparisons (all $ps < .05$)

indicated that between the ages of 20 and 24 years offenders committed more violent crimes than all other age groups except 25–29 years. Offenders committed more violence between the ages 25–29, 30–34, and 35–39 than they committed when they were 40 years of age or older (but the three younger groups did not differ from one another nor did the older groups). In terms of nonviolent crimes, every age group differed from one another, with each successive age group committing fewer crimes. In terms of nonsexually violent crimes, a similar pattern emerged with significantly fewer (nonsexual) violent crimes committed in each successive age group. The interaction of age and psychopathy was significant for violent crime, $F(9, 2826) = 3.37, p < .001$, nonviolent crime, $F(9, 2826) = 12.28, p < .001$, and nonsexual violent crime, $F(9, 2826) = 2.87, p < .01$.

In terms of criminal versatility, results suggested that all offenders became less diverse over time but that the change was more pronounced for high PCL-R scoring offenders (who initially were much more diverse anyhow). High PCL-R scorers committed significantly more violent crimes from the ages of 20–29 to 35–39 than low PCL-R scorers. High PCL-R scorers committed more nonviolent crimes consistently from age 20 to 39. Finally, high PCL-R scorers committed significantly more (nonsexual) violence between 20–29 and 35–39 years of age.

Regarding performance on release, high scorers spent fewer mean days on successful release ($M = 473.4, SD = 536.7$) than low scorers ($M = 797.04, SD = 972.83$) across adulthood. When PCL-R scores were considered as a continuous variable, a negative association between PCL-R scores and mean successful days on conditional release was observed, $r(122) = -.23, p < .01$. Significant negative correlations between mean successful days following a conditional release also were observed for: F2 scores, $r(122) = -.35, p < .001$, number of nonviolent crimes, $r(122) = -.25, p < .01$, and number of nonsexual violent crimes committed, $r(122) = -.28, p < .01$.

Results from a Cox regression survival analysis with age as a covariate indicated that age was a significant factor in release performance, $\chi^2(1) = 13.10, p < .001$. More specifically, low scorers demonstrated significantly better conditional release performance with increasing age, $r(6) = .83, p < .05$. In contrast, the release performance of high scorers remained poor and in fact deteriorated with age, $r(6) = -.88, p < .05$. High scorers were significantly more likely to have escaped or attempted escape during the ages of 20-24, 30-34, 35-39, and 40-44 years ($F_s(1, 315)$ ranged from 2.36 to 15.54, $p_s < .05$).

Taken together, this pattern of results indicates that although high PCL-R scorers demonstrated a decline in crime - especially nonviolent offending - across adulthood, they continued to experience a high degree of problems following release into the community: they were re-incarcerated more quickly following release than low scoring offenders and, whereas the ability of low scorers to remain crime-free in the community improved remarkably with age, high scorers actually got worse.

6. Skeem, J. L., Monahan, J., & Mulvey, E. P. (2002). Psychopathy, treatment involvement, and subsequent violence among civil psychiatric patients. *Law & Human Behavior*, 26, 577-603.

→ Community Violence

*Article summary also appears under Item R1

Participants were a subset of the MacArthur Violence Risk Assessment Study sample. Analyses were based on 871 patients rated using the PCL:SV. Patients' mean age was 30 years ($SD = 6$ years) and they primarily were White (70%; African American, 29%), and male (58%). They had independently determined primary diagnoses of depression or dysthymia (42%), substance abuse or dependence (22%), schizophrenia, schizophreniform, or schizoaffective disorder (16%), bipolar disorder or cyclothymia (13%), personality disorder (2%), or other disorder (3%). Some 41% of patients had a co-occurring major mental disorder and substance abuse or dependence disorder. Of these patients, 195 were classified as "potentially psychopathic," and 72 were classified as "psychopathic," using the recommended PCL:SV cutoff scores.

Patients were interviewed in the hospital by a research interviewer to obtain data on demographic and historical factors, and by a research clinician to confirm the medical record diagnosis and to administer several clinical scales. Research interviewers attempted to recontact enrolled patients in the community and interview them five times (every 10 weeks) over the 1-year period from the date of discharge from the index hospitalization to obtain information about a range of factors, including the patient's involvement in treatment and violence. A collateral informant was interviewed on the same schedule. The PCL:SV interview was completed during the follow-up period on the basis of information from both patient interviews and hospital records. In addition to interviews, hospital records were reviewed to assist in the completion of various scales, and arrest records were reviewed to provide information about offense histories and arrests that occurred during the follow-up period.

Patient self-report was used as the index of treatment involvement. At each follow-up, interviewers elicited details from patients about current mental health or substance abuse treatment and any interventions received during the follow-up period. The primary measure of treatment involvement was the total number of sessions that patients attended during each 10-week follow-up period. This measure was dichotomized into 0–6 sessions and 7 or more sessions.

The measure of violence was based on patient report, collateral informant report, and official records. At each follow-up interview, patients and collateral informants were queried regarding details about perpetration of any of eight categories of aggressive behavior (e.g., pushing, hitting) in the past 10 weeks. If multiple aggressive acts were associated with a particular incident, only the most serious act that occurred during the incident was coded. Two trained coders reviewed aggressive acts reported by any information source (patient, collateral, or records) to obtain a single reconciled report of the incident. Violence was defined as battery that resulted in physical injury, sexual assaults, assaultive acts that involved the use of a weapon, or threats made with a weapon in hand.

Analyses were completed to examine the basic relation between psychopathic patients' treatment involvement and subsequent violence. The two dichotomous measures of psychopathy classified patients as (a) nonpsychopathic (NPP; scores ≤ 12) or at least potentially psychopathic (PPP; scores > 12) groups, and (b) nonpsychopathic/mixed (NPM; scores < 18) or psychopathic (PSY; scores ≥ 18) groups. Only 6% of PPP patients who received seven or more treatment sessions during the first 10 weeks after hospital discharge were violent during the 10 subsequent weeks, whereas 23% of PPP patients who received six or fewer sessions were violent, $\chi^2(1) = 4.81, p < .05$. A similar pattern was observed when analyses were repeated using the 72 psychopathic (PSY) cases: 45 PSY patients had access to the community during the first follow-up period and completed both the first and second follow-up interviews. Eight percent of these PSY patients who received seven or more treatment sessions during the first 10 weeks after hospital discharge were violent during the 10 subsequent weeks, whereas 24% of PSY patients who received six or fewer sessions were violent. Averaging across follow-ups, PPP patients who received 0–6 treatment sessions during a given 10-week follow-up were approximately 2.5 times more likely to be violent during a subsequent follow-up than those who received more sessions. The average odds ratio across follow-ups suggested that psychopathic patients who received 0–6 treatment sessions during a given follow-up were about 3.5 times more likely to be violent during a subsequent follow-up than those who received more treatment, suggesting that treatment involvement was at least moderately associated with reduced violence potential among patients with psychopathic traits and even psychopathy.

The authors noted that because the present study did not include random assignment, selection bias could produce misleading results. Therefore, propensity score analyses were completed in an attempt to remove the effect of nonrandom assignment of study participants to treatment involvement groups in order to more accurately estimate treatment effects. A set of 17 clinical, demographic, and violence covariates of treatment involvement was reduced into a single composite propensity score for each case that modeled the treatment assignment process (which reflected each case's probability of receiving more treatment, given the set of covariates). The covariates of treatment attendance included: alcohol/drug abuse or dependence, depression, or comorbid depression and alcohol or drug-related disorders, legal status at hospital admission (voluntary/involuntary), symptoms of anxiety–depression, self-reported number of prior hospitalizations and age at first hospitalization, proportion of the patients' social network that were mental health professionals, an index of difficulty with the activities of daily living, age, sex, race (Caucasian/Noncaucasian), self-reported years of education and employment status (employed/unemployed) prior to hospital admission, and self-report of whether or not they were involved in a violent act during the 2 months preceding their index hospital admission. Propensity scores were computed by entering the 17 covariates in a stepwise logistic regression analyses to predict treatment group membership at follow-up 1. The association between participants' propensity scores and treatment involvement was moderately strong.

PPP patients' propensity scores were used as the sole covariate to obtain an unbiased estimate of the association of their treatment involvement with future violence. After controlling for propensity scores, the odds ratio for treatment involvement was 3.6, suggesting that, after controlling for the effects of treatment assignment, PPP patients who received 0–6 treatment sessions during the first follow-up period were approximately three to four times more likely to be violent during the second follow-up period than those who received more frequent sessions.

Similar results were obtained when these analyses were repeated for PPP patients' treatment involvement during follow-up 2 and violence during follow-up 3, and when all of these analyses were repeated using patients formally classified as psychopathic.

Analyses suggested that, although psychopathic patients (PPP or PSY) who received *little* treatment were no less likely to be involved in subsequent violence than those who received *no* treatment, those who received *more* treatment sessions were less likely to be involved in subsequent violence than those who received *little or no* treatment. Psychopathy did not significantly moderate the association of treatment involvement with subsequent violence: using the entire sample of patients, a direct logistic regression analysis was completed in which violence during follow-up 2 was the outcome, and the predictors of propensity scores, PCL:SV total scores, and treatment involvement at follow-up 1 were entered before the Psychopathy x Treatment interaction. Comparison of the log-likelihood ratios for models with and without the interaction term did *not* demonstrate significant improvement in the prediction of violence with the addition of the interaction term, ($\chi^2(1, N = 624) = 1.76, p = .19$). This finding suggests that psychopathy did not significantly moderate the association of treatment involvement with subsequent violence. This pattern of results also was observed when treatment involvement during follow-up 2 and violence during follow-up 3 were analyzed. Further analyses suggested that PCL:SV Part 1 did not moderate the association between treatment involvement and subsequent violence.

Even when the effects of a range of covariates *including psychopathy* were controlled for, the effect of treatment involvement remained strongly associated with violence (OR = 2.7). The authors argued that this result suggests that treatment involvement explained substantial variance in civil psychiatric patients' violence risk independent of substance abuse, psychopathy, and other factors that affected whether they obtained treatment.

Taken together, results suggest that psychopathic civil psychiatric patients who receive more treatment sessions (seven or more) during a 10-week period are approximately three times less likely to be violent during a subsequent 10-week period than those who receive fewer (six or fewer) sessions. This remains the case even after controlling for many variables that are associated with patients' treatment attendance. Regardless, even after controlling for the treatment assignment process, psychopathy (including Part 1) did not moderate the association of treatment involvement with patients' subsequent violence. Patients with psychopathic traits appeared as likely to benefit from *adequate* doses of treatment by becoming less violent as those without such traits.

Of relevance to HCR-20 item R1, the present results suggest the presence of a dose-response effect, such that psychopathic patients who received few sessions (1-6) during a follow-up were no less likely to be violent during a subsequent follow-up than those who received *no* treatment. This was not the case in the larger MacArthur study sample, where patients who received few sessions were less likely to be subsequently violent than those who received no treatment. Such a finding is consistent with the risk-need-responsivity principle.

7. Skeem, J. L., & Mulvey, E. P. (2001). Psychopathy and community violence among civil psychiatric patients: Results from the MacArthur violence risk assessment study. *Journal of Consulting & Clinical Psychology, 69*, 358-374.

→ Community Violence

Data on 1,136 patients from the MacArthur Violence Risk Assessment project were used to examine whether PCL:SV Parts 1 and 2 measure a unique personality construct that predicts violence among civil patients. The methodology of the larger project was described in the above summary of the study by Skeem and colleagues (2002). Briefly, the PCL:SV was completed on the basis of patient interviews and official records. Participants were classified as nonpsychopathic (NPP, scores < 12) and potentially psychopathic (PPP, total > 12). Mean PCL:SV scores for the sample were: Total (8.52, $SD = 5.60$); Part 1 (3.11, $SD = 3.00$); and Part 2 (5.41, $SD = 3.30$). Only 8% of study participants were classified as psychopathic (i.e., total score > 17).

Four indexes of criminal history were used, including (a) the patient's self-reported frequency of prior arrests since age 15 (coded as none, once, twice, and three or more), (b) the patient's self-reported type of prior arrests since age 15 (coded as none; property and minor crimes; serious crimes including rape, assault, and robbery; and murder), (c) police record of arrest(s) for crimes against persons since age 18 (coded as yes/no), and (d) police record of arrest(s) for crimes against property since age 18 (coded as yes/no). A single index of recent violence was used and reflected the patient's self-report of whether he or she was involved in a violent act (defined in the same way as violence was in the preceding section) in the 2 months preceding the index hospital admission. Aggressive behavior was divided into: (a) *violence*, or battery that resulted in physical injury, sexual assaults, assaultive acts that involved the use of a weapon, or threats made with a weapon in hand; and (b) *other aggressive acts*, or battery that did not result in physical injury. Aggressive acts reported by any information source (patients, collateral informants, or official records) at any follow-up were independently reviewed by two trained coders to obtain a single reconciled report of the act. The principal violence variable used in this study was dichotomous and reflected whether a patient committed any act or acts of violence, as defined above, in the community during the entire follow-up period (i.e., 1 year after hospital discharge).

On the basis of the PCL:SV threshold for considering diagnoses of psychopathy (total score > 12), the rate of violence among NPPs was compared with that among PPPs. PPPs were significantly more likely than NPPs to become violent, $\chi^2(1, N = 871) = 58.07, p = .000$. Fifty percent of PPPs were involved in violent acts, compared with only 22% of NPPs. PPPs were approximately 3.6 times more likely than NPPs to become involved in violence. The relationship between psychopathy (measured dichotomously) and violence was moderate ($phi = .26$).

Individuals who became involved in violence during the study obtained significantly higher total PCL:SV scores ($M = 11.8, SD = 5.3$) than those who did not ($M = 7.3, SD = 5.2$), $t(869) = -11.48, p = .000$. The relationship between PCL:SV total scores and violence was moderately strong ($eta = 0.36$), but violence was significantly better predicted by scores on Part 2 ($eta = 0.38$) than by scores on Part 1 ($eta = 0.28$), $T_2(860) = 3.42, p < .001$.

The AUC for the PCL:SV total score was 0.73 ($SE = 0.02$). The PCL:SV's accuracy in predicting other acts of aggression during any of the five follow-up intervals was 0.50 ($SE = .02$), which indicates that the PCL:SV performed no better than chance in predicting battery that does not result in physical injury.

A sequential stepwise logistic regression analysis (forward stepping, based on likelihood ratio statistics) was performed to assess the incremental validity of PCL:SV classifications in predicting violence after controlling for influential covariates. Covariates entered initially were (a) demographic characteristics (race, gender, SES, educational level, and verbal IQ), (b) multiple indexes of criminal history (frequency of prior arrests, arrest for person crime, arrest for property crime, and recent violence), (c) other personality disorders and traits (antisocial personality disorder, Cluster B personality disorder, and Novaco Anger Scale—Behavioral), and (d) substance use and diagnoses (drug-related diagnoses, alcohol related diagnoses, and drug use during the study). **Comparison of the log-likelihood ratios for models with and without the PCL:SV showed significant improvement in prediction of violence with the addition of PCL:SV classifications, $\chi^2(1, N = 757) = 7.03, p = .008$, Wald statistic for PCL:SV = 7.11 ($p < .01$). To determine the extent to which the incremental validity of the measure was based on Part 1 or Part 2, the above analysis was repeated, but participants' summed scores on Parts 1 and 2 were entered on the last step in place of PCL:SV classifications. When entry into the model was set at .05, only Part 2 entered. Comparison of the log-likelihood ratios for models with and without Part 2 showed significant improvement in prediction of violence with the addition of Part 2 alone, $\chi^2(1, N = 755) = 21.54, p = .000$.**

The key findings of this study were as follows: (1) the PCL:SV was a relatively strong predictor of violence, even under relatively low base rate conditions; (2) the predictive power of the PCL:SV was reduced substantially, but still remained significant, after controlling for several covariates (i.e., recent violence, criminal history, substance abuse, and other personality disorders); and (3) the predictive power of the PCL:SV is based principally on Part 2 rather than on Part 1.

8. Walsh, Z., Swogger, M. T., & Kosson, D. S. (2004). Psychopathy, IQ, and violence in European American and African American county jail inmates. *Journal of Consulting and Clinical Psychology, 72*, 1165-1169.

→ Community Violence

The authors investigated whether the accuracy of the prediction of criminal violence may be enhanced by the combination of psychopathy and IQ. Participants were male inmates (326 European American and 348 African American) at a county jail near Chicago serving terms of 1 year or less. The inmates were invited to participate if they had been convicted of a felony or misdemeanor, were not taking psychotropic medications, and were able to read and speak English.

On the basis of interview and institutional file data, trained raters completed the PCL-R. Men with PCL-R scores of 30 or greater were classified as psychopathic participants and those with

PCL-R scores of 20 or lower were classified as nonpsychopathic participants. Interrater reliability for 167 (24%) of the cases was $r = .81$; Cronbach's alpha was .85 for this sample. PCL-R items Juvenile Delinquency, Revocation of Conditional Release, and Criminal Versatility were excluded and total PCL-R scores were prorated. Participants also completed a brief IQ measure, the Shipley Institute of Living Scale—Revised (SILS-R). IQ scores were used to classify participants into approximately equal groups of relatively high, medium, and low IQ. Cutoff scores for these groups were derived separately for European American and African American participants. European American participants with IQs of 90 and below and African American participants with estimated IQs of 80 or below were classified as relatively low IQ. European American participants with IQs of 101 or greater and African American participants with estimated IQs of 93 or greater were classified as relatively high IQ.

The number of violent charges was derived from a review of jail pretrial files. Violent charges included the following: robbery, assault, murder, weapons charges, kidnapping, arson, criminal damage to property, and sex crimes other than indecent exposure. Participants were excluded from analyses if they did not complete the SILS-R, if institutional file information was insufficient to assess violent charges, or if the interviewer's confidence in the PCL-R rating was low.

In the European American group, violent charges were significantly correlated with both PCL-R scores ($r = .20, p = .05$) and with IQ ($r = -.13, p = .05$). Hierarchical regressions showed that IQ scores added significantly to the prediction of violence after controlling for PCL-R ($r = -.15, p = .05$) and that PCL-R scores continued to add significantly after controlling for IQ ($r = .21, p = .05$). The PCL-R x IQ interaction did not contribute significantly to predicting violent charges. **Logistic regression analyses with the dichotomous violent-nonviolent criterion showed that the PCL-R added significantly to the prediction of violence both independently, Wald $\chi^2 (1, N = 326) = 12.99, p < .05$, and after controlling for IQ, Wald $\chi^2 (1, N = 326) = 13.72, p < .05$.** Neither IQ nor the interaction term approached significance as predictors of violence with the dichotomous criterion.

Among African Americans, PCL-R scores also correlated significantly with violence ($r = .20, p = .05$), but there was no relation between IQ and violence. PCL-R scores continued to predict violence after controlling for IQ ($r = .19, p = .05$). As among European Americans, the PCL-R x IQ interaction was not significant. Logistic regression produced a similar pattern of results, with PCL-R scores being the only significant predictor of violence, both independently, Wald $\chi^2 (1, N = 348) = 10.61, p < .05$, and after controlling for IQ, Wald $\chi^2 (1, N = 348) = 10.69, p < .05$.

9. Warren, J. I., South, S. C., Burnette, M. L., Rogers, A., Friend, R., Bale, R., & Van Patten, I. (2005). Understanding the risk factors for violence and criminality in women: The concurrent validity of the PCL-R and HCR-20. *International Journal of Law and Psychiatry*, 28, 269-289.

→ Community Violence

The potential usefulness of the PCL-R and HCR-20 in determining level of risk for violent behavior and other forms of criminality was investigated. For the purposes of this summary, results for the PCL-R will be the focus. Participants were part of a larger study that examined DSM-IV personality disorders using the SCID-II. In conducting PCL-R and HCR-20 interviews, all 261 inmates who had completed the SCID-II interviews approximately 12 months earlier and who were still housed at the maximum-security prison were approached and invited to participate in this subsequent stage of data collection. The final sample comprised 132 women. Among this sample, 60% of the women were under the age of 32 years and 65% were of minority status. Seventy-seven percent of the sample was serving sentences of greater than 5 years and 83% had criminal histories containing at least one conviction for a violent crime.

Each inmate file was reviewed by six coders who summarized information concerning the inmate's family history, psychiatric history, employment history, and criminal record; these summary files were reviewed by the PCL-R and HCR-20 coders before they conducted their assessment interviews. Intraclass Correlation Coefficients (ICCs) were: Factor 1 (.88); Factor 2 (.99); and total (.95).

Scores on three HCR-20 items were obtained from alternative sources that were thought to be superior to those obtained through a clinical interview (H5 was coded from data obtained for the administration of the Diagnostic Interview Schedule (DIS-IV) for the Alcohol and Substance Abuse module; H9 was scored based upon data obtained in the SCID-II interview; C1 was coded with 0 if inmates received a total Barratt Impulsivity Scale score below 40, 1 if they scored between 40 and 79, and 2 if scoring above 80). Reliability coding of 28 cases resulted in intraclass correlation coefficients of 0.92 for the H scale, 0.60 for the R scale, 0.76 for the C scale and 0.94 for the HCR-20 total score.

Information for both the instant offense and all prior offenses was obtained from the prison file of each inmate and combined for the current study. Violent crimes included any type of murder, in addition to aggravated assault and assault and battery. Potentially violent crimes included robbery, kidnapping, and arson. Crimes against persons included negligent homicide, contributing to the delinquency of a minor, hit and run, coercion, unlawful restraint, harassment, criminal possession of weapon, menacing, and reckless endangerment. Property crimes included breaking and entering, tampering, trespassing, larceny, auto theft, shoplifting, possession of stolen property, forgery, fraud, uttering, bribery, and conspiracy. Minor crimes were considered to include parole and probation violations, driving while intoxicated, public drunkenness, failure to appear, gambling, resisting arrest, loitering, public lewdness, traffic infractions, and prostitution. Finally, we included generally categories of sex crimes (rape, sexual assault) and drug crimes (possession). An overall category of total violent crimes subsumed the violent, potentially violent, crimes against persons, and sex categories, while an overall category of total nonviolent crimes subsumed the property, drugs, and minor crime categories.

Descriptive characteristics for the PCL-R indices are as follows: total ($M = 22.80$, $SD = 6.98$, $ICC = .95$); Hare Factor 1 ($M = 9.31$, $SD = 3.82$, $ICC = .88$); Hare Factor 2 ($M = 10.82$, $SD = 3.89$, $ICC = .99$); Cooke Factor 1 ($M = 4.89$, $SD = 2.09$, $ICC = .70$); Cooke Factor 2 ($M = 4.41$, $SD = 2.37$, $ICC = .88$); and Cooke Factor 3 ($M = 6.73$, $SD = 2.42$, $ICC = .78$).

Inmates who had been convicted of murder scored significantly lower on the PCL-R ($M = 19.8$) than those inmates who had not been charged with murder ($M = 24.2$). In contrast, women who had convictions for property crimes scored higher on the PCL-R ($M = 25.1$) than those who did not have convictions for property crimes ($M = 21.8$). Minor crimes showed a similar pattern to property crimes, with those women having convictions scoring significantly higher on the PCL-R. There were no significant differences on the PCL-R for the other crime categories, including violent, potentially violent, sex, and drug crimes. Further, there were no significant differences between high and low scorers in terms of whether they had been involved in institutional (prison) violence.

Women who had committed murder had significantly higher scores on Hare Factor 2 and Cooke Factor 3; no differences were observed on the other PCL-R indices. The AUC value for the PCL-R in predicting total violent criminal charges was 0.67 (95% CI = .56 - .79, $p < .01$).

Additional Relevant Sources Supportive of H7 – Abstracts Provided

1. Blackburn, R., & Coid, J. W. (1998). Psychopathy and the dimensions of personality disorders in violent offenders. *Personality and Individual Differences, 25*, 129-145.

The relationship of factors of personality disorder to psychopathy was investigated to determine whether psychopathy is more appropriately construed as a dimension of personality disorder rather than as one of several discrete categories of personality disorder. Comparisons were also made of the associations of personality disorders and psychopathy with measures of established personality dimensions, criminality and lifetime psychopathology. 167 male violent offenders (mean age 34.75 yrs) detained in English prisons and a maximum security psychiatric hospital were assessed with the Structured Clinical Interview for DSM-III Axis II disorders (SCID-II) and the Hare Psychopathy Checklist-Revised (PCL-R). Factor analysis of personality disorder measures yielded 3 factors identified as impulsivity, detachment, sensitivity and compulsivity. The first 3 factors were related to measures of the personality dimensions of agreeableness, extraversion and neuroticism, respectively. The PCL-R correlated highly with the impulsivity factor. Both had significant associations with violent and nonviolent criminality, but relationships to psychopathology were limited to substance abuse history.

2. Douglas, K. S., Ogloff, J. R. P., Nicholls, T. L., & Grant, I. (1999). Assessing risk for violence among psychiatric patients: The HCR-20 violence risk assessment scheme and the psychopathy checklist: Screening version. *Journal of Consulting and Clinical Psychology, 67*, 917-930.

This study examined the predictive validity of the HCR-20 (Historical, Clinical, and Risk Management) violence risk assessment scheme and the Psychopathy Checklist: Screening Version (PCL:SV). Files of 193 civilly committed patients were coded. Patients were followed up in the community for an average of 626 days. Receiver operating characteristic analyses with the HCR-20 yielded strong associations with violence (areas under curve [AUCs = .76-.80). Persons scoring above the HCR-20 median were 6 to 13 times more likely to be violent than those scoring below the median. PCL:SV AUCs were more variable (.68-.79). Regression analyses revealed that the HCR-20 added incremental validity to the PCL:SV and that only HCR-20 subscales predicted violence. Implications for risk assessment research, and the clinical assessment and management of violence, are discussed.

3. Douglas, K. S., Strand, S., Belfrage, H., Fransson, G., & Levander, S. (2005). Reliability and validity evaluation of the psychopathy checklist: Screening version (PCL:SV) in Swedish correctional and forensic psychiatric samples. *Assessment, 12*, 145-161.

This study evaluated the structural reliability, construct-related validity, and cultural validity generalization of the Hare Psychopathy Checklist: Screening Version (PCL:SV) in a sample of more than 560 male and female Swedish forensic psychiatric treatment patients, forensic evaluation patients, and criminal offenders. Structural reliability was excellent for most indices. PCL:SV scores were higher for males than females for total and Part 1 scores (interpersonal/affective features) but not for Part 2 (behavioral features). With some exceptions, PCL:SV scores were meaningfully related to aggression to others, a measure of risk for violence, substance use problems, personality disorder (positive), and psychosis (negative). Correlations between

PCL:SV and aggression were larger for females than males, although the difference was smaller when personality disorder was held constant. The structural reliability and pattern of validity coefficients were comparable in these Swedish samples to other non-North American samples. Implications for the cross-cultural manifestation and correlates of psychopathy are discussed.

4. Douglas, K. S., Yeomans, M., & Boer, D. P. (2005). Comparative validity analysis of multiple measures of violence risk in a sample of criminal offenders. *Criminal Justice and Behavior*, 32, 479-510.

This study compared the predictive validity of multiple indices of violence risk among 188 general population criminal offenders: Historical-Clinical-Risk Management-20 (HCR-20) Violence Risk Assessment Scheme, Violence Risk Appraisal Guide (VRAG), Violent Offender Risk Assessment Scale (VORAS), Hare Psychopathy Checklist-Revised (PCL-R), and Screening Version (PCL:SV). Several indices were related to violent recidivism with large statistical effect sizes: HCR-20 (Total, Clinical and Risk Management scales, structured risk judgments), VRAG, and behavioral scales of psychopathy measures. Multivariate analyses showed that HCR-20 indices were consistently related to violence and that the VRAG entered some analyses. Findings are inconsistent with a position of strict actuarial superiority, as HCR-20 structured risk judgments--an index of structured professional or clinical judgment--were as strongly related to violence.

5. Gray, N. S., Snowden, R. J., MacCulloch, S., Phillips, H., Taylor, J., & MacCulloch, M. J. (2004). Relative efficacy of criminological, clinical, and personality measures of future risk of offending in mentally disordered offenders: A comparative study of HCR-20, PCL:SV, and OGRS. *Journal of Consulting and Clinical Psychology*, 72, 523-530.

The authors compared the ability of 3 commonly used measures of risk of future offending in a sample of 315 mentally disordered offenders discharged from a medium-secure unit in the United Kingdom. The authors explored whether the same criminogenic factors that predict recidivism in the general population also predict recidivism in mentally disordered offenders. The actuarial measure, using mainly criminological variables, provided the best prediction of recidivism compared with measures based on personality or clinical information, which provided no incremental validity over the actuarial measure. The authors suggest that for maximum efficacy clinical risk should be rated at a time of active symptoms rather than at discharge when symptoms are minimal.

6. Kroner, D. G., Mills, J. F., & Reddon, J. R. (2005). A coffee can, factor analysis, and prediction of antisocial behavior: The structure of criminal risk. *International Journal of Law and Psychiatry*, 28, 360-374.

The predictive accuracy of the Psychopathy Checklist-Revised, Level of Service Inventory-Revised, Violence Risk Appraisal Guide, and the General Statistical Information on Recidivism were compared to four instruments randomly generated from the total pool of original items. None of the four original instruments better predicted post-release failure than the four randomly generated instruments. These results suggest two conclusions: (a) the instruments are only measuring criminal risk, and (b) no single instrument has captured sufficient risk assessment

theory to result in better prediction than randomly derived instruments measuring criminal risk. A two-stage factor analysis was completed on 1614 cases. This analysis of the risk items indicated a 4-factor solution and all 4 factors were equal to the original instruments in predicting post-release failure. Thus, the original instruments did not improve prediction over randomly structured scales, nor did the restructuring of items improve risk assessment, suggesting substantial deficiencies in the conceptualization of risk assessment and instrumentation. We argue that developing a risk-based construct, which involves hypothesis testing and an explanation of behavior, is the optimal method to advance risk assessment within the criminal justice and mental health systems. Such an approach would provide targeted areas for clinical intervention that are salient to risk.

7. Kunz, M., Yates, K. F., Czobor, P., Rabinowitz, S., Lindenmayer, J., & Volavka, J. (2004). Course of patients with histories of aggression and crime after discharge from a cognitive-behavioral program. *Psychiatric Services*, 55, 654-659.

Objective: Patients exhibiting aggressive or criminal behavior present a challenge to treaters and caregivers. After discharge from an inpatient facility, such patients are at high risk of rehospitalization and re-arrest. A long-term behaviorally based cognitive skills program was developed and administered to a group of such high-risk inpatients. The authors report the results of a postdischarge follow-up of this group. Methods: After patients entered the inpatient treatment program, their psychiatric and criminal histories were recorded, and a battery of psychological measures were administered, including IQ tests and the Hare Psychopathy Checklist. After discharge, multiple sources were used to obtain information about patients' outcomes. Results: Eighty-five patients were followed for between six months and two years after discharge. Thirty-three of these patients (39 percent) remained stable in the community, 35 (42 percent) were rehospitalized, and 17 (20 percent) were arrested. Several variables that were ascertained before discharge predicted rehospitalization or arrest rates: comorbid antisocial personality disorder, higher score on the Psychopathy Checklist, history of arrests for violent crimes, and history of a learning disability. In addition, patients who developed substance use problems or did not adhere to medication treatment after discharge were more likely to be rehospitalized or arrested. Conclusions: Arrest rates were low compared with those observed in studies with similar populations. Although this outcome may be attributable to the treatment program, this naturalistic study could not prove that. The predictors of poor outcome may be used to develop a follow-up treatment program that focuses more resources on patients who are at the highest risk.

8. Laurell, J., & Daderman, A. M. (2005). Recidivism is related to psychopathy (PCL-R) in a group of men convicted of homicide. *International Journal of Law and Psychiatry*, 28, 255-268.

It is well known that psychopaths are a group with high risk for criminality. Despite that, researchers and clinicians have not yet agreed on a general cause of psychopathy. However Raine [Raine, A. (2002). Biosocial studies of antisocial and violent behavior in children and adults: A review. *Journal of Abnormal Child Psychology*, 30, 311-326.] advocated a biosocial model of violent behavior where the greatest risk for criminal behavior occurred when both heredity and environmental risk factors (e.g., social class, childhood history) were present. In this follow-up study, 35 men convicted of homicide were assessed retrospectively for psychopathy

according to the Psychopathy Checklist-Revised (PCL-R). Information on personal history, as well as from legal documents and records of offenses committed by the subjects was also obtained. Fourteen of the 35 men were classified as psychopaths. Two men, both rated as psychopaths, had criminal parents. Twenty-seven of the men had a social relationship with their victim, and eleven out of these were rated as psychopaths. There was no difference in PCL-R scores between those who had a social relationship with their victim and those who did not. The psychopaths relapsed more frequently than the nonpsychopaths into criminality after their prison term. This result confirms previous research indicating that psychopathy is a risk factor for recidivism. It is, therefore, very important that psychopaths get the best possible treatment, aftercare, and supervision.

9. Looman, J., Abracen, J., Serin, R., & Marquis, P. (2005). Psychopathy, treatment change, and recidivism in high-risk, high-need sexual offenders. *Journal of Interpersonal Violence, 20*, 549-568.

The present study investigated 154 consecutive admissions to the Regional Treatment Center (Ontario) Sex Offender Treatment Program with reference to psychopathy and outcome. Ratings of treatment behavior, as well as clinical judgments as to whether risk was reduced, were coded based on treatment reports. With reference to Psychopathy Checklist-Revised (PCL-R) scores, survival analyses indicated that high scorers recidivated at significantly higher rates than low scorers. However, offenders who received high PCL-R scores and lower scores on measures of treatment behavior recidivated at the same rate as low scorers on the PCL-R. Furthermore, among high PCL-R offenders, those rated as lower risk at posttreatment in fact reoffended at a lower rate than those whose risk was rated as unchanged, although this difference failed to reach significance. Findings are discussed in light of the clinical and research literature.

10. Nicholls, T. L., Ogloff, J. R. P., & Douglas, K. S. (2004). Assessing risk for violence among male and female civil psychiatric patients: The HCR-20, PCL:SV, and VSC. *Behavioral Sciences & the Law, 22*, 127-158.

This study evaluated the predictive validity of violence risk assessments conducted using the HCR-20, the Psychopathy Checklist: Screening Version (PCL:SV), and by the Violence Screening Checklist (VSC) in a sample of 268 involuntarily hospitalized male and female psychiatric patients. Information pertaining to violence and crime was coded from medical charts and correctional records. The HCR-20/PCL:SV evidenced modest non-significant associations in postdictive assessments of inpatient violence among men. Moderate to strong significant associations were found between the HCR-20/PCL:SV and inpatient violence among women. Pseudo-prospective assessments using the HCR-20 and PCL:SV resulted in moderate to large relationships with violence and crime in men and women following community discharge. It is concluded that the VSC is a promising tool for assessing acute inpatient violence risk with men. Findings offer preliminary validation of the predictive validity of the HCR-20 and PCL:SV with female civil psychiatric patients.

11. Nolan, K. A., Volavka, J., Mohr, P., & Czobor, P. (1999). Psychopathy and violent behavior among patients with schizophrenia or schizoaffective disorder. *Psychiatric Services, 50*, 787-792.

Explored the relationship between psychopathy and violence among patients with schizophrenia. Patients with and without a history of persistent violent behavior were compared for comorbidity of psychopathy and schizophrenia or schizoaffective disorder. The Psychopathy Checklist: Screening Version was administered to 51 patients, 26 violent patients and 25 matched nonviolent patients. Mean psychopathy scores were higher for violent patients than nonviolent patients. All of the nonviolent patients scored below the cutoff for possible psychopathy. Higher psychopathy scores were associated with earlier age of onset of illness and more arrests for both violent and nonviolent offenses.

12. Porter, S., Woodworth, M., Earle, J., Drugge, J., & Boer, D. (2003). Characteristics of sexual homicides committed by psychopathic and nonpsychopathic offenders. *Law & Human Behavior, 27*, 459-470.

The official file descriptions of sexual homicides committed by 18 psychopathic and 20 nonpsychopathic Canadian offenders were coded (by coders unaware of Psychopathy Checklist-Revised [PCL-R] scores) for characteristics of the victim, victim/perpetrator relationship, and evidence of gratuitous and sadistic violent behavior. Results indicated that most (84.7%) of the sexual murderers scored in the moderate to high range on the PCL-R. The majority of victims (66.67%) were female strangers, with no apparent influence of psychopathy on victim choice. Homicides committed by psychopathic offenders (using a PCL-R cut-off of 30) contained a significantly higher level of both gratuitous and sadistic violence than nonpsychopathic offenders. Most (82.4%) of the psychopaths exhibited some degree of sadistic behavior in their homicides compared to 52.6% of the nonpsychopaths. Implications for homicide investigations are discussed.

13. Salekin, R. T., Rogers, R., Ustad, K. L., & Sewell, K. W. (1998). Psychopathy and recidivism among female inmates. *Law & Human Behavior, 22*, 109-128.

Examined the relationship between psychopathy and recidivism among women. Recidivism data on a sample of 78 female inmates were examined at a 1-yr interval in relation to the Psychopathy Checklist-Revised (PCL-R), inclusion criteria for the Antisocial Personality Disorder Diagnosis from the Personality Disorder Examination (PDE), and selected scales from the Personality Assessment Inventory (PAI; Antisocial and Aggression scales). The egocentricity subscale of the PAI, Factor 1 of the PCL-R, and the verbal aggression subscale of the PAI were the best predictors of future recidivism. Specific differences emerged between male and female offenders when comparing the present data with previous studies of male psychopaths.

14. Simourd, D. J., & Hoge, R. D. (2000). Criminal psychopathy: A risk-and-need perspective. *Criminal Justice & Behavior*, 27, 256-272.

The present study explored whether a risk/needs perspective could assist in understanding the construct of criminal psychopathy as assessed by the Psychopathy Checklist-Revised (PCL-R). Three hundred and twenty-one male inmates (mean age 30.3 yrs) serving sentences for violent offenses were assessed on the PCL-R and administered a variety of psychometric measures relevant to criminal conduct. Using a traditional PCL-R cutoff, the study designated 36 participants (11.2%) as psychopaths and 285 (88.8%) were designated as non-psychopaths and compared on various criminal conduct and psychometric variables. Results showed that psychopaths had significantly greater risk/needs areas than nonpsychopaths, and this pattern remained when alternative diagnostic cutoffs were used. Implications of the findings with respect to theory and practice are considered.

15. Stadtland, C., Hollweg, M., Kleindienst, N., Dietl, J., Reich, U., & Nedopil, N. (2005). Risk assessment and prediction of violent and sexual recidivism in sex offenders: Long-term predictive validity of four risk assessment instruments. *Journal of Forensic Psychiatry & Psychology*, 16, 92-108.

The long term predictive validity of four current risk assessment instruments (Static-99, HCR-20, SVR-20, PCL-R) was assessed in Germany on three different groups of subjects. The groups consisted of 73 sex offenders released from a prison-based special therapeutic unit (therapeutic sample), 15 individuals who did not complete this treatment (drop-outs), and another 46 subjects who were assessed in a psychiatric hospital having been accused of a sexual offense (assessment sample). The results of the three samples were then compared. The outcome was obtained by examining the national conviction registry. The mean follow-up time was 9 years (range: 1 - 340 months). The highest rate of recidivism was observed in the dropout group, with only one individual not reoffending. The assessment group had slightly fewer reoffenses compared to the treatment group, which had been selected as a high risk population. The treatment sample exceeded the assessment sample, especially concerning sexual reoffenses, but less so concerning violent reoffenses. Of all the assessment instruments and using the total sample, the Static-99 was the most efficient predictor of all, violent non-sexual and non-contact sexual recidivism. For the prediction of contact sexual recidivism the AUC of the HCR-20 and the SVR-20 was slightly better, but very similar to the Static-99. These differences between assessment instruments were, however, not statistically significant. The AUC for the Static-99 was smaller in the treatment group, but larger than for other assessment instruments. The Static-99 risk categories correlated significantly with the Kaplan-Meier survival functions.

16. Stadtland, C., Kleindienst, N., Kröner, C., Eidt, M., & Nedopil, N. (2005). Psychopathic traits and risk of criminal recidivism in offenders with and without mental disorders. *International Journal of Forensic Mental Health*, 4, 89-97.

The aim of this study was to compare the long-term predictive validity of the PCL-R for offenders with severe mental disorders, substance abuse and personality disorders and for offenders without mental disorders. The sample consisted of 262 perpetrators who were assessed for their criminal responsibilities. The PCL-R was assessed retrospectively from file data.

Participants were prospectively followed-up for an average observation period of 58.6 months (range -138 months), with the first entry into the official criminal records of the National Conviction Registry serving as the endpoint. PCL-R scores were significantly different between the three diagnostic groups. The highest PCL-R scores were found in offenders with personality disorders and/or substance abuse. In all three groups the PCL-R predicted violent, but not non-violent reoffenses with moderate predictive validity. The PCL-R is therefore a moderately strong predictor for violent reoffenses in offenders with mental disorders, personality disorders and/or substance abuse and for those offenders without mental disorders, but failed to predict non-violent criminal recidivism.

17. Steels, M., Roney, G., Larkin, E., Jones, P., Croudace, T., & Duggan, C. (1998). Discharged from special hospital under restrictions: A comparison of the fates of psychopaths and the mentally ill. *Criminal Behavior & Mental Health*, 8, 39-55.

Compared the long-term course and outcome of a group of special hospital discharges. Serial casenote reports on 75 men and 20 women with psychopathic disorder were compared with 70 men and 19 women with mental illness (93% schizophrenia) on the outcome measures of mortality, proportion of time spent on restriction, proportion of time spent in different domiciles during restriction, reconvictions, imprisonment, and psychosocial outcome. The mentally ill were matched to a consecutive group with psychopathic disorder and all the Ss were on restriction orders. Mortality for both men and women was twice that of the population base rate adjusted for age and the length of follow-up but there was no difference between the 2 groups. Both sex and the legal classification affected the course of patients after their discharge. Men with psychopathic disorder were twice as likely to be convicted and 4 times more likely to be imprisoned compared with mentally ill men. Females generally had a more satisfactory outcome than males irrespective of the Mental Health Act classification. Results show that outcome after discharge is complex with re-offending and psychosocial adjustment being discordant.

18. Tengström, A., Grann, M., Långström, N., & Kullgren, G. (2000). Psychopathy (PCL-R) as a predictor of violent recidivism among criminal offenders with schizophrenia. *Law & Human Behavior*, 24, 45-58.

Hare's Psychopathy Checklist-Revised (PCL-R) was used to test the hypothesis that psychopathy predicts violent recidivism in a cohort subjected to forensic psychiatric investigation and consisting of 202 male violent offenders (aged 16-67 yrs) with schizophrenia. Psychopathy was assessed with retrospective file-based ratings. Mean follow-up time after detainment was 51 months. Twenty-two percent of the offenders had a PCL-R score ≥ 26 (cutoff), and the base rate for violent recidivism (reconvictions) during follow-up was 21%. Survival analysis showed that psychopathy was strongly associated to violent recidivism. The area under the curve of the receiver operating characteristics of PCL-R total score to predict violent recidivism varied between different time frames from .64 to .75. Cox regression analyses revealed that other potential risk factors could not equally well or better explain violent recidivism in the cohort than psychopathy as measured by PCL-R.

19. Tengström, A., Hodgins, S., Grann, M., Långström, N., & Kullgren, G. (2004). Schizophrenia and criminal offending: The role of psychopathy and substance use disorders. *Criminal Justice and Behavior*, 31, 367-391.

This study investigated the associations of psychopathy and substance use disorders (SUDs) with criminal offending among 202 men with schizophrenia and 78 men with a primary diagnosis of psychopathy. Comparisons among six groups of offenders indicated that non-mentally ill offenders diagnosed with psychopathy committed the highest numbers of offenses per year at risk. Among offenders with schizophrenia, those with high psychopathy scores committed more crimes than those with low psychopathy scores. Among non-mentally ill offenders with psychopathy and schizophrenic offenders with high psychopathy scores, those with and without SUDs committed, on average, similar numbers of offenses. These findings suggest that among offenders with psychopathic traits, the traits, not substance abuse, are associated with criminal offending.

Narrative Review for H7

1. D'Silva, K., Duggan, C., & McCarthy, L. (2004). Does treatment really make psychopaths worse? A review of the evidence. *Journal of Personality Disorders, 18*, 163-177.

We aimed to evaluate critically the evidence behind the perceived inverse association between the degree of psychopathy as reflected by a high score on the Hare Psychopathy Checklist-Revised (PCL-R) and treatment response. A literature search with the key identifiers of PCL-R (or its derivatives) and treatment response produced 24 studies that were then systematically evaluated. This showed that only three studies were of an appropriate research design to answer the question and of these, none met our standard for an acceptable study. We conclude therefore that the commonly held belief of an inverse relationship between high-scores on the PCL-R and treatment response has not been established.

2. Lynam, D. R., & Gudonis, L. (2005). The development of psychopathy. *Annual Review of Clinical Psychology, 1*, 381-407.

In this review, we explore two aspects of the development of psychopathy. First, we examine what psychopathy looks like across time. Second, we ask where psychopathy comes from. Much recent empirical work supports the idea that psychopathy in childhood and adolescence looks much like psychopathy in adulthood. Research utilizing recently created juvenile psychopathy indices demonstrates that juvenile psychopathy can be assessed reliably and that the nomological network surrounding the construct is quite similar to the one around adult psychopathy. Juvenile psychopathy is robustly related to offending, other externalizing problems, low levels of Agreeableness and Conscientiousness, and deficits in emotional processing and inhibition. Juvenile psychopathy is also relatively stable across adolescence. Much less research has examined from whence psychopathy comes, although several theories are reviewed. We close with a discussion of recent objections to the downward developmental extension of psychopathy to juveniles and some suggestions for additional research.

3. Patrick, C. J., & Zempolich, K. A. (1998). Emotion and aggression in the psychopathic personality. *Aggression & Violent Behavior, 3*, 303-338.

This paper presents an integrative conceptual framework for understanding relationships between psychopathy and aggression, and reviews the extant relevant literature in relation to this framework. Issues pertaining to conceptualization and subtyping of aggression are reviewed with reference to contemporary emotion theory, and recent research on the emotional and temperamental underpinnings of criminal psychopathy is described. It is argued that different forms of aggression may be related to disparate facets of psychopathy, and that these relationships may be mediated by common dispositional factors. Methodological limitations of existing studies are identified, and suggestions for future research are offered.

4. Skeem, J. L., Poythress, N., Edens, J. F., Lilienfeld, S. O., & Cale, E. M. (2003). Psychopathic personality or personalities? Exploring potential variants of psychopathy and their implications for risk assessment. *Aggression and Violent Behavior, 8*, 513-546.

Although psychopathy typically has been construed as a relatively uniform construct, seminal theories and contemporary research suggest that it may be heterogeneous. In this article, the most promising literature is distilled to distinguish among potential variants of antisocial personality disorder (APD) that can be derived from, and informed by, modern conceptions of psychopathy. This analysis suggests that there are primary and secondary variants of psychopathy, which may be distinguished based on the extent to which they are heritable and are characterized by affective deficits, impulsivity, trait anxiety, and characteristics of borderline and narcissistic personality disorders (NPD). These variants also may differ in their patterns of violence and responsiveness to treatment. If variants of psychopathy can be identified reliably and supported empirically, psychopathy may be transformed from a global label to a set of more specific constructs that improve our ability to understand, manage, and treat individuals who have largely been regarded as dangerous and unbeatable.

H8 Early Maladjustment

1. Babinski, L.M., Hartsough, C.S., & Lambert, N.M. (1999). Childhood conduct problems, hyperactivity-impulsivity, and inattention as predictors of adult criminal activity. *Journal of Child Psychology and Psychiatry*, 40, 347-355.

→ Community General Criminality

This prospective study examined the relationship between childhood ADHD/CD and adult criminal activity. The sample was drawn from a larger dataset of children identified in 1974 for a study of the prevalence of hyperactivity among 5212 school-age children. Participants in the present sample ($N = 492$) were 229 physician-identified hyperactive children (based on DSM-II criteria), 160 children stratified by gender and selected randomly from the same grades and schools as the hyperactive children, and 103 children who had been nominated as hyperactive or rated by a parent or teacher as having some behavioral symptoms but who were not diagnosed as hyperactive by their attending physician. At baseline, the mean age of the sample was 9.35 years, 24% was minority ethnicity, and 22% were girls. Participants were followed up in 1992, at which time 81% (400) of the initial sample was located and interviewed. The mean age of the sample at follow-up was 26.6 years. The final sample comprised the 230 adult males and 75 adult females for whom data were available from both the childhood baseline assessment and the adult follow-up.

Both parents and teachers independently rated the child's behavioral difficulties using the Children's Attention and Adjustment Survey (CAAS) when the child entered the study. At the adult follow-up, subjects self-reported their criminal involvement by completing the What's Happening Questionnaire. The participant indicated how many times s/he committed each type of crime (including crimes against people). Crimes against people included 'assault without a weapon,' 'hit spouse or partner,' 'assault with a weapon,' 'robbery (theft with confrontation),' and 'sex-related offenses'. In addition, official arrest records from the California Department of Justice were reviewed.

Among men, childhood conduct problems were significantly related to an increased rate of arrest for adult crimes against people (OR = 5.33, $p = .008$), although the effects for inattention (OR = 1.7, $p = .06$) and the interaction of conduct problems and hyperactivity-impulsivity (OR = .81, $p = .06$) approached statistical significance. Having conduct problems also was a significant predictor of an increased rate of self-reported adult crime against people (OR = 2.91, $p = .02$). The base rate of arrests among adult women was too low to warrant statistical analyses.

2. Eitle, D. & Turner, R.J. (2002). Exposure to community violence and young adult crime: The effects of witnessing violence, traumatic victimization, and other stressful events. *Journal of Research in Crime & Delinquency*, 39, 214-237.

→ Community Aggression

*Article Summary also appears under H8

This study examined the association between witnessing community violence and criminal behavior. The authors also investigated the association of young adult crime with other stressful events such as receiving traumatic news, witnessing domestic violence, experiencing accidents, and being the direct victim of domestic and community-based violence. In summary, the present findings suggested that recent (proximal) exposure to violence in the community coupled with a history of receiving traumatic news, direct victimizations in the community, recent life events, and associations with criminal peers increased the risk for young adult offending. Although the criterion variable is not (physical) violence, and the base rate of criminality was relatively low, the focus of the article appeared to be a good fit with the spirit of items H8 and R5.

All of the following data were collected during the 1998 to 2000 interviews with one exception: The measure of adolescent deviance was collected during 1993. Two dimensions of witnessed violence were considered: witnessing community violence and witnessing domestic violence. Four items dealing with experiences of seeing people attacked by others were used to assess witnessing community violence. Two different counts of such experiences were employed to assess the significance for criminal behavior of the timing of witnessed community violence: (a) violent events in the community witnessed in the past year (proximal community violence) and (b) violent community events witnessed prior to the past year (distal community violence).

Only one item was used to assess witnessing domestic violence, which queried whether the respondent witnessed his or her mother or another close female relative being regularly physically or emotionally abused. The two different time points (proximal and distal) were applied here as well.

Traumatic news was assessed by five items asking about being informed of violent events that he or she did not witness (i.e., hearing about a friend being raped). The proximal and distal time points were applied here as well. Three domains of experiencing trauma were assessed: accidents, abuse victimizations, and other violent victimizations. Accidents were measured by three items: lost home due to natural disaster; suffered a serious accident, illness or injury; and witnessed a serious accident where someone was badly hurt or killed.

Domestic victimization was measured by six questions asking the respondent about suffering sexual, physical or emotional abuse by intimates. Other violent victimization was measured by four items dealing with being victimized in the community: being physically assaulted or mugged, being chased but not caught, being shot at with a gun or threatened with a weapon (but not injured), and being shot at with a gun or badly injured with another weapon.

Other measures of stress (i.e., divorce, failing a grade) were assessed using a 29-item inventory that considered events occurring to significant others as well as to respondents. Association with

deviant peer was measured by a six-item scale regarding the respondent's perception of his or her friend's involvement in deviance. Adolescent deviance, the only measure from the 1993 data collection, measured the extent of deviance involvement by the respondent as an adolescent. Demographic characteristics (race, ethnicity, gender, social class, and marital status) were used as control variables.

Finally, criminal behavior was assessed by eight self-report items regarding behaviors committed in the past month. The respondent was asked about (% reporting such behavior in parentheses): using force to get money or expensive things from another person (1.1%), breaking and entering (1.4%), damaging or destroying property that did not belong to him or her (4.1%), taking a car for a ride without the owner's permission (1.9%), taking something worth more than \$50 when he or she was not supposed to (3.1%), carrying a handgun when he or she went out (6.8%) taking more than \$20 from family or friends without permission (2.4%), and taking part in gang fights (1.5%). Most respondents reported involvement in either one or none of the behaviors in the past month so responses were collapsed into two categories: a score of 1 indicated significant involvement in crime (0 was no involvement).

The following adversities were associated with a significant increased risk for being involved in criminal behavior ($p < .05$; all odds ratios were adjusted for race, ethnicity, gender, SES, and marital status): history of serious illness, injury or accident (OR = 1.84); witness of serious accident/disaster with serious injury (OR = 2.28); ever physically abused/injured by intimate partner (OR = 2.57); ever physically abused/injured by someone else (OR = 1.99); ever shot at with gun or threatened with weapon but not injured (OR = 3.96); every shot with gun or injured with another weapon (OR = 4.71); ever chased but not caught and thought you could get very hurt (OR = 3.45); ever physically assaulted or mugged (OR = 1.91); ever witnessed mother or close female relative regularly physically/emotionally abused (OR = 1.92); ever seen someone chased but not caught or threatened with serious harm (OR = 3.46); ever seen someone else shot at or attacked with another weapon (OR = 3.73); ever seen someone seriously injured by gunshot or some other weapon (OR = 3.24); ever seen someone killed by being shot, stabbed or beaten (OR = 3.79); ever been told that someone you knew had been shot, but not killed (OR = 2.98); ever been told someone you knew had been killed with a gun or another weapon (OR = 2.06); anyone you knew who died suddenly or been seriously hurt (OR = 1.40); ever been told that someone you knew killed him/herself (OR = 1.77); and ever been told that someone you know had been raped (OR = 2.72). For each of the nondomestic violence, men were much more likely than women to report such experiences and this category was substantially greater for African Americans than any other race. Of note, following domestic violence, all of the community violence adversities were the next strongest predictors of the dependent variable.

Hierarchical regression analyses for predicting criminal behavior from demographic characteristics and both proximal and distal exposure to stressful events were conducted separately. *Only those analyses including the proximal exposure variables are relevant to R5 and are discussed here.* Hierarchical regression analyses for predicting criminal behavior from demographic characteristics and recent (proximal) exposure to adversities found that both witnessing community violence (.57, $p < .001$) and receiving traumatic news (.41, $p < .001$) (and both in combination; .49, $p < .001$ and .22, $p < .01$ respectively) significantly predicted criminal behavior, but that witnessing domestic violence did not. When witnessing violence and receiving

traumatic violence were held constant, the coefficient for African American respondents reduced substantially, suggesting that elevated exposure to witnessed violence and hearing traumatic news act as mediators between race and young adult crime.

For the next set of regressions, when community-based violent victimization was entered in combination with accidents and other violence victimization, community-based victimization was the only variable that significantly contributed to the model (.44, $p < .001$). Both recent life events (.20, $p < .01$) and early adolescent deviance (1.65, $p < .001$) made significant independent contributions to the prediction of criminal behavior without having identifiable impacts on other predictors. The magnitude of the coefficient for witnessing community violence was reduced when the extent of association with criminal peers was added to the model (.33 to .23), however, it remained significant ($p < .01$) along with gender (.93, $p < .01$), recent life events (.17, $p < .001$), and other violent victimizations (.33, $p < .001$).

3. Glasser, M., Kolvin, I., Campbell, D., Glasser, A., Leitch, I., & Farrelly, S. (2001). Cycle of child sexual abuse: Links between being a victim and becoming a perpetrator. *British Journal of Psychiatry*, 179, 482-494.

→ Community Sexual Violence

Participants in this retrospective study comprised a random selection of 843 adults (747 men and 96 women; mean age = 31.2 years) who had attended the National Health Service Trust out-patient facility (a tertiary service for 'sexual deviants' and offenders) from 1985 to 1990. Data were collected from comprehensive case records. Information was coded about demographic characteristics, sexual activities, sexual dysfunction and deviations, offending, experiences of child sexual abuse and/or violence, early life experiences, psychodynamics, and psychopathology. The authors defined incest as any sexual act carried out within the patient's family, including any substitute parents, uncles, aunts, grandparents, or first cousins. Paedophilia was defined as a contact sexual act that was carried out with any child outside the patients' family by an adult who had a sexual interest in children. Sexual abuse was defined as having occurred when a sexually mature individual involved dependent developmentally immature children and adolescents in contact sexual activity (breast, oral, anal, or vaginal). Diagnostic decisions about whether abusers should be classified as paedophiles or incest perpetrators were based on clinical assessment disclosures, information contained in social service, in probation and general practitioner reports, and (often) in psychological assessments. Because participants had not been interviewed in a standardized way, an operational definition for coding was established: code all detailed information or labels as either 'present' or 'absent.'

Of the 843 participants, 227 (27%) were child abusers. The abuser group consisted of 225 men and 2 women. There were 99 incest perpetrators (all men) and 161 paedophiles (159 men, 2 women). The abusers can be subdivided into incest-only perpetrators (66 men), paedophilia-only perpetrators (126 men, 2 women) and those who perpetrated both incest and paedophilia (33 men).

Examining victims, 176 participants were victims of sexual abuse (135 men, 41 women). The male victims were subdivided into incest-only victims ($n = 47$), paedophilia-only ($n = 76$) and 12 who experienced both incest and paedophilia. The female victims were divided into 29 incest-only victims, 5 paedophilia-only victims, and 7 victims of both incest and paedophilia.

Of the 135 male victims, 79 were perpetrators ($\chi^2 = 86.4, p < .001$; OR = 27.36). Of the 111 male subjects abused by males, 60 became perpetrators ($\chi^2 = 5.1, p < .05$; OR = 3.2, 95% CI = 1.13 - 9.29). Of the 24 males abused by females, 19 went on to become perpetrators of sexual abuse. **Examining the male victim to victimizer cycle, men who were victimized during childhood were more likely to become an adult perpetrator than those who were not victimized during childhood ($\chi^2 = 63.1, p < .001$; OR = 4.5, 95% CI = 3.05 - 6.65).**

In addition, those who were not perpetrators had significantly less early life adversity. **Logistic regression analyses demonstrated that being a victim either of incest or of paedophilia significantly predicted becoming an incest perpetrator (incest victim: OR = 3.01, Wald = 12.21, $p < .05$; paedophilia victim: OR = 3.41, Wald = 21.09, $p < .0001$). Similar results were found for predicting likelihood of becoming a paedophilia perpetrator (details of results not provided). Prediction was enhanced if the dependent variable was the perpetration of either incest and/or paedophilia (predictor 'victim of paedophilia:' OR = 4.63, Wald = 40.75, $p < .0001$; predictor 'victim of incest:' OR = 3.1, Wald = 15.55, $p < .0001$).**

4. Krakowski, M.I., & Czobor, P. (2004). Psychosocial risk factors associated with suicide attempts and violence among psychiatric inpatients. *Psychiatric Services*, 55, 1414-1419.

→ Institutional Violence

This study examined the association between psychosocial problems and both suicidal behavior and violence directed toward others among patients with major psychiatric disorders. Participants were recruited from two psychiatric state hospitals. They were admitted between January 1991 and December 1994, were between the ages of 18 and 55, and had a major psychiatric disorder. The final sample that provided all required information comprised 216 violent patients and 81 non-violent patients.

Patients were considered to be violent if they had at least one physical assault directed at another person in which actual physical contact was made (e.g., striking, kicking, slapping, or scratching). Patients were eligible to be included in the study if they had had a physical assault incident within the first two months of admission. Patients with mental retardation or neurologic illness were excluded. The SCID for DSM-II-R was used to diagnose patients, which occurred in the course of another ongoing study. A total of 265 patients met the study criteria over the four-year period. All these patients were approached following the first episode of physical assault for consent to participate in the study, which was then restricted to patients with diagnoses of schizophrenia, schizoaffective disorder, or bipolar disorder. An attempt was made to match every violent patient with a non-violent patient, but this was not possible as the ratio of violent to non-violent was 2.6.

Physical assaults were assessed prospectively for four weeks by two research nurses through daily review of nursing reports and of patients' charts, and by interviews with ward staff who were present at the time of the incidents. Intraclass correlation coefficients for interrater reliability for violence were above .90. Demographic, medical, and psychosocial information were obtained through chart reviews and patient interviews.

Information about family functioning and childhood circumstances was collected through both patient interview and chart review. Factors assessed included: history of school truancy, foster home placement, severe discipline in childhood that resulted in physical injury (harsh discipline), and parental psychopathology. A participant was classified as having a history of a given problem if a positive response to the question was obtained or if the chart indicated such a problem.

Results showed that a history of school truancy and foster home placement were higher among patients in the violent group than among those in the nonviolent group (school truancy: OR = 2.43, 95% CI = 1.4 - 4.3; $\chi^2 = 9, p < .003$; foster home: OR = 3.45, 95% CI = 1.4 - 1.85; $\chi^2 = 7.17, p < .007$). The two groups did not differ significantly in parental psychopathology, head trauma, and harsh discipline once the results were adjusted for multiple testing.

5. Sauvola, A., Koskinen, O., Jokelainen, J., Hakko, H., Jarvelin, M., & Rasanen, P. (2002). Family type and criminal behavior of male offspring: The northern Finland 1966 birth cohort study. *International Journal of Social Psychiatry, 154*, 1265-1271.

→ Community Violence

This study explored whether childhood family structure is associated with violent behavior of adult offspring. The sample comprised all male cohort members ($N = 5589$) of the Northern Finland 1966 Birth Cohort. Variables relating to biological, sociological, and environmental health factors were collected prospectively for the members from prior to birth until 32 years of age. The cohort members' family background was assessed at the beginning of the study and in 1980, when the members were 14 years old. The Ministry of Justice files were used to collect criminal data up to the end of 1998. This register includes all criminal acts known to police after members' 15th birthday. During the follow up time 607 male subjects had committed at least one crime. The category of violent crimes included: homicide, attempted homicide, assault, robbery, arson, sexual crime, and violation of domestic peace. Previous knowledge of risk factors for criminal behavior was used to select confounders, which included: psychiatric hospital diagnosis (DSM-III-R), maternal smoking during pregnancy, perinatal complications, mother's age, maternal mood during pregnancy, place of residence, and parental social class.

Of the total sample, 212 were classified as violent criminals. Boys born and raised in a single-parent family had a 5-fold probability of committing a violent crime when compared to boys with a two-parent family background after controlling for the confounding variables named above (OR = 5.1, 95% CI = 2.4 - 10.6, $p < .001$). The risk of violent offending in adulthood was doubled by parental death during childhood (OR = 2.0, 95% CI

= 1.2 - 3.4, $p < .012$) and by parental divorce during childhood (OR = 2.4, 95% CI = 1.6 - 3.8, $p < .001$).

* Koskinen, Sauvola, Valonen, Hakko, Jarvelin & Rasanen (2001), using the same dataset as Sauvola et al. (2002), **reported the risk of repeat violent offending to be nearly eight-fold if the male child was born to a single mother who remained unmarried up to the child's 14th birthday. The corresponding probability was five-fold if the male child was born to a single mother who married later during the offspring's childhood and two-fold if the parents separated.** These authors reported that parental death was not significantly related with violent recidivism. The reference is: Koskinen, O., Sauvola, A., Valonen, P., Hakko, H., Marjo-Riitta, J., & Räsänen, P. (2001). Increased risk of violent recidivism among adult males is related to single-parent family during childhood: The northern Finland 1966 birth cohort study. *Journal of Forensic Psychiatry*, 12, 539-548.

6. Scarpa, A. (2001). Community violence exposure in a young adult sample: Lifetime prevalence and socioemotional effects. *Journal of Interpersonal Violence*, 26, 36-53.

→ Community Violence

The authors examined the prevalence and socioemotional consequences of being a victim of or witness to community violence exposure. Participants ($N = 476$; 64% female) were recruited from an Introductory Psychology college course and received course credit. The mean age of the sample was 20.26 years (range = 17 to 46 years). Most participants were White (66%). Based on screening for lifetime exposure to community violence, participants were classified as high or low scores as a victim (high $n = 22$, low $n = 25$) or witness (high $n = 13$, low $n = 11$). These 54 students returned for further testing on emotional and behavioral functioning.

The Survey of Exposure to Community Violence-Self Report Version (SECV) was used to screen for exposure to community violence. The SECV is a 25-item checklist in which the respondent reports the frequency of having directly experienced or witnessed a range of violence-related events (e.g., being chased by gangs or individuals, being robbed, being exposed to a weapon, being sexually assaulted). A victimization score was calculated by summing nine items on the SECV that referred to "you yourself" (coefficient alpha = .65). A witness score was calculated by summing 16 items referring to "seen someone else" (coefficient alpha = .81). Respondents who scored in the top (score > 11) or bottom (score = 0) 18% of the distribution of victimization scores were placed in the high- and low-victim groups, respectively. These scores indicated that the high-victim group reported at least 11 direct experiences with violence and that the high-witness group reported at least 35 indirect experiences with violence.

Aggressive behavior was measured with the 29-item Aggression Questionnaire (AQ). The AQ has nine items that assess physical aggression.

Men obtained higher total scores than females for witnessing violence, $t(452) = 7.01$, $p < .0001$; $M = 21.79$ versus 13.38, and for being victimized, $t(446) = 6.46$, $p < .0001$; $M = 8.31$ versus

4.65. Overall, 95.6% of respondents reporting witnessing violence and 82% reported being victimized by some form of violence at least once in their lifetime. Further, 90.2% reported witnessing violence and 63.6% reported being victimized at least three times in their lifetime.

Of relevance to HCR-20 item H8, to test the hypothesis that violence victims and witnesses would exhibit greater difficulties in behavioral functioning, one-tailed *t*-tests were conducted that compared groups (low and high victim; low and high witness) on socioemotional measures. The high-victim group reported significantly greater levels of aggression ($M = 20.70$, $SD = 7.7$) compared to the low-victim group ($M = 14.78$, $SD = 6.1$; $t = 2.96$, $p = .003$). Similarly, the high-witness group reported significantly greater levels of aggression ($M = 22.36$, $SD = 8.4$) compared to the low-witness group ($M = 14.83$, $SD = 6.9$; $t = 2.36$, $p = .014$)

7. Swanson, J.W., Swartz, M.S., Essock, S.M., Osher, F.C., Wagner, H. R., Goodman, L.A., Rosenberg, S. D., & Meador, K. G. (2002). The social-environmental context of violent behavior in persons treated for severe mental illness. *American Journal of Public Health*, 92, 1523-1531.

→ Community Violence

*Article summary also appears under Items H5 and C1

This study investigated to what degree different variables – victimization, exposure to trauma, substance abuse, homelessness, adverse social environments and treatment noncompliance - contribute, either independently or in convergence, to violent actions by persons with mental illness. Participants were part of a larger study investigating sexually transmitted diseases and risk behavior in people with severe mental disorders. The sample comprised adults with psychotic or major mood disorders who were receiving inpatient or outpatient services in public mental health systems in 4 U.S. states. The total sample of 802 participants provided complete data on violent behavior, victimization, and the demographic and clinical variables of interest. The majority of participants was men (65.1%) and White (46.8%; 44.8% African American; 3.3% Hispanic; 5.3% ‘other’). Participants’ mean age was 41.9 years ($SD = 9.9$ years). The proportions of major psychiatric diagnoses in the sample were: schizophrenia (44.8%), schizoaffective disorder (19.5%), bipolar disorder (16.9%), major depression (11.3%), and other serious disorders (7.0%). In addition, 45.4% had comorbid substance use disorders.

Violence was recorded for the previous year and was defined as any physical fighting or assaultive actions causing bodily injury to another person, any use of a lethal weapon to harm or to threaten someone, or any sexual assault. Information regarding violent behavior was obtained using an instrument developed in a Duke University study of the effectiveness of involuntary outpatient commitment. These items yielded an index of violence comparable to that used in the MacArthur Violence Risk Assessment Study. Victimization was assessed by asking detailed questions about any experience of physical or sexual abuse occurring before and after age 16. Demographic information was obtained from the participants, including information about homelessness in the past year. The Exposure to Community Violence Scale was used to assess the degree of exposure to violence in their surrounding social environment. Information on clinical and institutional variables and the way in which they were assessed were as follows: psychiatric diagnoses (chart review and clinical data); observed psychiatric symptomatology

(Brief Psychiatric Rating Scale); self-rated mental health status (single item 4-point scale); substance abuse (Dartmouth Assessment of Lifestyle Instrument); functional impairment (Global Assessment Scale); and medication noncompliance (participant queried regarding any prescribed psychiatric medication and frequency with which s/he was taking these medications, if at all).

Overall, the 1-year prevalence (weighted) of violence in the entire sample was 13.6%. Homelessness, experiencing or witnessing violence, substance abuse, mood disorder, PTSD, lower severity ratings on the BPRS, poor subjective mental health status, early age of psychiatric illness onset, and psychiatric hospital admission were all associated with violence in the previous year in univariate analyses.

Of relevance to HCR-20 item H8, univariate analyses indicated that physical abuse prior to age 16 significantly increased the risk of violence (OR = 4.37, 95% CI = 2.57 – 7.42, $p < .0001$), but victimization after the age of 16 was even more strongly associated with violent behavior (OR = 7.99, 95% CI = 2.87 – 22.24, $p < .0001$). Results of a multivariate model that examined the effect of victimization on violence indicated that participants who were victimized as children, but not revictimized as adults, were not significantly more likely to behave violently in comparison with individuals who were never victimized (OR = 1.55, 95% CI = .40 – 5.94, *n.s.*). Those who were victimized as adults were significantly more likely to engage in violent behavior even if they were not victimized as children (OR = 3.63, 95% CI = 1.23 – 10.70, $p < .05$). However, those who were victimized both as children and later as adults were by far the most likely to behave violently toward others (OR = 12.87, 95% CI = 6.19 – 26.75, $p < .001$).

Results of a multivariate logistic regression model that examined the effects of clinical and institutional variables are of relevance to HCR-20 item H5, as substance abuse significantly increased the risk of violence and had the largest odds ratio of all variables in the model (OR = 4.32, 95% CI = 2.66 – 7.02, $p < .001$).

That model's results also provide support for HCR-20 item C1: self-rated mental health status of "poor" significantly increased the risk of violence (OR = 2.29, 95% CI = 1.33 – 3.94, $p < .001$).

8. Widom, C.S. & White, H.R. (1997). Problem behaviors in abused and neglected children grown up: Prevalence and co-occurrence substance abuse, crime and violence. *Criminal Behavior & Mental Health*, 7, 287-310.

→ Community Violence

The data presented in this study are part of a research project based on a cohort design study in which abused and neglected children were matched with non-abused and non-neglected children and followed prospectively into young adulthood. The focus of the present study was on the prevalence and patterns of overlap among four problem behaviors (alcohol abuse, drug abuse, non-violent crime and violence) in the adults who were abused and/or neglected during childhood. In the first phase of this research, a large group of children who were abused and/or neglected approximately 20 years ago were followed up through an examination of official

juvenile and criminal records and compared with a matched control group of children. Only court-substantiated cases of abuse were included in this study. Cases were drawn from the records of county juvenile and adult criminal courts in a metropolitan area in the Midwestern part of the U.S. between 1967 and 1971. Abuse and neglect cases were restricted to those in which children were less than 11 years of age at the time the abuse or neglect incident occurred to avoid potential direction of causality problems.

Physical abuse cases included injuries such as bruises, welts, burns, abrasions, lacerations, wounds, cuts, bone and skull fractures and other evidence of physical injury. Sexual abuse charges varied from vague charges of assault and battery with 'intent to gratify sexual desires' to 'fondling or touching in an obscene manner,' 'sodomy,' etc. Neglect cases are those where a judgment was made that the parents' deficiencies in child care were beyond those found acceptable by community and professional standards at the time.

Hospital and elementary school records were used to establish a control group with children who were matched on age, sex, race, and approximate social class during the study's time period.

The second phase of the research consisted of tracing, locating, and interviewing the abused/neglected individuals and controls (approximately 20 years later). Data were collected through a two-hour interview. In total, 1196 participants were located and interviewed (76% of original sample). Analyses were conducted using 1190 individuals (672 abused/neglected and 518 controls). Approximately half the sample's participants were women (48.7%) and most were White (62.9%). The mean age of the sample at the time of the interview was 28.7 years ($SD = 3.84$ years). Data for the criterion variable – arrest – were based on information obtained from complete criminal histories for participants collected at three levels of law enforcement (local, state, and federal) at two points in time (1986-87 and 1994). Violent crimes included arrest for assault, battery, robbery, manslaughter, murder, rape, and burglary with injury. Abuse/neglect was a dichotomous variable based on official records. Other independent and control variables in this study included welfare status and parental drug/alcohol problems.

Of relevance to HCR-20 item H8, children (boys and girls combined) who were abused or neglected were at increased risk (adjusted for family and background characteristics) for being arrested for violent crimes compared to controls (OR = 1.37, $p \leq .05$). When this risk was examined for abused or neglected girls only, a significant increase in risk for an arrest for a violent crime was observed as well (OR = 2.58, $p \leq .05$). However, when only boys were considered, there was no statistically significant increase in risk for violent crime.

Additional Relevant Sources Supportive of H8 – Abstracts Provided

1. af Klinteberg, B. (1997). Hyperactive behavior and aggressiveness as early risk indicators for violence: Variable and person approaches. *Studies on Crime & Crime Prevention*, 6, 21-34.

Results from studies (e.g., the Individual Development and Adjustment project [1988, 1996], the Young Lawbreakers project [1992], studies of normal young adolescents [1987], and studies of air force pilot recruits [1991]) were used to examine early risk indicators of violence. Findings were that school age behavior problems have implications for adult personality; hyperactive behavior in childhood was found to be highly related to adult impulsivity, to a broad psychopathy-factor, and to high scores on a psychopathy check list scale. Furthermore, a possible co-occurrence of problem behaviors was examined, assumed to be mediated by an underlying "vulnerability" in terms of impulsivity and related biochemical correlates. Childhood hyperactive behavior was found to be closely linked to early onset alcohol problems and violent offending in the same individuals over time. Finally, aspects of childhood behavior were explored in relation to MAO activity at adult age, which is considered a biological indicator of vulnerability for disinhibition and psychosocial deviances. Hyperactive behavior was found to be negatively related to platelet MAO activity. The importance of prospective longitudinal data was emphasized in studies on early risk indicators and violent behavior.

2. Arseneault, L., Cannon, M., Murray, R., Poulton, R., Caspi, A., & Moffitt, T. E. (2003). Childhood origins of violent behavior in adults with schizophreniform disorder. *British Journal of Psychiatry*, 183, 520-525.

Background: People with psychosis have an elevated risk of violence. Aims: To examine whether violent behavior in adults with psychosis can be accounted for by psychotic symptoms or physical aggression in childhood. Method: We used data from a prospective longitudinal study of a complete birth cohort born in New Zealand. When cohort members were 26 years old, information was obtained on past-year psychiatric diagnosis of schizophreniform disorder and on violent behavior. Childhood psychotic symptoms were measured at age 11 years using a diagnostic interview, and childhood physical aggression was assessed by teachers when cohort members were aged 7, 9 and 11 years. Results: Participants with schizophreniform disorder were more likely to be violent than participants without, even after controlling for sociodemographic variables and concurrent substance dependence disorders. Childhood psychotic symptoms were a strong risk factor for violence in adults with schizophreniform disorder, as was childhood physical aggression, although to a lesser extent. Conclusions: Violence by individuals with schizophreniform disorder could be prevented by monitoring early signs of psychotic symptoms and by controlling childhood physical aggression.

3. Brennan, P. A., Grekin, E. R., & Mednick, S. A. (1999). Maternal smoking during pregnancy and adult male criminal outcomes. *Archives of General Psychiatry*, 56, 215-219.

Using a perinatal birth cohort of 4,129 males, this study examined the relationship between self-reported maternal smoking during the 3rd trimester and offspring criminal behavior in adults up to age 34 yrs. It was hypothesized that (1) a significant relationship existed between maternal prenatal smoking and offspring criminal behavior, (2) this relationship would be true for violent

behavior and persistent criminal behavior rather than for adolescent-limited crime, and (3) the above relationships would remain significant despite controlling for SES, maternal rejection, maternal age, pregnancy and delivery complications, use of drugs during pregnancy, paternal criminal history, and parental psychiatric hospitalization. Results support the hypothesis that maternal smoking during pregnancy is related to increased rates of crime in adult offspring. The study extended previous findings by showing that maternal smoking is related to persistent offending rather than to adolescent-limited offending. Strong support was not found for a potential interaction of maternal prenatal smoking and other risk factors in the prediction of adult criminal offending.

4. Christoffersen, M. N., Francis, B., & Soothill, K. (2003). An upbringing to violence? Identifying the likelihood of violent crime among the 1966 birth cohort in Denmark. *Journal of Forensic Psychiatry & Psychology, 14*, 367-381.

Why do some boys develop into troublesome youths who eventually get sentenced for violent crimes? In planning a strategy to fight violent crime, it is important to identify significant risk factors for violent criminal behavior among adolescents and young men. In this study information from population-based registers covers various aspects both for children, aged between 15 and 27 years, and their parents: health (mental and physical), education, social networks, family violence, self-destructive behavior, parental alcohol or drug abuse, and unemployment. First-time convicted offenders have an increased risk of coming from seriously disadvantaged families; they also seem to be characterized by unstable education and employment records (e.g. not graduating, no vocational training), occasional work, or long-term unemployment.

5. Cloitre, M., Tardiff, K., Marzuk, P. M., Leon, A. C., & Portera, L. (2001). Consequences of childhood abuse among male psychiatric inpatients: Dual roles as victims and perpetrators. *Journal of Traumatic Stress, 14*, 47-61.

Assessed the relationship between retrospective self-reports of childhood abuse and subsequent interpersonal violence among 354 consecutive male inpatients (aged 18-59 yrs) admitted to a psychiatric hospital. Data were obtained through clinical interviews. Three logistic regressions reveal that the association between childhood abuse and 3 mutually exclusive adult negative outcomes were as follows: (1) being a perpetrator of violence, (2) being a victim of violence, and (3) being a perpetrator and victim. The results suggest that, among men with significant psychiatric impairments and childhood abuse, rates of adult victimization are high, and the most frequent negative outcome reflects involvement in dual roles of perpetrator and victim. The possible dynamics of this relationship are discussed.

6. Crocker, A. G., & Hodgins, S. (1997). The criminality of noninstitutionalized mentally retarded persons: Evidence from a birth cohort followed to age 30. *Criminal Justice & Behavior, 24*, 432-454.

Examined the criminality of noninstitutionalized mentally retarded (NIMR) men and women in a Swedish birth cohort composed of 15,117 participants followed from before birth to age 30. NIMR Ss were compared with Ss who had never been placed in a special class or in an

institution for the mentally retarded or admitted to a psychiatric ward (NMR). NIMR Ss were more likely than NMR Ss to have been convicted for a criminal offense before age 30 and for a violent offense. NIMR offenders had been convicted, on average, for the same number of offenses as NMR offenders. Among the NIMR offenders, 71% of men and 43% of women were 1st convicted before the age of 18. For both NIMR men and women, childhood conduct problems were found to be associated with adult criminality.

7. Feerick, M. M., Haugaard, J. J., & Hien, D. A. (2002). Child maltreatment and adulthood violence: The contribution of attachment and drug abuse. *Child Maltreatment: Journal of the American Professional Society on the Abuse of Children*, 7, 226-240.

This study examined the association between child maltreatment and adult violence in a high-risk sample of 115 women (aged 18-56 yrs) with and without a history of cocaine abuse and the contribution of working models of childhood attachment relationships in understanding this association. The women were recruited from one of several inpatient and outpatient treatment programs. Interviews consisting of a variety of structured and semistructured measures were conducted. Results indicated that whereas childhood physical abuse was associated with adult sexual victimization for cocaine-abusing women, sexual abuse was associated with both partner violence victimization and perpetration for comparison women. Insecure working models of attachment were associated with partner violence victimization for comparison women, independent of the effect of sexual abuse. These findings suggest the importance of research focused on understanding the processes by which child maltreatment may lead to later violence and that examines both childhood and adulthood experiences in understanding pathways to adult violence.

8. Fehon, D. C., Grilo, C. M., & Lipschitz, D. S. (2005). A comparison of adolescent inpatients with and without a history of violence perpetration: Impulsivity, PTSD, and violence risk. *Journal of Nervous and Mental Disease*, 193, 405-411.

How childhood maltreatment and violence victimization contributes to subsequent violent behavior remains an understudied area. We examined 130 psychiatrically hospitalized adolescents and compared those with a history of perpetrating violence to those without a history of violence perpetration. Perpetrators of physical violence were significantly more likely to have been a victim and/or witness to family and community violence and also reported significantly higher levels of a broad range of psychopathology than nonperpetrators. Correlational analyses with the study group of violence perpetrators revealed that higher levels of impulsivity, dissociation, and PTSD were significantly associated with higher levels of violence. Furthermore, multiple regression analysis showed that symptoms of impulsivity and PTSD contributed significantly to the prediction of violence risk. Our findings demonstrate that violence exposure and childhood maltreatment are indeed common negative life events among adolescent inpatients, and that symptoms of PTSD may predispose traumatized youth toward impulsive violent behavior.

9. Fulwiler, C., & Ruthazer, R. (1999). Premorbid risk factors for violence in adult mental illness. *Comprehensive Psychiatry*, 40, 96-100.

In the present study, we retrospectively assessed patients with chronic mental illness for a history of childhood conduct disorder. Consecutive referrals to a community treatment team were evaluated with a standardized protocol that included questions about violent behavior. Patients (mean age 42.4 yrs) who met Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV) criteria for a primary diagnosis of major axis I disorder ($N = 64$) were assessed for behavior prior to age 15 with a checklist for DSM-IV criteria of conduct disorder using self-report data, supplemented by collateral information from charts and relatives when possible. About half of the sample had a history of committing violent acts in the community, and 26% met criteria for childhood conduct disorder. The odds of violence in adulthood was 10-fold higher for subjects with a history of childhood conduct disorder. Not surprisingly, there was considerable overlap between conduct disorder and early-onset substance abuse. About half of the patients with a history of substance abuse prior to age 15 also had a history of conduct disorder. However, these two premorbid conditions appear to be at least partially independent in predicting adult violence in this population.

10. Hodgins, S., Kratzer, L., & McNeil, T. F. (2001). Obstetric complications, parenting, and risk of criminal behavior. *Archives of General Psychiatry*, 58, 746-752.

Examined the associations between prenatal and perinatal complications and criminality. The cohort used included the 15,117 persons born in 1953 and followed up to age 30 years. Information was extracted from obstetric files, health, social, work, and criminal records. Obstetric complications were defined as deviations from normal development occurring at any point from conception through the neonatal period. Inadequate parenting was indexed by social intervention. Inadequate parenting was experienced by 19.1% of the men and 18.1 % of the women, and was shown to increase the risk of offending and of violent offending. Obstetric complications in the absence of family problems did not increase the risk of offending. A combination of pregnancy complications and inadequate parenting affected 3.1% of the men and 4.0% of the women, and increased the risk of offending and violent offending. A combination of pregnancy complications and inadequate parenting increased the risk of violent and nonviolent offending only slightly more than inadequate parenting alone. However, inadequate parenting was experienced by 5 times more cohort members than was the combination of inadequate parenting and pregnancy complications.

11. Johansson, P., Kerr, M., & Andershed, H. (2005). Linking adult psychopathy with childhood hyperactivity-impulsivity-attention problems and conduct problems through retrospective self-reports. *Journal of Personality Disorders*, 19, 94-101.

The purpose of the present study was to test whether adult criminals with psychopathy diagnoses, more than those without, have histories of hyperactivity-impulsivity-attention problems (HIA) and conduct problems (CP). We compared psychopathic and nonpsychopathic violent criminal offenders on retrospective reports of conduct problems before the age of 15 and hyperactivity-impulsivity-attention problems before the age of 10. We used a sample of 186 adult men sentenced to prison in Sweden for 4 years or more for violent, nonsexual crimes. The

mean age was 30.7 ($SD = 9.4$). The results showed that a combination of childhood HIA problems and CP was typical for adult psychopathic offenders. They were four times more likely than chance to have had a combination of HIA problems and CP during childhood and only one-fifth as likely than chance to have had neither problem. Nonpsychopathic offenders, on the other hand, were five times more likely than chance to have had neither problem and only one-quarter as likely than chance to have had both problems.

12. Kjelsberg, E. (2002). DSM-IV conduct disorder symptoms in adolescents as markers of registered criminality. *European Child & Adolescent Psychiatry, 11*, 2-9.

A nationwide sample of 1,079 Norwegian adolescent psychiatric inpatients, 581 males and 498 females, were followed up after 11-33 (mean 23.2) yrs. Ss were aged 11-18 yrs at the time of admission. On the basis of detailed records from index hospitalisation they were re-diagnosed and retrospectively scored on 14 of the 15 behavior items listed as diagnostic criteria for conduct disorder in DSM-IV. The patient list was linked to the national criminal registry, and 48% were found to have a criminal record. In males, "stealing" was the strongest marker for overall and violent crime. "Having forced someone into sexual activity" was a strong marker for later sex offenses. In females, "running away from home" was strongly associated with overall and violent registered criminality. ROC curves were constructed to test the sensitivity and specificity of the sum of conduct disorder behavior items fulfilled in the identification of individuals with registered criminality. The area under the curve was 0.81 in males and 0.75 in females. A cut-off at 3 criteria fulfilled seemed optimal in males and somewhat high in females.

13. Krakowski, M., & Czobor, P. (2004). Gender differences in violent behaviors: Relationship to clinical symptoms and psychosocial factors. *American Journal of Psychiatry, 161*, 459-465.

Objective: Men are more violent than women in the general population, but this has not been found to be the case among psychiatric inpatients. The reason for this exception is poorly understood. The present study investigated gender differences in violent behaviors among patients with major psychiatric disorders. It examined various clinical symptoms and psychosocial factors to determine their differential impact on violence in men and women. Method: Physical assaults and verbal assaults committed by psychiatric inpatients were recorded prospectively. Patients whose violent incident occurred during their first 2 months of hospitalization were eligible for the study. Patient history of community violence was also obtained. Psychiatric symptoms and ward behaviors were assessed upon entry into the study and after 4 weeks. Results: A similar percentage of women and men had an incident of physical assault in the hospital. Among the patients entered into the study, the women had a much higher level of verbal assaults throughout the evaluation period and a higher level of early physical assaults (i.e., within the first 10 days of the 4-week study period). Positive psychotic symptoms were more likely to result in assaults in women than in men. Physical assaults in the community, on the other hand, were more common in men and were associated with substance abuse, property crime, and a history of school truancy. Conclusions: There are gender differences in the patterns of violent behavior among patients with major psychiatric disorders. Furthermore, psychiatric symptoms and psychosocial risk factors have a different impact on this behavior in men and women. This has important implications for the prediction and differential treatment of violent behavior.

14. Lahey, B. B., Loeber, R., Burke, J. D., & Applegate, B. (2005). Predicting future antisocial personality disorder in males from a clinical assessment in childhood. *Journal of Consulting and Clinical Psychology, 73*, 389-399.

It is essential to identify childhood predictors of adult antisocial personality disorder (APD) to target early prevention. It has variously been hypothesized that APD is predicted by childhood conduct disorder (CD), attention-deficit/hyperactivity disorder (ADHD), or both disorders. To test these competing hypotheses, the authors used data from a single childhood diagnostic assessment of 163 clinic-referred boys to predict future APD during early adulthood. Childhood Diagnostic and Statistical Manual of Mental Disorders (3rd ed., rev.; American Psychiatric Association, 1987) CD, but not ADHD, significantly predicted the boys' subsequent APD. An interaction between socioeconomic status (SES) and CD indicated that CD predicted APD only in lower SES families, however. Among children who met criteria for CD, their number of covert but not overt CD symptoms improved prediction of future APD, controlling for SES.

15. Mäki, P., Hakko, H., Joukamaa, M., Läärä, E., Isohanni, M., & Veijola, J. (2003). Parental separation at birth and criminal behavior in adulthood: A long-term follow-up of the Finnish Christmas seal home children. *Social Psychiatry & Psychiatric Epidemiology, 38*, 354-359.

Parental absence has been connected with later criminality. We studied the association between very early separation and criminality in a unique data set. The index cohort consisted of 2,906 subjects born between 1945 and 1965 in Finland who were temporarily isolated from their family immediately after birth and sent to adequate nursing homes due to tuberculosis in the family. The average separation time was 7 months. For every index subject, two reference subjects (matched for sex, year of birth and place of birth) were gathered. Data on criminal offenses were obtained from Statistics Finland arising from adolescence to middle age, between 1 January 1977 and 31 December 1998. The association between parental separation and subcategories of non-violent and violent criminality and violent recidivism, respectively, in male and female offspring was analysed. Subjects who had committed at least two violent crimes were defined as violent recidivists. Of the male index subjects, 12.1% as compared with 7.1% of the reference cohort (estimated relative risk RR 1.73; 95% CI = 1.42 - 2.11) had committed violent offenses. Of the male index subjects 5.2% and of the male reference subjects 3.6% were violent recidivists (RR 1.47; 95% CI = 1.10 - 1.98).

16. McMahon, J., & Clay-Warner, J. (2002). Child abuse and future criminality: The role of social service placement, family disorganization and gender. *Journal of Interpersonal Violence, 17*, 1002-1019.

This study examines the extent to which family disorganization moderates the effect of social service placement on juvenile and adult arrests. Using C. Widam's (1994) prospective data containing 749 substantiated cases (male and female; all subjects under age 18 yrs old) of child abuse and neglect, the authors test hypotheses relating to 2 measures of family disorganization: Family separation and family moves. They find that removing an abused or neglected child from the home increased the likelihood of adult arrest for children who experienced a recent family separation. Placement reduced likelihood of arrest for males who experienced frequent moves and increased risk of adult arrest for females who experienced frequent moves. The authors

conclude that gender differences in placement outcomes should be explored, and they discuss the implications of this research, for social service agencies.

17. Moffitt, T. E., Caspi, A., Harrington, H., & Milne, B. J. (2002). Males on the life-course-persistent and adolescence-limited antisocial pathways: Follow-up at age 26 years. *Development & Psychopathology, 14*, 179-207.

This article reports a comparison on outcomes of 26-year-old males who were defined several years ago in the Dunedin longitudinal study as exhibiting childhood-onset vs adolescent-onset antisocial behavior and who were indistinguishable on delinquent offending in adolescence. Here followed to age 26 years, the childhood-onset delinquents were the most elevated on psychopathic personality traits, mental-health problems, substance dependence, numbers of children, financial problems, work problems, and drug-related and violent crime, including violence against women and children. The adolescent-onset delinquents at 26 years were less extreme but elevated on impulsive personality traits, mental-health problems, substance dependence, financial problems, and property offenses. A third group of men who had been aggressive as children but not very delinquent as adolescents emerged as low-level chronic offenders who were anxious, depressed, socially isolated, and had financial and work problems. These findings support the theory of life-course-persistent and adolescence-limited antisocial behavior but also extend it. Findings recommend intervention with all aggressive children and with all delinquent adolescents, to prevent a variety of maladjustments in adult life.

18. Piquero, A., & Tibbetts, S. (1999). The impact of pre/perinatal disturbances and disadvantaged familial environment in predicting criminal offending. *Studies on Crime & Crime Prevention, 8*, 52-70.

Examined biosocial interactions between biological and social factors in predicting criminal offending. Research in the biosocial tradition has generally uncovered effects consistent with the interaction hypothesis, but the existing studies have not examined the biosocial interaction-criminal offending relationship with a high-risk, inner-city sample. This study tested the biosocial interaction hypothesis that pre/perinatal disturbances when combined with disadvantaged familial environment at age seven yrs increase the chances of criminal offending during early adulthood among a high-risk, inner-city sample of 7-22 yr olds. Logistic regression analyses indicate a significant interaction between pre/perinatal disturbances and disadvantaged familial environment for violent offending, but not for non-violent offending. The theoretical and policy implications are discussed.

19. Shaw, D. S. (2003). Advancing our understanding of intergenerational continuity in antisocial behavior. *Journal of Abnormal Child Psychology, 31*, 193-199.

Comments on the research of D. M. Capaldi et al, R. D. Conger et al, H. Hops et al, and T. R. Thornberry et al (see records 2003-02284-002, 2003-02284-003, 2003-02284-004, 2003-02284-005), on intergenerational continuity in antisocial behavior. This commentary reviews the major findings of this set of 4 papers on intergenerational continuity in antisocial behavior; it identifies strengths and remaining challenges, and discusses potential policy implications of the research. As a group, these researchers have raised the methodological bar for future work in this area,

using prospective designs with multiple informants and methods to test the influences of G2 parenting and adolescent antisocial behavior in mediating continuity between G1 parenting and G3 early disruptive behavior. The pattern of findings is discussed with respect to gender of G2 and social context. The inherent challenges of conducting intergenerational research are also highlighted, within the context of offering recommendations for improving future intergenerational investigations and their feasibility.

20. Soderstrom, H., Sjodin, A., Carlstedt, A., & Forsman, A. (2004). Adult psychopathic personality with childhood-onset hyperactivity and conduct disorder: A central problem constellation in forensic psychiatry. *Psychiatry Research, 121*, 271-280.

To describe lifetime mental disorders among perpetrators of severe inter-personal crimes and to identify the problem domains most closely associated with aggression and a history of repeated violent criminality, we used structured interviews, clinical assessments, analyses of intellectual functioning, medical and social files, and collateral interviews in 100 consecutive subjects of pretrial forensic psychiatric investigations. Childhood-onset neuropsychiatric disorders [attention-deficit/hyperactivity disorder (AD/HD), learning disability, tics and autism spectrum disorders] affected 55% of the subjects and formed complex comorbidity patterns with adult personality disorders [including psychopathic traits according to the Psychopathy Checklist (PCL-R)], mood disorders and substance abuse. The closest psychiatric covariates to high Lifetime History of Aggression (LHA) scores and violent recidivism were the PCL-R scores and childhood conduct disorder (CD). Behavioral and affective PCL-R factors were closely associated with childhood AD/HD, CD, and autistic traits. The results support the notion that childhood-onset social and behavioral problems form the most relevant psychiatric symptom cluster in relation to pervasive adult violent behavior.

21. Thornberry, T. P., Freeman-Gallant, A., Lizotte, A. J., Krohn, M. D., & Smith, C. A. (2003). Linked lives: The intergenerational transmission of antisocial behavior. *Journal of Abnormal Child Psychology, 31*, 171-184.

There is a strong assumption of intergenerational continuity in behavior patterns, including antisocial behavior. Using a 3-generation, prospective study design, we examine the level of behavioral continuity between Generation 2 (G2) and Generation 3 (G3), and the role of economic disadvantage and parenting behaviors as mediating links. We estimate separate models for G2 fathers and G2 mothers. Data are drawn from the Rochester Youth Development Study, a longitudinal study begun in 1988 during G2's early adolescence ($n = 1,000$), which has collected prospective data on G2, their parents (G1), and now their G3 children. Results show that intergenerational continuity in antisocial behavior is evident, albeit somewhat modest. Parenting styles and financial stress do play a mediating role, although their effects vary by G2's gender. In general, adolescent delinquency plays a larger role in linking the generations for G2 fathers, whereas parenting behaviors and financial stress play a larger role for G2 mothers.

Additional Resources Supportive of H8 but with Nonviolent Criterion – Abstracts Provided

1. Benda, B.B. (2003). Survival analysis of criminal recidivism of boot camp graduates using elements from general and developmental explanatory models. *International Journal of Offender Therapy & Comparative Criminology*, 47, 89-110.

Examined the effects of boot camp on recidivism of criminals. 601 male graduates of a boot camp for adults were examined at baseline and at 5-yr follow-up concerning demographic characteristics and various criminal characteristics. Cox's proportional hazard analysis is used to determine the hazard rate of recurring arrests or parole violations of several elements of general and developmental models. Results show that caregiving factors exerted inverse relations with the hazard of recidivism, whereas low self-control, deficits in social skills, peer association with criminals, gang membership, drug use and sales, and carrying weapons exerted positive relationships with this hazard. These findings remained regardless of the age when persons begin committing offenses. Implications of the findings for theoretical models are discussed.

2. Dalteg, A., & Levander, S. (1998). Twelve thousand crimes by 75 boys: A 20-year follow-up study of childhood hyperactivity. *Journal of Forensic Psychiatry*, 9, 39-57.

Retrospective assessments of attention deficit hyperactivity disorder (ADHD) for 75 male advanced juvenile delinquents (AJD), treated at a Swedish national borstal unit in 1975-1976 beginning at ages 12-16 yrs, were analyzed in relation to psychosocial background data, concurrent borstal data, and follow-up data until age 30. All Ss had conduct disorder (CD) and 68% were rated as suffering from ADHD during pre-school and/or school years. Between the ages of 6 and 30, the 75 AJDs were sentenced for a total of 12,000 crimes, which, corrected for the dark number ratio, can be estimated to 1,000 crimes per individual. In comparison with non-hyperactives, hyperactives had better psychosocial background; markedly more pronounced school problems; a higher level of criminality, present from the beginning and becoming more pronounced in later years; and a worse social outcome. ADHD appears to be related to crime volume and versatility (a lifetime increase in crimes of 250%) rather than to type of crime (no increase in crimes of violence). It appears to be one index of a specific kind of vulnerability, which markedly affects prognosis among AJDs probably by playing an active role in the criminogenic mechanisms.

3. Farrington, D. P. (2000). Psychosocial predictors of adult antisocial personality and adult convictions. *Behavioral Sciences & the Law*, 18, 605-622.

Investigated the ability of psychosocial risk factors measured at age 8-10 to predict antisocial personality measures at ages 18 and 32 and convictions between ages 21 and 40. 411 males followed since age 8 completed antisocial personality scales. The most important childhood predictors were a convicted parent, large family size, low intelligence or attainment, and child-rearing factors, including a young mother and a disrupted family. The accuracy of prediction of antisocial personality at age 32 on the basis of childhood risk factors measured more than 20 yrs before was surprising: nearly half of boys with a convicted parent at age 10 were antisocial at age 32, compared with 1 in 6 of the remainder. Over 60% of boys that were very high risk at age 8-10 became antisocial at age 32.

4. Ge, X., Donnellan, M. B., & Wenk, E. (2003). Differences in personality and patterns of recidivism between early starters and other serious male offenders. *Journal of the American Academy of Psychiatry & the Law*, 31, 68-77.

In this study, the differences in personality and patterns of recidivism were compared between individuals with an early incidence of offending ("early starters") and their later-starting counterparts ("later starters"). Results indicated that early starters were significantly different from later starters in several personality characteristics, as measured by the California Personality Inventory (CPI) and the Minnesota Multiphasic Personality Inventory (MMPI). Specifically, early starters scored lower on the responsibility and socialization scales of the CPI and higher on the paranoia, schizophrenia, and hypomania scales of the MMPI. Moreover, results indicated that early starters were at a significantly higher risk for recidivism than later starters, both at a 15-month and a 20-year follow-up.

5. Juby, H., & Farrington, D. P. (2001). Disentangling the link between disrupted families and delinquency. *British Journal of Criminology*, 41, 22-40.

The Cambridge Study in Delinquent Development is a prospective longitudinal survey of 411 South London males from 8 to 46 yrs old. Delinquency rates were higher among boys who were living in permanently disrupted families on their 15th birthday compared to boys living in intact families. Results were very similar whether juvenile convictions, juvenile self-reported delinquency or adult convictions were studied. Delinquency rates were similar in disrupted families and in intact high conflict families. Boys who lost their mothers were more likely to be delinquent than boys who lost their fathers, and disruptions caused by parental disharmony were more damaging than disruptions caused by parental death. Boys from disrupted families who continued living with their mothers had similar delinquency rates to boys from intact harmonious families. These results are more concordant with life course theories than with trauma or selection theories of the effects of family disruption.

6. Klevens, J., Roca, J., Restrepo, O., & Martinez, A. (2001). Risk factors for adult male criminality in Colombia. *Criminal Behavior & Mental Health*, 11, 73-85.

Established, in Colombia, the importance of factors alleged to be causes or correlates of adult criminality according to the published literature from other countries. A comparison was made of 223 arrested male offenders from ages 18-30 and 222 similar community controls selected from 5 cities in Colombia as to their family background, exposure to abuse, family stressors, perceived care and history of childhood disruptive behavior problems. Compared with neighborhood controls from similar social classes, offenders were significantly more likely to report having had parents with less education, a mother under the age of 18 or over the age of 35 at time of birth, family members involved in crime, experiencing extreme economic deprivation, parental absence, family conflict, severe punishments, physical abuse, and maternal unavailability, rejection and lack of supervision. Prevalence of childhood disruptive behavior problems was similar among offenders and controls. These findings appear to be independent of economic status, family size or type, birth order, or primary caregiver. It is concluded that although the independent contribution of most of these factors is small, once all others have been controlled for, their cumulative effect is strong.

7. Messer, J., Maughan, B., Quinton, D., & Taylor, A. (2004). Precursors and correlates of criminal behavior in women. *Criminal Behavior & Mental Health, 14*, 82-107.

Background: The precursors and correlates of criminal behavior in women were examined in this longitudinal study of women in their late thirties. Methods: The sample consisted of a high-risk group of women ($n = 86$) and a comparison group ($n = 97$): the former had been raised in institutional care. Questionnaire measures of childhood behavior problems and detailed interview data from two time points in adulthood were obtained, along with official records of offending. Results: In terms of childhood precursors, antisocial behavior, institutional rearing, hyperactivity and adolescent conduct disorder were found to be significantly related to offending. Later adolescent factors were also found to be important: mixing with deviant peers and leaving school without any qualifications or plans for work. Correlates of offending in adulthood included difficulties in mental health, drug use, marriage and parenting. Further analysis was undertaken to clarify the associations by using ex-care status and conduct disorder as covariates. Discussion: Well-established predictors of offending in male samples seem quite as important for women and girls. The findings also suggested strong links between offending and problems in parenting.

8. Pulkkinen, L., Virtanen, T., Klinteberg, B. A., & Magnusson, D. (2000). Child behavior and adult personality: Comparisons between criminality groups in Finland and Sweden. *Criminal Behavior & Mental Health, 10*, 155-169.

Examined adult personality and childhood behaviors for groups of non-criminals and criminals of 268 Finnish and 169 Swedish Ss. Crime groups were also compared in the 2 cultures. Karolinska Scales of Personality (KSP) were given when Ss were 36 yrs of age, and the Ss had been observed and rated by their teachers in respect of behavior in childhood (at age 8 yrs and 13 yrs, respectively). Results indicate that male offenders with alcohol problems (Finnish and Swedish) had significantly higher scores on psychopathy-related personality traits in adulthood than other subgroups, as indicated by higher impulsivity, muscular tension and lower socialization. They also displayed higher scores on teacher-rated aggressiveness in childhood than the non-criminal groups. The female subgroup displaying criminal activity was small and did not differ significantly from non-offenders in adult personality characteristics. Female offenders, however, showed early indications of lower sociability (in Finland) and higher aggressiveness and disharmony in childhood than nonoffenders (in Sweden). The authors suggest that early problem behaviors are precursors of subsequent criminal activity in at least 2 cultures. It is argued that the results emphasize the importance of longitudinal research programs.

9. Raine, A., Mellinger, K., Liu, J., Venables, P., & Mednick, S. A. (2003). Effects of environmental enrichment at ages 3-5 years on schizotypal personality and antisocial behavior at ages 17 and 23 years. *American Journal of Psychiatry, 160*, 1627-1635.

Methods to prevent two major mental disorders, schizophrenia and conduct disorder, have been elusive. This study assessed the effects of an early nutritional, educational, and physical exercise enrichment program on adult outcome for schizotypal personality, conduct disorder, and criminal behavior. Eighty-three children were assigned to an experimental enrichment program from ages 3 to 5 years and matched on temperament, nutritional, cognitive, autonomic, and demographic variables with 355 children who experienced usual community conditions (control group). Both

self-report and objective measures of schizotypal personality and antisocial behavior were obtained when the subjects were ages 17 and 23 years. Results indicate that subjects who participated in the enrichment program at ages 3-5 years had lower scores for schizotypal personality and antisocial behavior at age 17 years and for criminal behavior at age 23 years, compared with the control subjects. The beneficial effects of the intervention were greater for children who showed signs of malnutrition at age 3 years, particularly with respect to outcomes for schizotypy at ages 17 and 23 and for antisocial behavior at age 17.

Narrative Reviews of H8

1. Ingoldsby, E. M., & Shaw, D. S. (2002). Neighborhood contextual factors and early-starting antisocial pathways. *Clinical Child & Family Psychology Review*, 5, 21-55.

This paper examines research investigating the effects of neighborhood context on the onset and persistence of early-starting antisocial pathways across middle and late childhood. The review begins by presenting theory and research mapping the early-starting developmental pathway. Next, sociologically and psychologically based investigations linking neighborhood context and early antisocial behavior are examined, in order to posit and evaluate the effects of community economic disadvantage, exposure to neighborhood violence, and involvement with neighborhood-based deviant peer groups on the development of antisocial behavior. It is suggested that middle childhood may represent a critical developmental period during which children are at heightened risk for neighborhood-based effects on antisocial behavior problems. Key methodological issues are addressed, and recommendations for future research integrating developmental pathways and neighborhood theory and research are advanced.

2. Loeber, R., & Hay, D. (1997). Key issues in the development of aggression and violence from childhood to early adulthood. *Annual Review of Psychology*, 48, 371-410.

Reviews different manifestations of aggression from childhood to early adulthood to establish how early manifestations are related to later manifestations. Similarities and differences in manifestations of aggression between the 2 genders and developmental sequences and pathways from minor aggression to violence are highlighted. Long-term escalation is contrasted with short-term escalation at older ages. Although studies have emphasized high stability of aggression over time, data show that a substantial proportion of aggressive youth desist over time. Temperamental, emotional, and cognitive aspects of aggression are reviewed, either as precursors or co-occurring conditions to aggression. Selected processes in the realms of the family, peers, and neighborhoods are highlighted that are known to be associated with juvenile aggression. Cumulative, long-term causes are contrasted with short-term causes, and causes associated with desistance in aggression are reviewed.

H9 Personality Disorder

1. Bovasso, G. B., Alterman, A. I., Cacciola, J. S., & Rutherford, M. J. (2002). The prediction of violent and nonviolent criminal behavior in a methadone maintenance population. *Journal of Personality Disorders, 16*, 360-373.

→ Community Violence

The purpose of this study was to identify psychological traits whose measurement improved the assessment of antisocial behavior in populations in which the diagnostic criteria of Antisocial Personality Disorder (ASPD) may be problematic. The sample comprised 254 opiate-dependent males participating in methadone management treatment between 1989 and 1997. The participants were recruited from a Veteran's Administration facility ($n = 210$) and from a community methadone maintenance facility ($n = 44$). Individuals with current organic mental disorder or psychotic disorders were excluded. The median age of the subjects was 40. An assessment battery was administered at the start of the study and then again when the patients were 2 to 6 weeks into treatment. The assessment instruments included: PCL-R, the Socialization Scale of California Personality Inventory (CPI So), Personality Disorder Examination (PDE), the Bell Object Relations and Reality Testing Inventory (BORRTI), the Interpersonal Reactivity Index (IRI), the Machiavellianism Scale (MACH-IV), and the Buss-Durkee Hostility Index (BDHI). To assess general psychopathology the Structured Interview for DSM-III-R Personality Disorder (SIDP-R) and the Structured Clinical Interview for the DSM-III-R (SCID) were used. Each participant was followed for 2 years after entry into treatment. Records of criminal arrests and charges at baseline through follow-up were obtained from the Pennsylvania Commission on Crime and Delinquency. The primary outcome measure was the number of charges for violent crimes and nonviolent crimes two years after treatment entry. Violent crimes included murder, rape, nonsexual assaults, and kidnapping. Twelve subjects in the sample incurred violent charges during the follow-up period.

An exploratory factor analysis found that eight factors were required to produce a model that was a good fit to the data (RMSEA=.069). Of the eight factors, five consisted of three or more measures with salient loadings greater than .30 (and which loaded on only one factor). A confirmatory factor analysis found the 5-factor model to provide a good fit to the data ($\chi^2 = 412.4$, $df = 179$, RMSEA = .072). The five factors measured hostility, insecure attachment, impaired reality testing, antisocial personality, and empathy.

These factors were used in a logistic regression analysis to predict violent and nonviolent crimes over the 2-year follow-up period. **Relevant to the HCR-20 Item H9, the Antisocial Personality factor was the best predictor of violent criminal charges ($\beta = 1.0$, Wald = 5.6, $p < .05$; $\chi^2 = 6.1$, $p < .05$). The Deficient Empathy factor further increased the prediction of violent criminal charges ($\beta = .8$, Wald = 4.4, $p < .05$; $\chi^2 = 9.1$, $p < .0001$). The risk of violent criminal charges was over two times more likely for individuals with high scores on the Antisocial Personality factor compared to those with low scores on this factor (OR = 2.74, 95% CI = 1.15 - 6.51). In addition, individuals with high scores rather than low scores on the Deficient Empathy factor had over two times a greater risk of violent criminal charges (OR = 2.22, 95% CI = 1.05 - 4.71). Antisocial Personality Factor scores also predicted the time to**

incarceration after adjusting for the first stage predictors ($\beta = .54$, Wald = 5.3, $p < .05$; $\chi^2 = 5.5$, $p < .05$). In addition, individuals with high scores on this measure were likely to be incarcerated sooner than subjects with low scores on this measure (OR = 1.72, 95% CI = 1.09 - 2.74). Post hoc analyses were also conducted to identify the specific measures composing Antisocial Personality and Empathy factors that best predict their respective outcomes. Violent criminal charges were associated with low scores on the DIRI Perspective-Taking measure (empathy measure, $\beta = -.16$, Wald = 5.5, $p < .05$; OR = .85, 95% CI = .74 - .97) and low scores on the CPI So scale (antisocial measure, $\beta = -.13$, Wald = 4.8, OR = .88, 95% CI = .78 - .98). An Empathy x Antisocial Personality interaction term was also significantly associated with violent criminal charges, ($\beta = .86$, Wald = 5.5, $p < .01$) but not after adjustment for the Empathy factor scores ($\beta = -1.0$, Wald = 6.1, $p < .01$). Antisocial Personality factor score also predicted violent criminal charges, but did not attenuate the association of the Empathy x Antisocial Personality interaction with violent criminal charges. As such, low empathy scores were better predictors of violent crimes than scores indicating low empathy in highly antisocial individuals.

2. Hernandez-Avila, C. A., Bursleson, J. A., Poling, J., Tennen, H., Rounsaville, B. J., & Kranzler, H. R. (2000). Personality and substance use disorders as predictors of criminality. *Comprehensive Psychiatry*, 41, 276-283.

→ Community Violence

This study evaluated the relationship between personality disorder (PD) diagnosis and criminal behavior among drug- and alcohol-dependent patients both retrospectively and prospectively. Three hundred seventy subjects were recruited from a consecutive series of 855 patients entering substance abuse treatment at two centers in Connecticut. Approximately half of the sample ($n = 188$, 50.8%) was from two publicly supported outpatient treatment units, and the other half ($n = 182$, 49.2%) was from an inpatient treatment program in a university hospital. For inclusion in the study, patients had to remain in treatment for at least 2 weeks in the ambulatory setting or 3 days in the inpatient unit. Individuals with a diagnosis of schizophrenia, schizoaffective disorder or current psychotic symptoms were excluded. The baseline interview sample mostly comprised female (55.9%) European-American participants (55.7%; 34.6% African American; 9.7% were Hispanic). The mean age was 32.6 years ($SD = 7.7$). Of the 370 subjects interviewed at baseline, 1-year follow-up evaluations were obtained for 276 subjects. The sample at the follow-up session did not significantly differ from the baseline interview sample in terms of demographic characteristics.

Baseline assessments were administered after participants had completed detoxification and had been admitted to an active phase of treatment. Current and lifetime substance use disorders were diagnosed using the Structured Clinical Interview for DSM-III-R (SCID-I). Pretreatment alcohol consumption and drug use severity were measured using the Alcohol Severity Index (ASI), which is a semi-structured interview that covers seven functional areas relevant to substance abuse treatment (alcohol, drug, medical, legal, family, social, and psychiatric problems). Additional information regarding criminal offenses was obtained from the legal section of the ASI. Criminal offenses were classified into different categories, including violent crimes. Crimes defined as violent were robbery, assault, arson, rape, homicide, or manslaughter. Personality disorders were diagnosed using the Structured Clinical Interview for DSM-III-R Personality

Disorder (SCID-II). Administration of the SCID-II consisted of two stages: patients first completed a self-report questionnaire and then participated in a detailed clinical interview. Interclass correlation for diagnoses was .71.

Participants diagnosed with antisocial (OR = 1.38, 95% CI = 1.10 - 1.66), borderline (BPD; OR = 1.42, 95% CI = 1.07 - 1.77) or schizoid (OR = 1.90, 95% CI = 1.26 - 2.52) PD were more likely to report having committed a violent crime. Participants with a greater number of PD diagnoses also were more likely to report having committed a violent crime (OR = 1.20, 95% CI = 1.05 - 1.32). There were no significant interactive effects of drug problem severity and PD variables with respect to violent crimes. A diagnosis of BPD was the only significant predictor of violent crimes during the 1-year follow-up period (OR = 2.66, 95% CI = 1.65 - 3.69).

3. Hiscoke, U. L., Langström, N., Ottosson, H., & Grann, M. (2003). Self-reported personality traits and disorders (DSM-IV) and risk of criminal recidivism: A prospective study. *Journal of Personality Disorders, 17*, 293-305.

→ Community Violence

The authors used a prospective design to explore the association between dimensional and categorical measures of personality disorder (PD) and reconvictions in adult offenders. The sample comprised 168 offenders consecutively referred for pre-sentencing forensic psychiatric evaluation (FPE) in Sweden during 1995-1996. The mean age of the subjects was 35.74 years ($SD = 10.51$ years; range 16-62 years). There were only 10 females (6%) in the sample. Personality disorder was measured with the self-report Personality Questionnaire (DIP-Q). The DIP-Q yields both categorical diagnoses and dimensional measures of all DSM-IV and ICD-10 PDs. Participants completed the DIP-Q during the pre-sentence FPE. The subjects were followed prospectively until 12 October 1999. The average follow-up time after release was 36 months ($SD = 12$ months). Data on criminal reconvictions and the dates for entering and leaving prison or hospital treatment were obtained from a national register maintained by the Swedish National Police Board. Violent recidivism was defined as a reconviction for attempted or completed murder, manslaughter, assault, robbery, or rape.

Based on the DIP-Q, 102 participants met criteria for at least one categorical DSM-IV PD diagnosis: 85 participants (51%) met the criteria for at least one Cluster A PD, 73 (43%) for at least one Cluster B PD, and 83 (49%) for one or more Cluster C PDs. The majority of the subjects ($n = 126$; 54%) met diagnostic criteria for two or more PDs. The mean number of categorical PD diagnoses was 2.49 ($SD = 2.66$, $Md = 1$, range = 0-9). The FPE assessment team reviewed the self-reports, the nonstructured clinical interviews, and the observation data when assigning the best-estimate clinical PD diagnoses. However, agreement for any PD was poor between self-reports and clinical diagnoses according to Cohen's kappa (.26).

Participants whose self-assessment included a categorical diagnosis of antisocial (OR = 4.48, 95% CI = 1.99 - 10.09) or borderline (OR = 2.24, 95% CI = 1.06 - 4.72) PDs were at increased risk of violent recidivism. Finally, a categorical diagnosis of schizoid PD was

associated with violent recidivism (OR = 2.60, 95% CI = 1.03 - 6.56). Dimensional measures of antisocial, borderline, histrionic and narcissistic PD also were significantly related to violent recidivism (data not provided). Because age at FPE was a significant covariate for risk for violent recidivism (OR = .94, 95% CI = .91 - .98), the independent effect of categorical and dimensional PD measures on recidivism was investigated by entering PDs and age into a series of pairwise logistic regression models. When controlling for age, antisocial PD was statistically significant (OR = 3.73, 95% CI = 1.57 - 8.85). When entering dimensional measures of PD together with age, associations between both antisocial PD (OR = 1.17, 95% CI = 1.04 - 1.31) and schizoid PD (OR = 1.28, 95% CI = 1.01 - 1.61) remained statistically significant.

The authors explored the role that Axis I comorbidity might play as a potential confounder of relations between PD and recidivism. Substance use disorders were the only diagnoses associated with increased risk of violent reoffending (age-adjusted OR = 2.90, 95% CI = 1.35 - 6.24). When controlling for age, substance use, and depressive/anxiety disorders, a categorical antisocial PD diagnosis remained significantly associated with violent recidivism. However, statistical significance was not reached for dimensionally assessed antisocial PD when controlling for age and Axis I diagnosis. **The independent effect of dimensionally assessed schizoid PD on violent recidivism remained significant when controlling for age and Axis I comorbidity. When both schizoid and antisocial PD symptoms were introduced together with age in a logistic regression model, the dimensional measure of antisocial PD but not schizoid PD remained significantly associated with violent recidivism (adjusted OR = 1.14 per criterion).**

4. Johnson, J. G., Cohen, P., Smailes, E., Kasen, S., Oldham, J. M., Skodol, A. E., & Brook, J. S. (2000). Adolescent personality disorders associated with violence and criminal behavior during adolescence and early adulthood. *American Journal of Psychiatry*, 157, 1406-1412.

→ Community Violence

The authors used a community based, longitudinal prospective design to investigate whether personality disorders during adolescence are associated with elevated risk for violent behavior during adolescence and early adulthood. The present sample ($N = 717$; $n = 366$ females [51%]) was a subset of 976 randomly selected families from two upstate New York counties that had children who ranged in age from 1 to 10 years, and with whom maternal interviews had been conducted in 1975. Research interviews were completed with the youth and their mothers (separately) in 1983, 1985-1986, and 1991-1993. During the follow up sessions, the youths and their mothers were interviewed to assess Axis I and Axis II disorders, as well as demographic and other psychosocial variables. The sample mostly was Caucasian (91%).

The parent and youth versions of the Diagnostic Interview Schedule for Children (DISC) were administered in 1983, 1985-86, and 1991-93 to assess anxiety, disruptive, eating, mood, and substance use disorders. One DISC module assesses a range of violent acts (arson, assault resulting in injury to another person, breaking and entering, mugging, robbery, starting serious physical fights, threats to injure others, and vandalism) committed during the past 1-4 years or during the individual's lifetime. The focus of this study was on violent acts reported in 1985-86

(mean age = 16.1 years, *SD* = 2.7 years) and 1991-93 (mean age = 22.0 years, *SD* = 2.7 years). Both mother and youth were interviewed to increase the reliability and validity of psychiatric diagnoses. Mother and youth responses were combined so that a report by either informant that a symptom was present was accepted as valid. Personality disorder assessments were conducted using items from the Personality Diagnostic Questionnaire, the Disorganizing Poverty Interview, and the parent and youth versions of the DISC. Because the DSM-IV stipulates that PD symptoms must be persistent in order for an adolescent to be diagnosed with a PD, adolescents were diagnosed with a PD only if the youth met the criteria in 1983 and in 1985-86 or if they met the criteria at one assessment and were within one criteria of meeting the threshold at the other assessment. In addition, ASPD was only assessed in 1983 and in 1985-86 among those participants who were at least 18 years old.

Of the 103 adolescents with personality disorders, 51 had a single personality disorder and 52 had two or more. Violent acts were committed by 38% ($n = 39$ of 103) of the subjects with a personality disorder during adolescence, which is a significantly higher rate than that of subjects without a personality disorder in adolescence (19%, $n = 117$ of 614, $\chi^2 = 18.33$, $df = 1$, $p < .001$). **Subjects with cluster A personality disorders during adolescence were significantly more likely than those without cluster A personality disorders to commit breaking and entering (OR = 4.31, 95% CI = 1.58 - 11.97) and to threaten to injure others during early adulthood (OR = 4.80, 95% CI = 2.29 - 10.05) after all the covariates were controlled for (parental psychopathology, SES, co-occurring Axis I and Axis II psychiatric disorders in mid-adolescence and the presence of CD or ODD during late childhood or early adolescence).**

Each additional cluster A personality symptom was associated with an increase in risk for arson or vandalism (OR = 1.16, 95% CI = 1.06 - 1.26), threats to injure others (OR = 1.41, 95% CI = 1.26 - 1.58), initiation of serious physical fights (OR = 1.28, 95% CI = 1.15 - 1.43), mugging or robbery (OR = 1.43, 95% CI = 1.13 - 1.81), assault resulting in injury to others (OR = 1.47, 95% CI = 1.23 - 1.76) and any violent act against others (OR = 1.36, 95% CI = 1.24 - 1.51) after the covariates were controlled. Supplemental analyses indicated that cluster A personality disorder diagnosis did not interact statistically with substance abuse to predict violent acts.

Participants with cluster B personality disorders during adolescence, not including ASPD, were significantly more likely than those without cluster B personality disorders to be involved in arson or vandalism (OR = 3.36, 95% CI = 1.74 - 6.48), to initiate physical fights (OR = 4.64, 95% CI = 2.24 - 9.63), to commit a mugging or robbery (OR = 7.26, 95% CI = 1.98 - 25.56), and to engage in any violent act against others (OR = 4.24, 95% CI = 2.20 - 8.18) after the covariates were controlled. **Each additional cluster B symptom was associated with an increase in risk for all six types of violent acts during early adulthood after the covariates were controlled.** A cluster B personality disorder did not interact with substance abuse to predict any violent acts. A cluster C personality disorder was not associated with an increase in risk of committing any violent acts. Symptoms of paranoid, narcissistic, or passive-aggressive personality disorder during adolescence were uniquely associated with an increase in risk of committing any violent act against others after the covariates were controlled for.

5. Moran, P., Walsh, E., Tyrer, P., Burns, T., Creed, F., & Fahy, T. (2003). Impact of comorbid personality disorder on violence in psychosis: Report from the UK700 trial. *British Journal of Psychiatry*, 182, 129-134.

→ Community Violence

The study examined the association between comorbid personality disorder and violence in community dwelling-patients with psychosis. The UK700 case management trial was a randomized controlled trial designed to examine the efficacy of intensive- compared with standard- care management. Inclusion criteria included: age 18 - 65 years, diagnosis of a psychotic illness with at least 2 years duration, and history of at least 2 inpatient admissions for psychotic illness, with one in the previous 2 years. Patients with a primary diagnosis of substance misuse or organic brain damage were excluded. For this study, a total of 670 patients with psychotic illness were screened for comorbid personality disorder. The presence of comorbid personality disorder was assessed at baseline using a rapid version of the Personality Assessment Schedule (PAS-R), a semi-structured interview that measures ICD-10 defined personality traits. The PAS-R was administered by an independent research assistant at the end of the baseline clinical assessment. For the purposes of this study, the PAS-R data were regrouped into a dichotomous variable with the categories personality disorder and no personality disorder. Other information collected at baseline included: socio-demographic schedule, life circumstances over the previous 24 months including information about violent behavior and victimization, diagnosis determined by a structured examination of case notes, clinical symptom status assessed using the Comprehensive Psychopathological Rating Scale (CPRS), patient needs recorded using the Camberwell Assessment of Need (CAN), and social disability measured using the World Health Organization Disability Assessment Schedule.

The outcome of interest in this study was physical assault in the 2 years of the trial. Three data sources were used to produce a binary outcome measure for each patient: (1) the patient or carer, (2) case managers, and (3) case notes. Home office criminal records also were obtained for all participants. Participants mostly were White (52.1%; 27.3% African-Caribbean) men (56.7%). Of the 670 patients, 186 were scored as having a comorbid personality disorder (28%). The most prevalent category was schizoid personality disorder, although patients usually qualified for more than one sub-category of PD (mean number of PDs per patient = 1.0, $SD = 1.2$).

In the present sample, 32% ($n = 60$) of the participants with comorbid PDs committed an assault compared with 19% ($n = 94$) of those without comorbid PDs ($\chi^2 = 12.5$, $p < .001$). **Following adjustments for age, gender, social class, ethnicity, and randomization status, the following subcategories of personality disorder were significantly associated with violence at 2 years: paranoid (OR = 1.36, 95% CI = 1.01 - 1.84), dissocial (OR = 1.66, 95% CI = 1.01 - 1.84) and impulsive (OR = 1.45, 95% CI = 1.08 - 1.95).** Fully adjusted models of associations between paranoid, dissocial, and impulsive personality disorder and violence were not statistically significant. **Finally, personality disorder was significantly associated with an increased risk of violence after adjusting for baseline clinical state and other established risk factors for violence in the data set (OR = 1.71, 95% CI = 1.05 - 2.79).**

6. Swartz, J.A., & Lurigio, A.A. (2004). Psychiatric diagnosis, substance use and dependence, and arrests among former recipients of supplemental security income for drug abuse and alcoholism. *Journal of Offender Rehabilitation*, 39, 19-38.

→ Community Violence; Substance Abuse (Comorbidity)

*Article summary also appears under Items H5 and H6

The data used in the present study were collected as part of a larger, nine-site, longitudinal study of the effects of terminating the Supplemental Security Income for drug addiction and alcoholism (SSI/DA&A) on former benefits. Participants were randomly selected from among those who had received SSI/DA&A in 1996 and were between the ages of 21 and 59 years. At baseline, 276 participants were interviewed, but 21 were excluded from the study because they were receiving concurrent Social Security Disability Insurance (an exclusion criteria). Over a period of two years, four follow-up interviews at six-month intervals were attempted, for a total of up to five interviews per participant. At the 12-month follow-up, 228 participants were located and re-interviewed. At this time, standardized diagnoses of psychiatric disorders and substance use disorders were obtained and urine samples to test for current drug use were collected. Complete follow-up information was collected from 187 of the 228 participants interviewed at the 12-month follow-up. Participants also were interviewed at 18-month and 24-month follow-ups. The majority of the participants (84%) completed all interviews.

Demographic, SSI, and income data collected at the 12-month follow-up interview were used in the present analyses. Also at the 12-month interview, the Quick Diagnostic Interview Schedule (QDIS) was administered to obtain lifetime and past-year psychiatric diagnoses, including substance dependence, based on DSM-III-R criteria. Past-year diagnoses were used in analyses for all disorders except antisocial personality disorder, which was assessed as a lifetime disorder.

Urine samples collected at 12-, 18-, and 24-month interviews were tested for a variety of drugs (alcohol was not tested via urinalysis). Past-year dependence on alcohol was used as the measure of current alcohol use.

After the interview-phase of the study was completed, arrest information covering the length of each participant's criminal career through the end of the 24-month follow-up was obtained from the Chicago Police Department. Violent offenses consisted of arrests for charges such as murder, aggravated criminal sexual assault, robbery, battery, assault, and unlawful use of a weapon. Arrest histories for property offenses, drug offenses and 'other' offenses were coded as well. For participants with an arrest in any category, the number days between the date of arrest and 1 January 1997 were calculated, the date the DA&A program was terminated.

The sample was mostly men (67%) and African American (91%). The mean age was 42.1 years ($SD = 8.4$). At least one positive drug test occurred for 68% of the sample. However, only 34% of the sample met the criteria for a past-year diagnosis of dependence on any drug (including alcohol).

Cox regression survival models were used to analyze the relationships between demographic characteristics, SSI status, psychiatric diagnosis, and drug use and time-to-arrest over the two-

year follow-up for each of the four arrest categories. For violent offenses, being dependent on alcohol and having an antisocial personality disorder were each significantly and positively related to being arrested. Of relevance to HCR-20 item H5, participants dependent on alcohol had almost five times (OR = 4.61, 95% CI = 1.67 - 12.75, $p < .01$) the chance of being arrested for a violent crime as those not dependent.

Of relevance to HCR-20 item H6, participants with a diagnosis of major depression had only one-tenth the chance of being arrested for a violent offense compared to participants who were not diagnosed as being depressed. Similarly, there was no evidence of elevated arrest rates for violent crime among participants diagnosed with schizophrenia-spectrum disorders (OR = .35, 95% CI = .04 - 3.22 $p = n.s.$).

Of relevance to HCR-20 item H9, a diagnosis of antisocial personality disorder was associated with a three-fold increase in the chances of an arrest for a violent crime (OR = 3.03, 95% CI = 1.08 - 8.53, $p < .05$).

7. Ullrich, S., & Marneros, A. (2004). Dimensions of personality disorders in offenders. *Criminal Behavior & Mental Health, 14*, 202-213.

→ Community Violence

The authors examined the underlying dimension of ICD-10 personality disorders to analyze their association with criminal behavior and with specific criminal history variables. The data for the present study were collected as a part of the Halle Defendant Study between 1997 and 1998. The sample consisted of 105 offenders convicted of major offenses (grievous bodily harm, sexual offenses, and homicide). The mean age of the sample was 33.6 years ($SD = 10.2$ years). Only 9% of the offenders were female. The control sample comprised 80 non-criminal, community participants randomly selected with the assistance of the residents' registration office in Halle. On average they were younger ($M = 23.9$ years, $SD = 3.6$ years) and the proportion of females was higher (20%) than the offenders.

ICD-10 defined personality disorders (PDs) were assessed using the International Personality Disorder Examination (IPDE). The IPDE is a structured clinical interview that provides both categorical and dimensional information. The NEO-Five-Factor Inventory was administered to assess the dimensions of the Five-Factor Model of personality. The German version of the IPC-Scales was used for assessment of 'locus of control of reinforcement.' The Hostility and Direction of Hostility Questionnaire also was administered. The following criminal history variables were coded from court records: index offense, sentence, total number of convictions, total number of convictions due to violent offenses subdivided into violence with injury to a person (homicide, grievous bodily harm, rape) and violent offenses without de facto injury to the victim (robbery, blackmail, hostage-taking).

Principal component factors analysis of the eight personality disorder scores yielded three factors with eigenvalues greater than 1 that accounted for 67% of the total variance. Factor 1 reflected emotionally unstable, dissocial, paranoid, and histrionic personality traits. Factor 2 was highly

loaded by anankastic personality traits and showed a negative association with schizoid personality score. Factor 4 was defined by negative loadings on anxious and dependent personality disorder dimensions. **Separate analyses with the forensic and non-forensic sample yielded the same factor structure as that which emerged in the total sample. Factor 1 was correlated positively with the number of violent offenses ($r = .29, p < .01$). Subsequent analyses revealed this association only for offenses with bodily harm of the victim ($r = .26, p < .01$).** Factor 2 was correlated positively with the age of first conviction ($r = .30, p < .01$). Finally, Factor 3 was correlated positively with the number of total convictions ($r = .21, p < .05$).

8. Wallace, C., Mullen, P., Burgess, P., Palmer, S., Ruschena, D. & Browne, C. (1998). Serious criminal offending and mental disorder. *British Journal of Psychiatry*, 172, 477-484.

→ Community Violence

* Article summary also appears under item H5

The authors used a case linkage strategy (relying on two databases) to investigate the association between criminal offending and mental disorder. The first was the higher courts' database and comprised all findings of guilt in the County and Supreme Courts of Victoria (Australia) for 1993-1995, with 4156 individuals (3838 men) who committed 16,528 offenses. Convictions were subdivided into homicide, interpersonal, violence, sexual offenses, property offenses, arson, drug-related offenses, traffic offenses and 'other' offenses (i.e., fraud). The second database was the Victorian Psychiatric Case Register (VPCR), which lists nearly 200,000 individuals over the age of 15 with all their contacts. The register includes with over 95% of public outpatient, community and in-patient services. In 1995, 31,000 individuals had contact with the public services.

A single primary diagnosis was assigned through a diagnostic hierarchy, with schizophrenia taking precedence over affective psychosis. The remaining diagnoses, in descending order, were: affective disorders, personality disorders, substance misuse, and 'others.'

The associations between violent offenses and primary diagnosis for men were as follows: schizophrenia ($n = 66$; OR = 4.4, 95% CI = 3.46 – 5.66, $p < .001$); affective psychosis ($n = 16$; OR = 3.1, 95% CI = 1.86 – 5.0, $p < .001$); affective disorders ($n = 40$; OR = 4.1, 95% CI = 2.0 – 5.63, $p < .001$); **personality disorders ($n = 51$; OR = 18.7, 95% CI = 14.08 – 24.71, $p < .001$);** substance misuse ($n = 169$; OR = 9.5, 95% CI = 8.14 – 11.18, $p < .001$); no diagnosis ($n = 151$; OR = 4.4, 95% CI = 3.74 – 5.21, $p < .001$); and residual diagnostic groups ($n = 89$; OR = 2.8, 95% CI = 2.29 – 3.50, $p < .001$).

The associations between sexual offenses and primary diagnosis for men were as follows: schizophrenia ($n = 18$; OR = 2.7, 95% CI = 1.70 - 4.32, $p < .001$); affective psychosis ($n = 7$; OR = 3.1, 95% CI = 1.44 – 6.40, $p < .01$); affective disorders ($n = 17$; OR = 4.0, 95% CI = 2.46 – 6.43, $p < .001$); **personality disorders ($n = 18$; OR = 14.7, 95% CI = 9.21 – 23.52, $p < .001$);** substance misuse ($n = 29$; OR = 3.5, 95% CI = 2.42 – 5.08, $p < .001$); no diagnosis ($n = 75$; OR = 5.1, 95% CI = 3.98 – 6.40, $p < .001$); and residual diagnostic groups ($n = 88$; OR = 6.8, 95% CI = 5.43 – 8.45, $p < .001$).

The associations between violent offenses and primary diagnosis for women were as follows: schizophrenia ($n = 4$; OR = 4.3, 95% CI = 1.60 - 11.63, $p < .001$); affective psychosis ($n = 2$; OR = 3.4, 95% CI = 0.84 - 13.62, *ns*); affective disorders ($n = 6$; OR = 5.7, 95% CI = 2.50 - 12.79, $p < .001$); **personality disorders ($n = 7$; OR = 49.6, 95% CI = 23.12 - 105.94, $p < .001$);** substance misuse ($n = 18$; OR = 55.7, 95% CI = 34.04 - 91.23, $p < .001$); no diagnosis ($n = 16$; OR = 6.6, 95% CI = 3.94 - 11.11, $p < .001$); and residual diagnostic groups ($n = 8$; OR = 3.6, 95% CI = 1.75 - 7.26, $p < .001$).

Men with schizophrenia were significantly more likely to have been convicted of violent and sexual offenses if they also had received a diagnosis of substance misuse. The associations between violent offenses and diagnostic categories with comorbid substance misuse were as follows: all schizophrenia ($n = 66$, OR = 4.4, 95% CI = 3.46 - 5.66, $p < .001$); schizophrenia without substance misuse ($n = 32$, OR = 2.4, 95% CI = 1.69 - 3.40, $p < .001$); schizophrenia with substance misuse ($n = 34$, OR = 18.8, 95% CI = 13.35 - 26.50, $p < .001$); all affective disorders ($n = 40$, OR = 4.1, 95% CI = 3.0 - 5.63, $p < .001$); affective disorders without substance misuse ($n = 26$, OR = 2.9, 95% CI = 1.95 - 4.23, $p < .001$); and affective disorders with substance misuse ($n = 14$, OR = 19.0, 95% CI = 11.15 - 32.29, $p < .001$).

The associations between sexual offenses and diagnostic categories with comorbid substance misuse were as follows: all schizophrenia ($n = 18$, OR = 2.7, 95% CI = 1.70 - 4.32, $p < .001$); schizophrenia without substance misuse ($n = 12$, OR = 2.0, 95% CI = 1.16 - 3.62, $p < .01$); schizophrenia with substance misuse ($n = 6$, OR = 7.4, 95% CI = 3.29 - 16.46, $p < .001$); all affective disorders ($n = 17$, OR = 4.0, 95% CI = 2.4 - 6.43, $p < .001$); affective disorders without substance misuse ($n = 15$, OR = 3.8, 95% CI = 2.27 - 6.32, $p < .001$); and affective disorders with substance misuse ($n = 2$, OR = 6.0, 95% CI = 1.50 - 24.34, $p < .01$).

9. Warren, J. I., Hurt, S., Loper, A. B., Bale, R., Friend, R., & Chauhan, P. (2002). Psychiatric symptoms, history of victimization, and violent behavior among incarcerated female felons: An American perspective. *International Journal of Law & Psychiatry*, 25, 129-149.

→ Institutional Violence

The study explored the relation between psychiatric morbidity, childhood victimization, and the perpetration of violence by women. The sample ($N = 802$) was recruited from a maximum security prison in Virginia. Participants in this study completed a self-report research protocol. The Brief Symptom Inventory (BSI) was used to assess various aspects of Axis I psychopathology and the Structured Clinical Interview for DSM-IV Personality Disorder Screening Questionnaire was used to collect information regarding personality disorders (PDs).

The amount of violence that each inmate had experienced and had perpetrated since entering the prison was measured by the Prison Violence Inventory (PVI). The PVI included a list of 12 items or questions with a yes/no answer format that queried the following violent behaviors: making threats; throwing objects at another inmate; pushing, grabbing, or shoving; slapping, kicking, biting, or choking another inmate or guard; hitting with a fist or beating someone up; forcing

someone to have sex; threatening with a weapon, spreading rumors that were not true, telling lies in order to get another inmate in trouble; stealing some object and any other action that the inmate considered to be violent. The score on these various items were combined into two cumulative indices: one that contained the nine items that pertained to threats and physical/sexual violence and the other which contained the three items regarding lying, rumors and stealing personal items. In addition, a file review was conducted to determine the number of institutional “tickets” the women had obtained during the past year and the number of times they had been placed in seclusion. This information was calculated as a frequency of incidents per month in order to standardize this measure for inmates who recently had been incarcerated or released.

Only 3% of the women were over age 50 and 48% of the women were age 32 or younger. Thirty-five percent of the sample had been incarcerated for at least one violent offense. Additionally, over 50% of the sample screened positively for Paranoid, Borderline, Narcissistic, and Obsessive-Compulsive personality disorders.

The inmates reported on average 0.97 ($SD = 1.83$) interpersonal violence items. The most frequently endorsed items were threatening to hit, throw, or harm (24%) and pushing, grabbing, or shoving (20%). Forced sex was the rarest item endorsed (although 2% of the women did endorse having engaged in this type of aggression).

The sample was divided randomly into two groups. From the first of these two subsamples, a group of 311 inmates with complete demographic, crime history, BSI, SCID-II Screen, Prison Violence Inventory (PVI), and Victimization Inventory (Vic-I) data were identified. A multiple regression analysis examined the relationship between institutional violence (Prison Violence Inventory) and positive screening for Borderline, Histrionic, Narcissistic, or Antisocial Personality Disorder (SCID-II Screen). A separate multiple regression with these same dependent variables was completed to predict whether the inmate was incarcerated for violent crime. Age and minority status were entered as control variables into both regression analyses. **The potential presence of Cluster B character pathology was significantly associated with institutional violence, beyond predictability afforded by age and racial status [F change (4,304) = 9.02, $p < .001$; R^2 change = .10; Final Model adjusted $R^2 = .19$]. Positive screening for Antisocial Personality Disorder or Histrionic Personality Disorder significantly contributed to the regression equation [Antisocial Personality Disorder: $\beta = 0.16$; t (311) = 2.80, $p < .01$; Histrionic Personality Disorder: $\beta = 0.17$; t (311) = 3.08, $p < .01$].** Positive screening for Borderline Personality Disorder or Narcissistic Personality Disorder did not contribute beyond effects provided by the other personality indicators.

Using a different subsample of inmates, a logistic regression analysis was completed to evaluate the collective effect of screening variables in distinguishing women with high and low levels of institutional violence. Women who had reported two or more violent incidents (High Violence Group, $n = 73$) were compared to a randomly selected subsample of those who reported less than two incidents (Low Violence Group, $n = 79$). Independent variables included age level, minority status, BSI Global Severity Index, results of screening for each Cluster B personality disorder, and self-reported physical or sexual victimization. The logistic regression model including these screening variables successfully distinguished the two groups of inmates [$\chi^2 = (9, N = 152) =$

42.49, $p < .001$; Nagelkerke pseudo- $R^2 = .33$]. **Results indicated that age level and a positive screen for Antisocial Personality Disorder significantly increased the likelihood that an inmate was categorized in the High Violence Group [age level Wald Statistic (1, $N = 152$) = 9.97, $p < .01$; Antisocial Positive Screen Wald Statistic (1, $N = 152$) = 7.08, $p < .01$]. The presence of a positive screen for Antisocial Personality Disorder and an age level less than 32 years each tripled the odds that a woman would have been classified within the High Violence category.**

Additional Relevant Sources Supportive of H9 – Abstracts Provided

1. Blackburn, R., & Coid, J. W. (1999). Empirical clusters of DSM-III personality disorders in violent offenders. *Journal of Personality Disorders, 13*, 18-34.

164 violent male offenders in a maximum security hospital and special units in prisons were interviewed with the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders-III (DSM-III) Axis II disorders (SCID-II). Cluster analysis of the personality disorder criteria sets identified six diagnostic patterns: (1) antisocial-narcissistic; (2) paranoid-antisocial; (3) borderline-antisocial-passive-aggressive; (4) borderline; (5) compulsive-borderline; and (6) schizoid. Offenders in the first three groups had more extensive criminal careers, and most were identified as psychopaths by the Psychopathy Checklist-Revised. These groups also had more frequent lifetime histories of substance abuse. A history of affective and anxiety disorders was more common in Groups 3 and 5, and almost two thirds of Group 2 had a history of psychotic disorder. The results emphasize that dangerous offenders are heterogeneous in personality pathology. They also suggest that personality disorder among violent offenders is more commonly represented by recurring patterns of covarying traits than by single categorical entities proposed in the DSM classification.

2. Bonta, J., Law, M., & Hanson, K. (1998). The prediction of criminal and violent recidivism among mentally disordered offenders: A meta-analysis. *Psychological Bulletin, 123*, 123-142.

A meta-analysis was conducted to examine whether the predictors of recidivism for mentally disordered offenders are different from the predictors for nondisordered offenders. Effect sizes were calculated for 35 predictors of general recidivism and 27 predictors of violent recidivism drawn from 64 unique samples. The results showed that the major predictors of recidivism were the same for mentally disordered offenders as for nondisordered offenders. Criminal history variables were the best predictors, and clinical variables showed the smallest effect sizes. The findings suggest that the risk assessment of mentally disordered offenders can be enhanced with more attention to the social psychological criminological literature and less reliance on models of psychopathology.

3. Coid, J. W. (2002). Personality disorders in prisoners and their motivation for dangerous and disruptive behavior. *Criminal Behavior & Mental Health, 12*, 209-226.

Examined the associations between DSM-III, axis II, personality disorder, motivation and disruptive behavior in prisoners. Interviews were carried out with 81 prisoners (aged 22-53 yrs) in prison special units in England using research diagnostic instruments and an item sheet measuring disruptive behaviors and their motivations. Independent associations were established using logistic regression. Specific associations were established between psychopathy and axis II disorders with violent and disruptive behavior and motivations for these behaviors. The study supported a cognitive model explaining the functional association between personality disorder and antisocial behavior. Personality disorders act as predisposing factors influencing the development of motivations and subsequently facilitate the enactment of disordered behavior, in a linear progression. Assessment of personality disorder should be routine in disruptive and dangerous prisoners.

4. Fazel, S., & Grann, M. (2004). Psychiatric morbidity among homicide offenders: A Swedish population study. *American Journal of Psychiatry*, *161*, 2129-2131.

Objective: The authors examined psychiatric diagnoses of all individuals convicted of homicide and attempted homicide in Sweden from 1988 to 2001 ($N = 2,005$). Method: High-quality national crime and hospital registers were linked to investigate standardized psychiatric diagnoses of homicide offenders. Results: The presence or absence of psychiatric diagnoses was ascertained for 1,625 (81%) of the homicide offenders; 1,464 (90%) of these offenders had a psychiatric diagnosis. Twenty percent ($N = 409$) of all 2,005 offenders had a psychotic illness, and 54% ($N = 589$) of a subgroup of 1,091 offenders with information on secondary diagnoses had a personality disorder as a principal or secondary diagnosis. Only 10% of the offenders for whom psychiatric diagnostic information was available had no diagnosis. Conclusions: Using a comprehensive method for identifying psychiatric illness in homicide offenders, the authors found higher rates of psychiatric morbidity than previous studies. Their findings underline the importance of psychiatric assessment in homicide offenders and suggest that treatment might have a preventive role.

5. Hanson, R. K., & Bussière, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology*, *66*, 348-362.

Evidence from 61 follow-up studies was examined to identify the factors most strongly related to recidivism among sexual offenders. On average, the sexual offense recidivism rate was low (13.4%; $n = 23,393$). There were, however, subgroups of offenders who recidivated at high rates. Sexual offense recidivism was best predicted by measures of sexual deviancy (e.g., deviant sexual preferences, prior sexual offenses) and, to a lesser extent, by general criminological factors (e.g., age, total prior offenses). Those offenders who failed to complete treatment were at higher risk for reoffending than those who completed treatment. The predictors of nonsexual violent recidivism and general (any) recidivism were similar to those predictors found among nonsexual criminals (e.g., prior violent offenses, age, juvenile delinquency). Our results suggest that applied risk assessments of sexual offenders should consider separately the offender's risk for sexual and nonsexual recidivism.

6. Hodgins, S., Lapalme, M., & Toupin, J. (1999). Criminal activities and substance use of patients with major affective disorders and schizophrenia: A 2-year follow-up. *Journal of Affective Disorders*, *55*, 187-202.

Examined criminal activity and substance use of 30 male patients (aged 18-55) with major affective disorders and 74 with schizophrenia in a 2 yr follow-up study. At discharge, Ss were intensively assessed including diagnoses using Schedule for Schizophrenia and Affective Disorders and Research Diagnostic Criteria. During follow-up, alcohol and drug use were measured, subjectively and objectively. At discharge, the 2 groups were similar as to secondary diagnoses of antisocial personality disorder, drug abuse/dependence, socio-demographic characteristics, and criminal history, but more of the patients with major affective disorders than those with schizophrenia had a history of alcohol abuse/dependence. During the follow-up period, the 2 groups were similar as to rehospitalization, treatment intensity, and substance use. By the end of the follow-up period, 33% of the Ss with major affective disorders and only 15%

of those with schizophrenia had committed crimes, most violent. Co-morbid antisocial personality disorder was associated with criminality among the Ss with schizophrenia but not among those with major affective disorders. Among these latter Ss, drug use and the intensity of outpatient care were associated with violent criminality.

7. Longato-Stadler, E., von Knorring, L., & Hallman, J. (2002). Mental and personality disorders as well as personality traits in a Swedish male criminal population. *Nordic Journal of Psychiatry*, 56, 137-144.

Describes personality traits and the presence of personality disorders and mental disorders in a consecutive series of 130 male prisoners in Swedish jails sentenced for serious criminality. The investigation included a psychiatric examination by means of the Structured Clinical Interview as well as information taken from criminal records. Personality assessments were made by means of self-report questionnaires, the Karolinska Scales of Personality (KSP), and the DSM-IV and ICD-10 Personality Disorder Questionnaire. The most common mental disorders were alcohol and drug abuse/dependence, which were present in 55% of Ss. Personality disorders were also common, being present in 56% of Ss. In the KSP, high scores were found in scales related to impulsiveness, sensation seeking, nervous tension and distress, cognitive-social anxiety, hostility and aggression. Very low scores were found in the Socialization scale, reflecting a high degree of psychopathy-related personality traits. Despite the high morbidity, the global level of functioning was unexpectedly high. The prisoners sentenced for heavy criminality had a high degree of both mental disorders and personality disorder.

8. Lynam, D. R., Leukefeld, C., & Clayton, R. R. (2003). The contribution of personality to the overlap between antisocial behavior and substance use/misuse. *Aggressive Behavior*, 29, 316-331.

The present study tested the ability of the Five Factor Model (FFM), a general model of personality functioning, to account for the stability across time of antisocial behavior (ASB) and substance use/misuse (SUM), and the correlation between ASB and SUM at a given time. Data from a community-community based longitudinal study of 481 men and women were examined. Specifically, we examined relations based among substance use and conduct problems through the 10th grade, lifetime symptoms of substance abuse and dependence, adult symptoms of antisocial personality disorder through age 21, and a measure of the FFM. Results were virtually identical for men and women. Personality traits accounted for relatively large proportions of the variance in ASB and SUM with R^2 ranging from .19 for early SUM to .30 for early ASB. Additionally, personality profiles of the four measures were highly similar, with similarity coefficients ranging from .87 to .97. Finally, the inclusion of common personality correlates reduced the relations between the four measures by between 13% (early ASB and SUM) and 29% (early and later SUM). It is concluded that personality, particularly the dimensions of Agreeableness and Conscientiousness, is important to understanding ASB and SUM.

9. Miller, J. D., Lynam, D. R., Widiger, T. A., & Leukefeld, C. (2001). Personality disorders as extreme variants of common personality dimensions: Can the five-factor model adequately represent psychopathy? *Journal of Personality, 69*, 253-276.

The present study examined Widiger and Lynam's (1998) hypothesis that psychopathy can be represented using the Five-Factor Model (FFM) of personality. Participants in the study consisted of 481 21-22-yr-old men and women who are part of an ongoing longitudinal study. Psychopathy was assessed by the degree of similarity between an individual's NEO-PI-R and an expert-generated FFM psychopathy prototype. The expert-based prototype supported the account of Widiger and Lynam, as did the correlations between the NEO-PI-R Psychopathy Resemblance Index (PRI) and the individual personality dimensions. The PRI was also related in predicted ways to measures of antisocial behavior, drug use, and psychopathology. The results support the contention that psychopathy can be understood as an extreme variant of common dimensions of personality, and underscore the utility of a dimensional model of personality disorders.

10. Peersen, M., Sigurdsson, J. F., Gudjonsson, G. H., & Gretarsson, S. J. (2004). Predicting re-offending: A 5-year prospective study of Icelandic prison inmates. *Psychology, Crime & Law, 10*, 197-204.

The study investigates differences in psychological, offending history, and substance use variables between desisters and recidivists among 461 Icelandic prison inmates, who were followed up 5 years after their release from prison. Almost half (48%) of the sample were re-convicted during the 5-year period and had received one or more prison sentences. Recidivists scored significantly lower than desisters on the Gough Socialization Scale, and desisters scored significantly higher on Self-Deception and Other-Deception Questionnaires. Recidivists had more extensive offending history, and had reported more substance use than desisters. A discriminant function analysis was performed in order to investigate which variables discriminated best between desisters and recidivists. The results indicate that offending history variables and low other-deception, discriminated best between the two groups. The results emphasize the importance of previous criminal history and antisocial personality traits as risk factors and impression management or social desirability as a protective factor.

11. Samuels, J., Bienvenu, O. J., Cullen, B., Costa, P. T. J., Eaton, W. W., & Nestadt, G. (2004). Personality dimensions and criminal arrest. *Comprehensive Psychiatry, 45*, 275-280.

Previous studies have implicated antisocial personality disorder in criminal behavior, but little is known about the association between "normal" personality dimensions and arrest. We investigated the relationships between these personality dimensions and prior arrest in a sample of adults participating in a longitudinal epidemiological study. Between 1993 and 1999, psychiatrists re-examined subjects who were originally interviewed in Baltimore in 1981 as part of the Epidemiologic Catchment Area study; the psychiatrists diagnosed Axis I and Axis II disorders according to DSM-IV criteria. A total of 611 subjects also completed the Revised NEO Personality Inventory (NEOPI-R), which assesses five broad factors and 30 facets of normal personality. History of criminal arrest in Maryland in the period 1981 to 1993 was determined from the state criminal justice database. Student's *t* test and logistic regression were used to evaluate relationships between NEO personality scores and prior arrest. Controlling for

demographic characteristics, alcohol or drug use disorders, and DSM-IV personality disorder scores, the odds of prior arrest increased with scores on angry hostility, impulsiveness, and excitement-seeking dimensions. Prior arrest was inversely related to scores on trust, straightforwardness, compliance, modesty, dutifulness, and deliberation dimensions. The results suggest that specific dimensions of normal personality are related to criminal arrest in the community.

12. Tardiff, K., Marzuk, P. M., Leon, A. C., & Portera, L. (1997). A prospective study of violence by psychiatric patients after hospital discharge. *Psychiatric Services, 48*, 678-681.

Assessed the frequency of violence by patients from a psychiatric hospital and identified characteristics of patients with an increased risk of violence after discharge. 763 patients (aged 18-59 yrs) in a private university psychiatric hospital provided self-reports of past violence, and violence while in the hospital was assessed by routine nurse ratings. Ss were telephoned 2 wks after discharge to assess violence since discharge. 16 of 430 Ss who were interviewed by telephone 2 wks after discharge reported violence against persons since their discharge. Ss who were violent 1 mo before admission were 9 times more likely to be violent in the 2 wks after discharge, compared with Ss who were not violent before admission. Ss with a personality disorder were 4 times more likely than Ss without a personality disorder to be violent after discharge. The targets of violence were often family members or other intimates and often the same persons attacked before hospitalization. Ss who were violent just before admission were more likely to be violent after discharge and to attack the same persons they had attacked in the past. The authors suggest that clinicians should routinely evaluate past violence and work with the patient and potential targets of violence to prevent future violence.

13. Villemarette-Pittman, N. R., Stanford, M. S., Greve, K. W., Houston, R. J., & Mathias, C. W. (2004). Obsessive-compulsive personality disorder and behavioral disinhibition. *Journal of Psychology: Interdisciplinary & Applied, 138*, 5-22.

Although obsessive-compulsive personality disorder (OCPD) is an Axis II diagnosis that is not commonly associated with behavioral disinhibition, the literature contains reports of occasional explosive aggressive outbursts. Existing explanations of OCPD etiology do not address the coexistence of compulsive and impulsive features witnessed in some subpopulations of patients. In this study, the authors present a compensatory theory of OCPD in an effort to explain clinical observations of an unexpectedly large number of OCPD diagnoses among patients clinic referred and self-referred for aggression problems.

Narrative Review of H9

1. Nestor, P. G. (2002). Mental disorder and violence: Personality dimensions and clinical features. *American Journal of Psychiatry*, 159, 1973-1978.

Examines the role of personality dimensions in the greater rates of violence that have now been established to accompany certain classes of mental disorders. Empirical studies are reviewed that have often used objective measures of personality and epidemiological samples with low levels of subject selection biases. The risk of violence may be understood in terms of four fundamental personality dimensions: 1) impulse control, 2) affect regulation, 3) narcissism, and 4) paranoid cognitive personality style. Low impulse control and affect regulation increase the risk for violence across disorders, especially for primary and comorbid substance abuse disorders. By contrast, paranoid cognitive personality style and narcissistic injury increase the risk for violence, respectively, in persons with schizophrenia spectrum disorders and in samples of both college students and individuals with personality disorders. This review supports the hypothesis that these four fundamental personality dimensions operate jointly, and in varying degrees, as clinical risk factors for violence among groups with these classes of mental disorders.

H10 Prior Supervision Failure

1. Milton, J., Amin, S., Singh, S.P., Harrison, G., Jones, P., Croudace, T., Medley, I., & Brewin, J. (2001). Aggressive incidents in first-episode psychosis. *British Journal of Psychiatry*, 178, 433-440.

→ Community Aggression (not necessarily physical violence)

* Article summary also appears under Items H3, H4, and H10

This study examined acts of aggression in first-episode psychosis. The sample comprised 168 consecutively admitted patients (16-64 years old) with a psychotic illness making first contact with psychiatric services in Nottingham (UK) between 1 June 1992 and 31 May 1994. All participants met the criteria for psychosis in the Screening Schedule for Psychosis. The Schedules for Clinical Assessment in Neuropsychiatry (SCAN) interview was used to derive symptom ratings at baseline. When direct interviews were not possible, symptoms were rated using the Item Group Checklist (IGC). Personality was assessed using the Personality Assessment Schedule (PAS) and clinical consensus Axis II diagnoses for ICD-10.

Follow-up assessments occurred between June 1995 and May 1997, as close as possible to three years after first contact. At that time, 143 interviews were completed with participants; data collection for the remainder of the participants was completed using clinical material. Informed consent to examine participants' records and to interview their informal carers was obtained.

Offending behavior (self-reported violence, previous arrests, convictions, and imprisonment for violence) was recorded from the Psychiatric and Personal History Schedule, follow-up assessments, psychiatric, community mental health team and general practitioner records, and legal reports where available. Severity of violence was classified by adapting the two-point scale from the MacArthur Community Violence Instrument wherein *serious aggression* includes weapon use or threat, sexual assault or any other violence with injury to a victim and *lesser aggression* included all other acts. Timing of aggression was categorized into three periods: Period A represented the period before onset of any symptoms, Period B represented the clinical 'best estimate' of the duration of untreated illness (DUI), and the end of period C was defined as 3 years after the date of contact with psychiatric services.

With reference to HCR-20 Item H1, there was over a five-fold increase in the risk for aggression (although not necessarily physically violent aggression) among patients with previous violent convictions (OR = 5.6, 95% CI = 1.8 – 16.9, $p < .001$).

With reference to HCR-20 Item H3, the risk for aggression (although not necessarily physically violent aggression) was twice as high among patients who were single (OR = 2.2, 95% CI = 1.1 – 4.6, $p < .05$).

With reference to HCR-20 Item H4, there was almost a four-fold increase in the risk for aggression (although not necessarily physically violent aggression) among patients who were unemployed (OR = 3.7, 95% CI = 1.8 – 7.7, $p < .001$).

With reference to HCR-20 Item H10, high rates of absconding from inpatient care was characteristic of participants who exhibited aggression (although not necessarily physically violent aggression) after service contact (34.3%; OR = 16.6, 95% CI = 4.9 - 55.9).

2. Ryan, J. E. (1997). Who gets revoked? A comparison of intensive supervision successes and failures in Vermont. *Crime & Delinquency*, 43, 104-118.

This study investigated differences between offenders who succeeded or failed while on furlough in preparation for release from incarceration in Vermont. Participants were all 823 offenders placed on furlough during 1992 and 1993 and who had at least one reclassification (from an initial classification as being 'community eligible') according to Vermont's reclassification instrument. This instrument is based on a model developed by the National Institute of Corrections that was adopted by Vermont in 1983 and subsequently modified slightly in 1989. It assesses history of escape, institutional misconduct, and criminal behavior. The sample included both individuals whose current offence was a minor crime and were judged as needing little or no treatment (15%), as well as individuals who were violent felons with serious treatment needs (11%). Demographic details about the sample were not provided.

Three sources of outcome data were used: the classification instrument; monthly reports submitted by field offices that included information about supervisory activity and outcomes; and a 12-item needs assessment completed by a caseworker. Length of follow-up was not specified.

Thirty-four percent of the sample had their furloughs revoked (resulting from 279 revocations). Most revocations were for substance use (33%), followed by charges for escape or being "out of place" (59%). Of all furlough revocations, less than five percent were sustained because of activity that resulted in a criminal conviction. Results of univariate analyses indicated that, compared to those unsuccessful on furlough, successful completers were slightly older, had steady employment, had a *higher* need in the area of sexual dysfunction, and were more likely to have a history of drug abuse. Having a history of alcohol abuse did not differentiate groups. Individuals with a prior history of misdemeanor assault or property felony were more likely to fail on furlough. Prior felony status also differentiated those who were successful or failed on furlough: those with two or more felonies were more likely to be revoked than individuals without such a history.

Of relevance to H10, negative institutional behavior was associated with furlough revocation. Fifty-four percent of individuals with a history of institutional violence were revoked, whereas 32% with no such history were revoked. Similarly, 62% of persons with two or more disciplinary reports during a 90-day period were revoked, whereas 27% with no recent history of disciplinary reports were revoked. Finally, 42% of offenders with a history of escape (in this study, operationalized as nonviolent departures from work crews or escort) failed on furlough, whereas 32% of individuals without such a history were revoked.

C1 Lack of Insight

1. Arango, C., Barba, A. C., González-Salvador, T., & Ordóñez, A. C. (1999). Violence in inpatients with schizophrenia: A prospective study. *Schizophrenia Bulletin*, 25, 493-503.

→ Inpatient Violence

A prospective study design was used to evaluate a number of variables in the prediction of violence in schizophrenic or schizoaffective disordered patients. Data were collected at a short-term psychiatric unit in a general hospital in Madrid. Subjects were 70 consecutively admitted patients with a diagnosis of schizophrenia or schizoaffective disorder (DSM-IV criteria) during May – September 1996 whose inpatient treatment lasted at least 3 days. The final sample ($N = 63$) consisted of 46 men and 17 women. The mean age of the sample was 35.2 years ($SD = 10.8$ years). At admission, 46% displayed some sort of aggressive behavior, including: verbal aggression or physical aggression against objects, self or others.

Psychopathology and insight were assessed within 24 hours after admission and again 24 hours before discharge. Also prior to discharge, neurological soft signs were evaluated and a sociodemographic and clinical protocol was administered. All scales were administered by the same person who was blind to whether participants were assigned to the violent or the nonviolent group. Charts were reviewed daily and information was obtained from the patient, family, previous records, attending psychiatrist, and nursing staff. Psychopathology was assessed with the Spanish version of the Positive and Negative Syndrome Scale. Neurological signs were assessed with the Neurological Evaluation Scale. Insight was assessed with the Scale of Unawareness of Mental Disorder (SUMD). The SUMD allows independent assessments of degrees of insight into presence of a mental disorder, need for treatment, social consequences of mental disorder, and specific signs and symptoms. Scores range from 1 to 5; higher scores indicate less awareness.

Trained nursing staff used the Overt Aggression Scale (OAS) to make prospective assessments of aggression during the study period. Four categories of aggressive behavior were coded: verbal aggression, aggression against objects, physical aggression against self, and physical aggression against others. Violent behavior in the week prior to admission was assessed retrospectively from information obtained from the patient, relatives, and police or other sources of referral at admission.

Twenty-six incidents met the criteria for violent episodes (OAS score of 3, 4, or 5). Sixteen (25.4%) of the patients were physically violent toward others during hospitalization. In the week prior to admission, 29 patients were violent, mostly in the home (92.5%) and against parents (34.6%), other family members (17.2%) or self (13.7%). A significant correlation was found between physical violence against others performed in the week prior to admission and violence against others during hospitalization ($r = .39$, $p < .05$). Despite this relationship, of the 16 patients who were violent during hospitalization, 7 were not violent in the week before admission and 8 who were violent before admission were not violent while hospitalized.

Of relevance to HCR-20 item C1, patients demonstrated poor insight in all dimensions assessed on admission. Violent patients had significantly less insight into delusions ($z = -.26$, $p < .01$), greater thought disorder ($z = -2.62$, $p < .01$), poorer control of aggressive impulses ($z = -2.22$, $p < .05$), and a poorer total score ($t(61) = -4.18$, $p < .001$). A trend toward significance was also present for insight into hallucinations ($z = -1.85$, $p = .07$) and confusion/disorientation ($z = -1.85$, $p = .06$). Despite improvement during hospitalization, violent patients continued to have significantly poorer awareness at discharge. Single-variable logistic regressions resulted in correct classification of 74% to 79% of the patients in the violent and nonviolent groups. Insight into psychotic symptoms was the best single predictor (compared to PANSS symptoms and total scores and to violence during the week before admission) and had the highest total predictive and positive predictive values (79.4% patients correctly classified, $\chi^2 = 11.46$, $p < .001$).

2. Buckley, P.F., Hrouda, D.F., Friedman, L., Noffsinger, S.G., Resnick, P.J., & Camlin-Shingler, K. (2004). Insight and its relationship to violent behavior in patients with schizophrenia. *American Journal of Psychiatry*, *161*, 1712-1714.

→ Community Violence

The authors studied the relationship between lack of insight and illness attributes in violent patients with schizophrenia. A sample of nonviolent patients served as a comparison group. The violent sample ($n = 115$) was drawn from a county jail, a court psychiatric clinic, and two community mental health centers in Cleveland. Participants mainly were African American (80%) men (82%). Violence was defined as direct physical aggression against a person or property (and not merely the threat of violence) for which legal charges were incurred. Participants in the non-violent comparison group ($n = 111$) also mainly were African American (73%) men (76%).

All patients were evaluated for current symptoms (with the Positive and Negative Syndrome Scale; PANSS), for cognitive functioning (with the Mini-Mental State Examination and the Trail making A and B tests), and for psychosocial functioning (with the Heinrich-Carpenter Quality of Life Scale).

Insight into illness was assessed with the insight item of the PANSS as well as four items (awareness of mental disorder, awareness of achieved effects of medication, awareness of social consequences of mental illness, and awareness of social consequences of mental illness) that were derived from the Scale to Assess Unawareness of Mental Disorder (SAUMD). Insight into legal complications of illness (“forensic insight”) was assessed in the violent cohort on three items (concern about becoming ill, relationship of illness to crime, and acceptance of responsibility for crime) on the Eisner Scale (a scale developed to assess discharge readiness of forensic patients). Additional data were collected from file review, patient interviews, as well as forensic and collateral source documents.

Mann-Whitney parametric tests were used to compare the violent and non-violent groups. Of relevance to HCR-20 item C3, the majority of violent patients showed active symptoms (78%) at the time of the violent incident and 55% were abusing substances at that time.

Of relevance to HCR-20 item C1, compared to nonviolent patients, violent patients had significantly greater deficits in insight (71% scored 4 [moderate deficit] or more and 12.5% scored 7 on the PANSS item). Violent patients had significantly greater deficits than nonviolent patients on the PANSS insight item (violent $M = 4.3$, $SD = 1.8$; nonviolent $M = 2.7$, $SD = 1.7$; $F = 45.8$, $df = 1, 219$, $p < .001$). Violent patients also demonstrated significantly greater deficits than nonviolent patients on the three SAUMD items: (1) awareness of mental disorder (violent $M = 2.2$, $SD = 1.5$; non-violent $M = 1.5$, $SD = 1.0$; $F = 14.9$, $df = 1, 219$, $p < .001$); (2) awareness of achieved effect of medication (violent $M = 2.7$, $SD = 1.6$; non-violent $M = 1.8$, $SD = 1.2$; $F = 21.4$, $df = 1, 219$, $p < .001$); and (3) awareness of social consequences of mental disorders (violent $M = 3.3$, $SD = 1.6$; non-violent $M = 1.9$, $SD = 1.2$; $F = 53.7$, $df = 1, 219$, $p < .001$).

3. McNiel, D.E., Eisner, J.P., & Binder, R.L. (2003). The relationship between aggressive attributional style and violence by psychiatric patients. *Journal of Consulting and Clinical Psychology*, 71, 399-403.

→ Community Violence

*Article summary also appears under Item C4

The authors investigated whether indicators of an aggressive attributional style were associated with increased rates of community violence committed by patients shortly before admission to hospital. Participants were recruited between November 1995 and June 1996 from a short-term civil psychiatric inpatient unit. Participants were asked to fill out a number of questionnaires, including: the Novaco Anger Scale-Part A (NAS-A); the Psychiatric Epidemiology Research Interview – Psychotic Symptoms subscale; the MMPI-2 Paranoia scale, Persecutory Ideas subscale; the External Hostile Attribution Scale (EHAS); and the Barratt Impulsiveness Scale (BIS-11). In light of the hypothesis that impulsiveness coupled with an aggressive attributional style may increase risk, the BIS-11 was included in the present study to account for the contribution of impulsiveness in the study group.

Violence was measured with a self-report paper and pencil measure that was adapted from the MacArthur Community Violence Instrument. Violence was operationalized as a report of any act of physical aggression against another person, or as threatening others with a lethal weapon within the past 2 months. Demographic information and clinical diagnoses were obtained from participants' medical charts.

Patients were not eligible for participation until 3 days after admission or later, when they were sufficiently stable to participate. Of 402 consecutive admissions, 346 patients were eligible and 141 patients agreed to participate. The final sample consisted of 110 patients who completed the study. Fifty-nine percent of the patients were men and 41% were women. The racial distribution

of the sample was: 59% White, 21% African American, and 20% 'other.' The mean age was 40.7 years ($SD = 13.6$ years; range: 18-84 years).

Kendell's tau correlations showed that violence was correlated with: NAS-A ($r = .42, p < .01$), TCO symptoms ($r = .28, p < .01$), MMPI-2 Paranoia Scale, Persecutory Ideas subscale ($r = .39, p < .01$) and EHAS ($r = .25, p < .01$). Impulsiveness was positively correlated with violence ($r = .16, p < .05$).

To characterize the relationship between violent behavior and the study's indicators of attributional style and control variables, four multivariate logistic regression analyses were conducted. Each analysis used each of the four indicators of attributional style as predictor variables. In each model, a forced-entry method was used to add control variables, including demographics, diagnosis, and impulsiveness. Sex and impulsiveness did not make an independent contribution to the prediction of violence in any of the models, so the models were recalculated without these variables to be parsimonious. **Even when demographic and diagnostic variables were controlled for, each indicator of attributional style made a statistically significant contribution toward prediction of violence: levels of anger ($\beta = .68, p < .001$); higher scores on measures of persecutory ideas ($\beta = .48, p < .01$), TCO symptoms ($\beta = .28, p < .05$), and external hostile attributions ($\beta = .30, p < .05$).**

4. Swanson, J.W., Swartz, M.S., Essock, S.M., Osher, F.C., Wagner, H. R., Goodman, L.A., Rosenberg, S. D., & Meador, K. G. (2002). The social-environmental context of violent behavior in persons treated for severe mental illness. *American Journal of Public Health*, 92, 1523-1531.

→ Community Violence

*Article summary also appears under Items H5 and H8

This study investigated to what degree different variables – victimization, exposure to trauma, substance abuse, homelessness, adverse social environments and treatment noncompliance - contribute, either independently or in convergence, to violent actions by persons with mental illness. Participants were part of a larger study investigating sexually transmitted diseases and risk behavior in people with severe mental disorders. The sample comprised adults with psychotic or major mood disorders who were receiving inpatient or outpatient services in public mental health systems in 4 U.S. states. The total sample of 802 participants provided complete data on violent behavior, victimization, and the demographic and clinical variables of interest. The majority of participants were men (65.1%) and White (46.8%; 44.8% African American; 3.3% Hispanic; 5.3% 'other'). Participants' mean age was 41.9 years ($SD = 9.9$ years). The proportions of major psychiatric diagnoses in the sample were: schizophrenia (44.8%), schizoaffective disorder (19.5%), bipolar disorder (16.9%), major depression (11.3%), and other serious disorders (7.0%). In addition, 45.4% had comorbid substance use disorders.

Violence was recorded for the previous year and was defined as any physical fighting or assaultive actions causing bodily injury to another person, any use of a lethal weapon to harm or to threaten someone, or any sexual assault. Information regarding violent behavior was obtained using an instrument developed in a Duke University study of the effectiveness of involuntary

outpatient commitment. These items yielded an index of violence comparable to that used in the MacArthur Violence Risk Assessment Study. Victimization was assessed by asking detailed questions about any experience of physical or sexual abuse occurring before and after age 16. Demographic information was obtained from the participants, including information about homelessness in the past year. The Exposure to Community Violence Scale was used to assess the degree of exposure to violence in their surrounding social environment. Information on clinical and institutional variables and the way in which they were assessed were as follows: psychiatric diagnoses (chart review and clinical data); observed psychiatric symptomatology (Brief Psychiatric Rating Scale); self-rated mental health status (single item 4-point scale); substance abuse (Dartmouth Assessment of Lifestyle Instrument); functional impairment (Global Assessment Scale); and medication noncompliance (participant queried regarding any prescribed psychiatric medication and frequency with which s/he was taking these medications, if at all).

Overall, the one-year prevalence (weighted) of violence in the entire sample was 13.6%. Homelessness, experiencing or witnessing violence, substance abuse, mood disorder, PTSD, lower severity ratings on the BPRS, poor subjective mental health status, early age of psychiatric illness onset, and psychiatric hospital admission were all associated with violence in the previous year in univariate analyses.

Of relevance to HCR-20 item H8, univariate analyses indicated that physical abuse prior to age 16 significantly increased the risk of violence (OR = 4.37, 95% CI = 2.57 – 7.42, $p < .0001$), but victimization after the age of 16 was even more strongly associated with violent behavior (OR = 7.99, 95% CI = 2.87 – 22.24, $p < .0001$). Results of a multivariate model that examined the effect of victimization on violence indicated that participants who were victimized as children, but not revictimized as adults, were not significantly more likely to behave violently in comparison with individuals who were never victimized (OR = 1.55, 95% CI = .40 – 5.94, $p = n.s.$). Those who were victimized as adults were significantly more likely to engage in violent behavior even if they were not victimized as children (OR = 3.63, 95% CI = 1.23 – 10.70, $p < .05$). However, those who were victimized both as children and later as adults were by far the most likely to behave violently toward others (OR = 12.87, 95% CI = 6.19 – 26.75, $p < .001$).

Results of a multivariate logistic regression model that examined the effects of clinical and institutional variables are of relevance to HCR-20 item H5, as substance abuse significantly increased the risk of violence and had the largest odds ratio of all variables in the model (OR = 4.32, 95% CI = 2.66 – 7.02, $p < .001$).

That model's results also provide support for HCR-20 item C1: self-rated mental health status of "poor" significantly increased the risk of violence (OR = 2.29, 95% CI = 1.33 – 3.94, $p < .001$).

5. Waldheter, E.J., Jones, N.T., Johnson, E.R. & Penn, D.L. (2005). Utility of social cognition and insight in the prediction of inpatient violence among individuals with a severe mental illness. *Journal of Nervous and Mental Disease*, 193, 609-618.

→ Institutional Violence

**Contradictory Findings

Data collection for the present study occurred on an inpatient unit of a large state hospital ($N = 29$). Hospital staff identified patients that were appropriate for the study based on current level of functioning (e.g., patient was not highly disorganized) and individual characteristics (e.g., being diagnosed with a severe mental illness). In addition to having a diagnosis reflecting a severe mental illness (i.e., schizophrenia-spectrum disorder, mood disorders, severe personality disorders), an additional eligibility criterion for study participation was having been on the ward for at least 3 months. Most participants were men (86%) and African American (86%; 14% White). The mean age was 33.1 years ($SD = 9.23$ years).

Patients who consented to participate were administered the following measures: Brief Psychiatric Rating Scale – Expanded Version (BPRS-E); Repeatable Battery for the Assessment of Neuropsychological Status (RBANS); Ambiguous Intentions Hostility Questionnaire (AIHQ); Internal, Personal, Situational Attributions Questionnaire (IPSAQ); Insight Scale (IS); and the Modified Overt Aggression Scale (MOAS).

Of particular relevance to HCR-20 item C1, the IPSAQ is a 32-item self-report questionnaire that assesses attributional style. It was developed to measure the degree to which individuals generate internal (something to do with the respondent), personal (something to do with another person), or situational (something to do with the situation or chance) causal attributions for both positive and negative events. A personalizing bias (PB) score is derived from participants' responses by dividing the number of personal attributions by the sum of both personal and situational attributions for negative events. A PB score greater than .5 indicates a greater tendency to make external-personal attributions for negative events. Research assistants independently coded participants' written responses on the IPSAQ (regarding perceived causality of a positive or negative event). Independent ratings were averaged together, and an average PB score was calculated for each participant.

Also of particular relevance to HCR-20 item C1, the Insight Scale (IS) is a self report measure that assesses insight into one's mental disorder and is composed of the following dimensions: one's recognition of illness, relabeling of psychosis, and recognition of the need for treatment. A low score on any of these dimensions indicates limited insight into one's disorder. A total score was derived for each participant by adding up individual item scores. Due to the high intercorrelations between the IS subscale and total scores ($r = .61 - .96$), the total score was used as the primary insight variable in all analyses.

Retrospective chart review was used to collect demographic and clinical information, as well as to document instances of participants' violent behavior over two observation periods: the 3 months prior to testing and 3 months posttesting.

Insight Scale total scores did not significantly predict violence frequency or severity in the 2 months posttest. In a hierarchical multiple regression model, with MOAS frequency of violence at 3 months posttest as the dependent variable, the following predictor variables were entered: (1) MOAS violence frequency from 3 months pretest, (2) gender and years of education, (3) BPRS-E affect and disorganization factor scores, (4) RBANS index scores, (5) AIHQ hostility bias for ambiguous situations and IPSAQ personalizing bias, and (6) IS total score. **The overall model was significant ($F [12, 11] = 4.910; p < .01$) and accounted for approximately 84% of the total variance. However, the total IS score was not statistically significant. In a second model with MOAS severity of violence from 3 months pretest as the dependent variable, total IS score contributed only 1% of variance to the model, which was not statistically significant ($F [1, 11] = 2.868; n.s.$).**

6. Yen, C., Yeh, M., Chen, C., & Chung, H. (2002). Predictive value of insight for suicide, violence, hospitalization and social adjustment for outpatients with schizophrenia: A prospective study. *Comprehensive Psychiatry*, 43, 443-447.

→ Community Violence

**Contradictory Findings

This prospective study explored the predictive value of insight for suicide, violence, hospitalization, and social adjustment for a group of schizophrenic outpatients over one year. The sample comprised 74 individuals with DSM-IV diagnoses of schizophrenia considered to be in remission or to have minimal psychopathology. Cases with comorbid mental retardation, substance use disorder or organic mental disorder were excluded. The sample was recruited from a medical center ($n = 42$) and a mental hospital ($n = 32$) in Southern Taiwan. Forty one patients were male and the mean age of the total sample was 32.9 years ($SD = 10$ years). The following measures were administered: Schedule of Assessment of Insight (SAI) and its expanded version (SAI-E), Positive and Negative Syndrome Scale (PANSS), Violence and Suicide Assessment Scale (VASA), and Community Life Scale (CLS). Participants were evaluated at baseline via a semi-structured interview and then assessed one year later. At the follow-up interview, participants were reassessed for suicidal and violent thoughts and behaviors, social adjustment in the community, and frequency of hospitalization in acute psychiatric wards. The necessary information for VASA and CLS ratings and confirmation of instances of hospitalization were gathered from patient interview and other sources.

At follow-up, one patient had committed suicide. **Of the 73 surviving patients, three had pushed or punched someone and eight had broken things in anger. Violent and nonviolent individuals did not have significantly different scores on the three SAI dimensions (treatment compliance, awareness of illness, and relabeling of psychotic experiences) or on the total SAI-E score.**

Additional Relevant Sources Supportive of C1 – Abstracts Provided

1. Eckhardt, C.I., Barbour, K.A. & Davidson, G.C. (1998). Articulated thoughts of maritally violent and nonviolent men during anger arousal. *Journal of Consulting and Clinical Psychology, 66*, 259-269.

The cognitive correlates of anger arousal were investigated in community-based samples of maritally violent (MV), maritally distressed-nonviolent (DNL), and maritally satisfied-nonviolent (SNV) husbands. Participants performed the Articulated Thoughts in Simulated Situations (ATSS) paradigm while listening to anger-arousing audiotapes. Trained raters coded for irrational beliefs, cognitive biases, hostile attributional biases, and anger control statements. Results indicated that MV men articulated significantly more irrational thoughts and cognitive biases than DNL and SNV men. MV men articulated more hostile attributional biases than DNL and SNV men across all ATSS scenarios. SNV men, however, articulated more anger control statements during ATSS anger arousal than MV or DNL participants. Discriminant function analyses indicated that specific thoughts discriminated between the groups and differentiated mildly from severely violent Ss. ATSS cognitive distortions (a) were not correlated with questionnaire measures of cognitive distortion, and (b) were superior to questionnaire measures in discriminating between the groups. The findings are interpreted in light of recent advances in understanding the relationship between information processing, anger, and marital aggression.

2. Foley, S. R., Kelly, B. D., Clarke, M., McTigue, O., Gervin, M., & Kamali, M., Larkin, C., O'Callaghan, E. & Browne, S. (2005). Incidence and clinical correlates of aggression and violence at presentation in patients with first episode psychosis. *Schizophrenia Research, 72*, 161-168.

This study aimed to identify the incidence and clinical correlates of aggression and violence in first episode psychosis. We prospectively recruited subjects with a first episode of DSM-psychosis presenting from a geographically defined catchment area to a secondary referral psychiatric service over a four-year period ($n = 157$). We used the Modified Overt Aggression Scale to retrospectively assess aggression (a hostile or destructive mental attitude, including verbal aggression, physical aggression and/ or violence) and violence (the exercise of physical force), blind to diagnosis. One in three patients with psychosis was aggressive at the time of presentation. One patient in 14 engaged in violence that caused, or was likely to cause, injury to other people. Aggression was independently associated with drug misuse (OR = 2.80, 95% CI = 1.12 - 6.99) and involuntary admission status (OR = 3.62, 95% CI = 1.45 - 9.01). Violence in the week prior to presentation was associated with drug misuse (OR = 2.75, CI = 1.04 - 7.24) and involuntary admission status (OR = 3.21, CI = 1.21 - 8.50). Violence in the week following presentation was associated with poor insight (OR = 2.97, CI = 1.03 - 8.56) and pre-contact violence (OR = 3.82, CI = 1.34 - 10.88). In patients with schizophrenia, violence in the week following presentation was associated with drug misuse (OR = 7.81, CI = 1.33 - 45.95) and high psychopathology scores (OR = 20.59, CI = 1.66 - 254.96). Overall, despite a high rate of verbal aggression, physical violence towards other people is uncommon in individuals presenting with first episode psychosis.

3. Mintz, A. R., Dobson, K. S., & Romney, D. M. (2003). Insight in schizophrenia: A meta-analysis. *Schizophrenia Research, 61*, 75-88.

There has been an increase in the study of insight in schizophrenia in the last 20 years. Insight is operationally defined according to five dimensions which include: the patient's awareness of mental disorder, awareness of the social consequences of disorder, awareness of the need for treatment, awareness of symptoms and attribution of symptoms to disorder. Despite the development of psychometrically sound measurement tools, the results from previous studies have been inconclusive regarding the nature of the relationship between insight and symptomatology. A meta-analysis of 40 published English-language studies was conducted to determine the magnitude and direction of the relationship, or effect size, between insight and symptom domains in schizophrenia and to determine moderator variables that were associated with the variations in effect sizes across studies. Results indicated that there was a small negative relationship between insight and global, positive and negative symptoms. There was also a small positive relationship between insight and depressive symptoms in schizophrenia. Acute patient status and mean age of onset of the disorder moderated the relationship between insight and symptom clusters.

4. Tzeng, H., Lin, Y., & Hsieh, J. (2004). Forecasting violent behaviors for schizophrenic outpatients using their disease insights: Development of a binary logistic regression model and a support vector model. *International Journal of Mental Health, 33*, 17-31.

This study explored the predictive value of disease insight for violent behavior for a group of Taiwanese schizophrenic outpatients over a one-year period. The Schedule of Assessment of Insight in Psychosis and its expanded version were used to provide a baseline insight score for sixty-three schizophrenic outpatients considered to be in remission or to have minimal psychopathology. A psychiatrist reassessed subjects at the end of the period to determine the predictive value of initial insight rating on the presence of violent behaviors. The binary logistic regression model was built first, which could explain 65.2 percent of the variance of patients' violent behavior tendency. Then, a support vector machine (SVM) was developed. After the training with cross validation, no misclassifications were found in the training data, and the average percentage of misclassification for the testing data was 23.8 percent, resulting in a 76.2 percent predictive power. These findings showed that SVM is more robust than a binary logistic regression model due to the good learning capability of an SVM for the nonlinear dependency between the input and output (also called outcome) variables.

4. Woods, P., Reed, V., & Collins, M. (2003). The relationship between risk and insight in a high-security forensic setting. *Journal of Psychiatric and Mental Health Nursing, 10*, 510-517.

It is often intimated amongst practitioners in mental healthcare that clients who display poor insight either into their mental health or behavior present a greater risk either to themselves or others. This paper reports relationships found between the risk and insight subscales of the Behavioral Status Index. This is an instrument designed specifically for healthcare practitioners to measure health functioning amongst mental health clients, in particular those in forensic mental healthcare. Data were collected, using a repeated measures method by primary nurses, from a sample of 503 patients in two high-security mental health hospitals. Seven factors

emerged through factor analysis. The first of these contained all the insight items. Significant differences were found on a number of factors between independent groups. Generally, results indicate that patients on lower dependency wards scored more normatively on the factors, adding to instrument validity. Men were found to score more normatively than women. Clinical practice implications and ongoing European studies examining the use of the instrument in clinical practice and its association with treatment planning are discussed.

Additional Relevant Sources for C1 – Contradictory Findings – Abstract Provided

1. Carroll, A., Pantelis, C., & Harvey, C. (2004). Insight and hopelessness in forensic patients with schizophrenia. *Australian and New Zealand Journal of Psychiatry*, 38, 169-173.

Aim of the article was to quantitatively explore the level of insight in forensic patients with schizophrenia, and its relationship to symptoms and to a history of violence. In addition, to test the hypothesis that scores in the insight domains of 'compliance' and 'awareness of illness' are positively correlated with scores on a self-report scale measuring hopelessness. The study consisted of a cross-sectional survey. Subjects were inpatients and outpatients in the rehabilitation service of the Victorian Institute of Forensic Mental Health. Twenty-eight patients with a diagnosis of schizophrenia and a history of serious offending consented to take part. Twenty-two of these had committed homicide. Measures were obtained for each on the Schedule for Assessment of Insight, the Positive and Negative Syndrome Scale for Schizophrenia and the Beck Hopelessness Scale. The mean insight score for forensic patients was 8.39. Mean insight scores in patients with schizophrenia with a forensic history do not differ significantly from those in non-forensic populations. Being more aware of being mentally ill may be a risk factor for hopelessness about the future. The limitations of the study are the small sample size, and the fact that it is confined to a relatively clinically stable population.

C2 Negative Attitudes

1. Hollin, C.R. & Palmer, E.J. (2003). Level of Service Inventory – Revised profiles of violent and nonviolent prisoners. *Journal of Interpersonal Violence*, 18, 1075-1086.

→ Community Criminality/Violence (not defined) – Mixed support

The LSI-R profiles of violent and nonviolent offenders serving sentences at six penal institutions in England were compared. Full conviction records were available for 251 individuals to whom the measure was administered (M age = 30.75 years, SD = 11.39). Almost half (49.6%) of the sample had a current conviction for a violent offense, with burglary (12.9%) and theft and handling stolen goods (9.5%) being the most common non-violent convictions.

A few minor changes in the wording of some items were required to facilitate the instruments use with an English, rather than North American, population. Offenders completed the adapted LSI-R at the point of reception into the prison as a part of the standard assessment procedure to inform risk assessment and sentence planning.

The sample was divided into a violent and a non-violent group on the basis of criminal history. Offenders who had never committed a violent act were placed in the nonviolent group (n = 61), whereas offenders with a conviction (historical or index) for violence were placed in the violent group (n = 190). The way in which violence was operationalized in the present study was not specified. As such, it is possible that the criterion variable may represent a heterogeneous grouping of offenses that is not limited to physically aggressive behaviors. The violent group was significantly younger (M = 29.03 years, SD = 10.98) than the nonviolent group (M = 36.13 years, SD = 11.08; t (249) = 4.39, p < .001). Age, therefore, was controlled for in all analyses.

Mean score comparisons indicated that the violent offenders scored significantly higher than the nonviolent offenders on LSI-R subscales that assess criminal history, education/employment, alcohol and drug problems, and companions. **Of relevance to HCR-20 item C2, no significant difference in mean scores between the violent and nonviolent offenders was observed for LSI-R subscale ‘attitude and orientation.’**

The LSI-R subscales were entered into a discriminant function analysis using a stepwise procedure to determine the best predictors of group membership (i.e., violent or not violent). **Results indicated that four subscales emerge as playing a significant role in the classification of violent prisoners, including the attitudes and orientation subscale (Wilke’s Λ = .232). Overall, the four subscales (education and employment, criminal history, alcohol and drug problems, and attitudes and orientation) had a significantly high level of predictive accuracy; a correct classification was produced in 97.3% of cases.**

Taken together, the present results offer mixed evidence in terms of whether procriminal attitudes and orientation have a significant association with violence. Whereas the subscale that assesses the construct directly did not differentiate violent from nonviolent offenders, the

subscale was one of four variables (and of 9 original competitors) that was part of a discriminant analysis model with high predictive accuracy.

2. Loza, W., & Loza-Fanous, A. (2003). More evidence for the validity of the Self-Appraisal Questionnaire for predicting violent and nonviolent recidivism: A five-year follow-up study. *Criminal Justice and Behavior*, 30, 709-721.

→ Community Violence

The Self-Appraisal Questionnaire (SAQ) is a 72-item self-report instrument that comprises eight subscales. The effectiveness of the SAQ in predicting release outcome was investigated over a five-year period. Participants were sampled from several federal correctional facilities in Ontario. The final sample comprised 305 male offenders in Ontario who completed the SAQ, were released into the community, and were followed up. The mean age of the sample at release was 30.69 years ($SD = 9.28$ years, range = 17 to 68 years). Most participants were Caucasian (79.4%; 8% African Canadians; 12.6% 'Other'). Seventy-five percent of the participants had been convicted for a violent offense (i.e., an offense against a person such as murder, kidnapping, rape, and assault) at least once (past or current). The nonviolent offenders were convicted of offenses such as property crime, robbery without violence, and driving while impaired.

Criterion measures consisted of failure in one or more of the following categories: (a) committed new offense – as documented by official records; (b) recidivism -- returning to any form of custody for any reason, such as parole violations, suspensions, or revocations of conditional release; (c) violent offense -- an offense against another person such as murder, rape, assault, or serious threat of violence; and (d) any failure -- any of the above categories as well as having been convicted of new charges, having obtained negative parole reports, and having committed a parole violation.

Offenders were followed up for 60 months post-release, with data collected every four months. Data were gathered from the Canadian Police Information Centre. Follow-up periods were terminated: (a) at the date offenders were “unsuccessful” on any of the postrelease criteria; (b) at the point where the offenders had reached 5 years from their release date; or (c) at the date of reviewing offender files for this study if the offenders had not completed 60 months of parole supervision. Forty percent of the offenders failed on the first year of their release, 5% in their second year, 2% in their third year, and 1% in the fourth year.

Correlations were calculated between the four post-release criterion measures and the SAQ indices (i.e., SAQ total score and 6 subscales). The total SAQ score and all its subscales correlated significantly with all four of the criterion measures. For the outcome of violent acts, r s ranged from .19 to .34, all p s < .001. **Of relevance to HCR-20 item C2 is the SAQ's Criminal Tendencies subscale, which was developed to assess antisocial attitudes, beliefs, behaviors, and feelings. The following statistically significant correlations were obtained across outcome variables for the Criminal Tendencies subscale:** new offense ($r = .30, p < .0001$); recidivism ($r = .30, p < .0001$); **violent acts** ($r = .29, p < .0001$); and any failure ($r = .28, p < .0001$).

Based on total SAQ scores, offenders were divided into three categories for analyses: low-risk group (SAQ total = 2 to 19); medium-risk group (SAQ total = 20 to 30); and high-risk group (SAQ total = 31 to 58). **Low-risk violent offenders had significantly lower mean scores on the Criminal Tendencies subscale ($M = 8.64$, $SD = 5.39$) compared to high-risk violent offenders ($M = 11.58$, $SD = 5.42$; $t(304) = 2.12$, $p < .05$).**

3. Williams, J.H., Van Dorn, R.A., Hawkins, J.D., Abbott, R., & Catalano, R.F. (2001). Correlates contributing to involvement in violent behaviors among young adults. *Violence & Victims, 16*, 371-388.

→ Community Violence

* Article summary also appears under Item R5

This study examined the extent to which gender, personality attributes, household, community, and environmental factors are associated with violent behavior in young adulthood. Data from the Seattle Social Development Project (SSDP) were reanalyzed. The sample comprised 765 ($n = 382$ women, $n = 383$ men) individuals who participated in a face-to-face interview during the winter and spring of 1996. The mean age of the participants at the time of the survey was 21 years. The following variables/constructs were measured (Cronbach's alpha): rebelliousness ($\alpha = .80$; measure noncompliant attitudes toward societal norms), sensation seeking ($\alpha = .64$), opportunities for antisocial involvement ($\alpha = .71$), social acceptability of antisocial behaviors ($\alpha = .60$), stressful life events ($\alpha = .54$), victimization ($\alpha = .62$), antisocial home environment ($\alpha = .71$), violent home environment, and community disorganization ($\alpha = .72$).

An index of the respondent's involvement in violent behavior was developed by averaging his/her responses to six questions (e.g., "Did you threaten someone with a weapon?")

Men reported a 21.4% rate of involvement in violence, as compared to women who reported a 9.4% rate ($\chi^2 = 21.061$, $p < .001$). Odds ratios for violence as a function of each variable were calculated for men and for women separately. **Of relevance to HCR-20 item C2, among men, both rebelliousness (OR = 2.16) and social acceptability of antisocial behaviors (OR = 2.11) significantly increased the risk for violence. However, for women, only rebelliousness significantly raised the risk for violence (OR=2.63).**

Hierarchical logistic regression was used to examine the independent association of gender (entered on step 1), rebelliousness (entered on step 2), sensation seeking (entered on step 2), opportunities for antisocial involvement (entered on step 3), social acceptability of antisocial behaviors (entered on step 3), stressful life events (entered on step 4), victimization (entered on step 4), antisocial home environment (entered on step 5), violent home environment (entered on step 5), and community disorganization with violent behavior (entered on step 6). Interactions between gender and the nine correlates were entered next (on step 7). Although gender initially was significant, after rebelliousness and sensation seeking were entered in Step 2 ($\chi^2 = 60.39$, $df = 2$, $p < .001$), gender no longer had a significant effect. Social acceptability of antisocial behaviors was entered in step 3 together with opportunities for antisocial involvement; doing so

improved the overall fit of the model ($\chi^2 = 35.09$, $df = 2$, $p < .001$) and each correlate was significant. This suggests that social acceptability of antisocial behaviors, in concert with rebelliousness, sensation seeking, and opportunities, are associated with violent behaviors and account for the majority of the gender effect. After entering stressful life events and victimization in step 4, **attitudes and opportunities remained significant and no improvement in the model was seen after this step.**

Additional Relevant Sources Supportive of C2 – Abstracts Provided

1. Dowden, C., & Andrews, D. A. (2000). Effective correctional treatment and violent reoffending: A meta-analysis. *Canadian Journal of Criminology*, 42, 449-467.

This meta-analysis examined whether the appropriate application of the principles of human service, risk, need, and responsivity within correctional treatment programs is associated with reduced levels of violent re-offending. Human service refers to human service delivery in the corrections context. Risk refers to matching corrections treatment to the risk level of the offender. Need refers to offender needs addressed in corrections treatment. Responsivity refers to characteristics of program delivery matched to the learning styles of offenders. Adherence to each of the 4 principles received empirical support, although not to a statistically significant degree in the case of risk. In addition, a composite measure, reflecting adherence to the four principles revealed the greatest mean reduction in violent recidivism. The principles of effective correctional treatment are discussed as key elements that should be considered in developing effective correctional interventions for reducing violent recidivism.

2. Gendreau, P., Goggin, C. E., & Law, M. A. (1997). Predicting prison misconducts. *Criminal Justice and Behavior*, 24, 414-431.

A meta-analysis was conducted on 39 studies that generated 695 correlations with prison misconducts. Predictors of prison misconducts were grouped into 16 domains as follows: (a) personal characteristics ($n = 9$), (b) situational factors ($n = 3$), and (c) actuarial measures of antisocial personality and risk ($n = 4$). Personal and situational variables were similar in their ability to predict prison misconduct. Within these two categories, antisocial attitudes and behavior (e.g., companions, prison adjustment), criminal history, and institutional factors were the strongest predictors. Among actuarial measures, an interview-based risk protocol produced the highest correlations with prison misconducts. The prediction of violent misconducts was associated with greater effect sizes than nonviolent misconducts. Despite the limitations of the database, several recommendations for assessing prison misconducts appear warranted.

3. Hanson, R. K., & Harris, A. J. R. (2000). Where should we intervene?: Dynamic predictors of sexual assault recidivism. *Criminal Justice and Behavior*, 27, 6-35.

Reports on information concerning dynamic (changeable) risk factors that were collected through interviews with community supervision officers and file reviews of 208 sexual offense recidivists and 201 nonrecidivists. The recidivists were generally considered to have poor social supports, attitudes tolerant of sexual assault, antisocial lifestyles, poor self-management strategies, and difficulties cooperating with supervision. The overall mood of the recidivists and nonrecidivists was similar, but the recidivists showed increased anger and subjective distress just before reoffending. The dynamic risk factors reported by the officers continued to be strongly associated with recidivism, even after controlling for preexisting differences in static risk factors. The factors identified in the interview data were reflected (to a lesser extent) in the officers' contemporaneous case notes, which suggests that the interview findings cannot be completely attributed to retrospective recall bias.

4. Mills, J.F., Anderson, D. & Kroner, D.G. (2004). The antisocial attitudes and associates of sex offenders. *Criminal Behavior and Mental Health, 14*, 134-145.

Introduction: Meta-analyses have demonstrated that attitudes and associates (peer group behavior) are among the best predictors of antisocial behavior in offender populations. Research on sex offender attitudes has typically focused on sex-related content and not antisocial attitudes in general. This study investigates the antisocial attitudes of sex offenders by comparing them with non-sex offenders on responses to the Measures of Criminal Attitudes and Associates (MCAA). Method: The MCAA comprises two parts. Part A is a quantified self-report measure of criminal friends. Part B contains four attitude scales: Violence, Entitlement, Antisocial Intent and Associates. Ninety sex offenders were compared with 119 non-sex offenders on their endorsement of the MCAA and criminal history. Results: Sex offenders endorsed fewer antisocial attitudes, reported fewer criminal friends and had fewer incarcerations than did non-sex offenders. Rapists endorsed antisocial attitudes more than did child molesters and incest offenders. However, these differences disappeared on controlling for age. A finding of fewer previous incarcerations among sex offenders was robust even controlling for age. Conclusion: The MCAA appears to be a reliable and valid instrument with sex offender samples. General antisocial attitudes appear to have a similar relationship with criminal history for both sex offenders and non-sex offenders, and should not be ignored in future studies or clinical practice. While a general sense of entitlement was not associated with sex offending per se, its stronger association with incarceration among sex offenders than non-sex offenders might suggest that this has the potential for identifying an important, perhaps more serious sub-group of sex offenders.

5. Mills, J.F. & Kroner, D.G. (2003). Antisocial constructs in predicting institutional violence among violent offenders and child molesters. *International Journal of Offender Therapy and Comparative Criminology, 47*, 324-334.

This study investigated the ability of self-reported antisocial constructs to predict serious institutional infractions among a correctional sample of child molesters ($n = 69$) and violent offenders ($n = 138$). Each group had significant predictors, but the predictors differed between the two groups. Interpersonal problems accounted for significant incremental variance after age in the relationship with institutional violence for child molesters. With the violent offender group, alienation and impulse expression showed significant incremental variance after accounting for age. Alienation and impulse expression also added to age in the relationship with the function of failure over time for the most institutionally disruptive. Implications for institutional classification and clinical use in an offender population are discussed

6. Polaschek, D. L. L., Collie, R. M., & Walkey, F. H. (2004). Criminal attitudes to violence: Development and preliminary validation of a scale for male prisoners. *Aggressive Behavior, 30*, 484-503.

Two studies report on the development and preliminary psychometric properties of a new scale measuring criminal attitudes to violence. In Study 1, the responses of a mixed sample of male prisoners were used to select 20 scale items from a larger pool. The final scale (the Criminal Attitudes to Violence Scale; CAVS) was designed so that it had a single-factor structure and was

uncorrelated with a measure of social desirability bias. It demonstrated high internal reliability, and a strong relationship to a self-report measure of physical aggression. Significant differences were found in CAVS mean scores for various offense history comparisons, such as whether or not the offender was currently on sentence for a violent conviction. In the second study, most results from the first study were replicated with an independent sample of male prisoners. Further, compared to another scale measuring attitudes to aggression [the EXPAGG Instrumental subscale; Archer and Haigh, 1997b], the CAVS was a better predictor of general attitudes to crime. Mean CAVS scores were again significantly higher for current violent offenders than those on sentence for other types of offenses. Lastly, the CAVS was moderately predictive of estimated risk of reconviction and re-imprisonment. Overall these results suggest that this scale measures the construct of attitudes to criminal violence, which partially overlaps two other constructs: attitudes to aggression and attitudes to crime.

C3 Active Symptoms of Major Mental Illness

1. Grisso, T., Davis, J., Vesselinov, R., Appelbaum, P.S., & Monahan, J. (2000). Violent thoughts and violent behavior following hospitalization for mental disorder. *Journal of Consulting and Clinical Psychology*, 68, 388-398.

→ Community Violence

This article reported on data obtained in the MacArthur Violence Risk Assessment study. The purpose of the study was three-fold: (1) to examine the prevalence of self-reported violent thoughts by patients hospitalized for mental disorders compared with nonpatients; (2) to examine the persistence of violent thoughts after discharge; and (3) to examine the relation between patients' violent thoughts while hospitalized and violent acts within 20 weeks after hospital discharge.

The Schedule of Imagined Violence (SIV) was one of several instruments administered as part of the study. The SIV is a structured set of eight questions with coded response categories. Questions 1 and 2 of the SIV were used to make a dichotomous split of the hospitalized patient sample at baseline and at each community follow-up (and of the Pittsburgh community nonpatient sample based on the single measurement point for that group). Patients were considered SIV positive (SIV +) at a given interview if they gave an affirmative response to the first question, which would indicate that they sometimes have daydreams or thoughts about physically hurting other people, and if they indicated on Question 2 that the last time this had happened had been at least within the past 2 months. Patients were classified SIV negative (SIV-) if they failed to meet either criterion.

At baseline, 339 of the 1,136 patients were SIV+. The SIV+ patient percentages were: 30% at baseline, 27% at follow-up 1, 28% at follow-up 2, 24% at follow-up 3, 22% at follow-up 4, and 21% at follow-up 5. The base rate of violence for the total hospitalized sample during the 20 weeks after discharge was 19%. **There was a statistically significant difference in base rates of violence between SIV- (16%) and SIV+ (26%) patients, $\chi^2(1, N = 939) = 14.88, p < .001$.** However, these rates were derived from non-White men and women, among whom those with SIV+ status were about 2.5 times more likely than SIV- patients to have engaged in a violent act after returning to the community.

Regarding diagnostic groups, SIV+ versus SIV- status at hospital baseline for patients with major depressive disorder, with or without alcohol/substance abuse, was not significantly related to violent behavior in the community. However, among patients with the diagnostic label 'other mental disorder and substance abuse,' SIV+ status patients were twice as likely to engage in violent behavior in the community. No significant relation was found between baseline SIV and violent behavior in the community for patients with low BPRS scores (18-29) at baseline. **Patients with medium (30-39), $\chi^2(1, N = 396) = 7.44, p < .01$, and high (40+), $\chi^2(1, N = 350) = 8.67, p < .01$, symptom severity scores on the BPRS and SIV+ status had higher rates of violence in the community that did SIV- patients in those groups.**

Some patients were classifiable as SIV+ nonpersistent ($n = 41$; reported SIV+ at hospital baseline but not at any community follow-up) or as SIV+ persistent ($n = 83$; reported SIV+ at baseline and at both follow-up 1 and at follow-up 2). Violent behaviors occurred at follow-up 1 or at follow-up 2 for 37% of the SIV+ persistent patients. This was about twice as great as the 17% rate at follow-up 1 or follow-up 2 for SIV+ nonpersistent patients, and the 15% rate for patients not classified as persistent, $\chi^2(1, N = 735) = 25.34, p < .01$.

The authors' interpretations of the results regarding symptom severity are **of relevance to HCR-20 item C3**. They stated, **“Whereas the patient group as a whole was more likely to report thoughts of violence toward others as compared with the community sample (as hypothesized), patients with greater severity of symptoms were more likely to have been imagining violence than were patients with low symptom severity. Moreover, non-White SIV+ patients were significantly more likely than SIV- patients to engage in violent behaviors after discharge only if they were in the medium and high symptom severity groups. In social-cognitive terms, greater stress associated with higher symptom severity restricts one's access to infrequently rehearsed cognitive scripts, leaving frequently rehearsed scripts involving harm to others to serve as the templates for responses to threatening situations”** (emphasis added).

2. Hodgins, S., Hiscocke, U.L., & Freese, R. (2003). The antecedents of aggressive behavior among men with schizophrenia: A prospective investigation of patients in community treatment. *Behavioral Sciences & the Law, 21*, 523-546.

→ Community Violence

The present study examined symptoms that preceded aggressive behavior while controlling for other known precursors. The sample comprised 128 men with schizophrenia who were discharged from forensic and general psychiatric hospitals and then followed for 12 months. Two weeks prior to discharge assessments were conducted to document social, criminal and psychiatric histories; mental disorders; personality traits; and childhood and adolescent functioning. Symptoms and risk of violence were assessed at discharge and symptoms were re-assessed 6 months after discharge. Aggressive behavior was documented from multiple sources.

Several types of information were collected at discharge. Sociodemographic and education factors were collected from the participant and from medical files. Information on previous mental health treatment was extracted from hospital files. Information on criminality was coded from official criminal files. Violent crimes were defined as all offenses causing physical harm, threat of violence or harassment, all types of sexual offense, illegal possession of firearms or explosives, all types of forcible confinement, arson, and robbery. Interview protocols developed by the MacArthur Risk Assessment Project were used to collect information on aggressive behavior over the lifespan. One interview was completed with the participant and another with a collateral source, usually the mother or an older sibling. Information on childhood factors was obtained from participants, collaterals, school, military, criminal, and medical files.

At discharge, primary, secondary, and tertiary diagnoses (both lifetime and current) were made using the Structured Clinical Interview for DSM-IV (SCID) for Axis I and Axis II disorders. Psychosocial functioning in the six months prior to discharge was assessed using the Global Assessment of Functioning Scale (GAF). Psychotic symptoms were assessed using the Positive and Negative Symptom Scale (PANSS). Anxiety was estimated using item G2 of the PANSS (possible range: 1-7; high anxiety indicated by scores ≥ 3). Threat and control-override (TCO) symptoms were assessed using the questions from the Psychiatric Epidemiology Instrument (PERI). Depression symptoms were assessed using the 21-item Hamilton Rating Scale for Depression (HRSD; presence of depression indicated by total scores ≥ 7). The PCL-R also was administered prior to discharge. All clinical measures were administered by psychiatrists.

Several types of information were recorded during the 12 month follow-up. Information on all treatments and services that the patient received was collected from participant files and from participants during interviews that occurred at 6 months and at 12 months after discharge. Information on aggressive behavior was collected from the participant, and a collateral source that had been in regular contact with the participant during the preceding 6 months provided information at both follow-ups. Aggressive behavior was defined in the same way as was done in the MacArthur Risk Assessment Project (e.g., pushing, shoving, threatening with a weapon, etc.). Finally, as at discharge, the PANSS, HRSD, and TCO symptoms were used to assess symptoms. The change in symptoms during the first 6 month period was defined as the rating at the end of the first 6 month period minus the rating at discharge.

The sample consisted of 106 men with a diagnosis of schizophrenia and 22 men with a diagnosis of schizoaffective disorder. Participants' mean age was 39.04 years ($SD = 11.31$ years). The majority of men were discharged from a forensic psychiatric hospital ($n = 91$) and 37 from a civil psychiatric hospital in four sites: Vancouver; Hessen, Germany; Finland; and Sweden. For each forensic patient included, a patient from a general psychiatric hospital in the same geographic region with the same sex, age (± 5 years), and principal diagnosis was recruited. The same information was collected as from the forensic patient.

Of the 128 participants, 9 (7%) behaved aggressively during the first 6 months after discharge, and 11 of 112 (10.2%; 16 patients were excluded at this time period due to hospital re-admittance) during the second 6 month period. Four participants behaved aggressively during both periods.

The symptom measures are prospective. Symptoms ratings at discharge were not significantly different for participants who did and did not behave aggressively in the first 6 months after discharge with the sole exception of a diagnosis of APD, $\chi^2(128) = 6.91, p = .01$. Of relevance to HCR-20 items H1, H5, and H7, neither the history of violent crime or aggressive behavior, diagnoses of alcohol and drug abuse and/or dependence, the total PCL-R score, the prevalence of participants obtaining a score of 25 or higher on the PCL-R, nor Cooke and Michie's three factors differed for the participants who were aggressive in the first 6 months after discharge and participants who were not aggressive.

Significantly higher mean scores for depression were obtained among participants who behaved aggressively during the second 6 month period ($M = 11.73, SD = 6.84$) as compared to those who

did not ($M = 6.98$, $SD = 5.30$; $t(112) = -2.74$, $p < .007$). Similarly, significantly higher mean scores for TCO symptoms were obtained among participants who behaved aggressively during the second 6 month period ($M = 3.45$, $SD = 3.42$) as compared to those who did not ($M = .81$, $SD = 1.85$; $t(76) = -2.53$, $p = .03$). Of the 9 participants who showed aggressive behavior during the first period, four reported medication non-compliance. However, only one person in the second period reported being non-compliant.

Of relevance to HCR-20 item H4, the non-aggressive participants were more likely than the aggressive patients to be living autonomously and to be employed, $\chi^2(110) = 7.48$, $p = .006$.

Of relevance to HCR-20 item H5, more of the participants who behaved aggressively in the second 6 month period than those with no reports of aggressive behavior reported drinking and taking drugs at the outset of this period, $\chi^2(106) = 3.89$, $p = .049$.

Symptoms measured at the beginning of each period were entered into logistic regression models to predict aggressive behavior in the subsequent 6 months; APD diagnosis was entered into the models as a control variable (because this diagnosis was the only static variable to distinguish the aggressive and non-aggressive groups). Of relevance to HCR-20 item H9, APD increased the risk of aggressive behavior 5.5-fold (95% CI = 1.37 – 22.21) in the first 6 month period and 4.9-fold (95% CI = 1.3 – 17.5) in the second 6 month period.

Of relevance to HCR-20 item H7, the PCL-R also was entered into the models as a control variable because it consistently has been found to be an excellent predictor of violence. Surprisingly, therefore, a PCL-R score of 25 or higher did not increase the risk of aggressive behavior in the first 6 month period (OR = 1.73, 95% CI = .19 – 15.64) or in the second 6 month period (OR = 1.34, 95% CI = .15 – 12.05). Similarly, and of relevance to HCR-20 item H5, the presence of past diagnoses of substance use disorders did not increase the risk of aggressive behavior in the first 6 month period (OR = 3.07, 95% CI = .37 – 25.50) or in the second 6 month period (OR = 2.35, 95% CI = .54 – 10.34).

Of relevance to HCR-20 item C3, for the first 6-month period, after entering the control variables, a diagnosis of APD, a PCL-R score of or greater than 25, and past diagnoses of substance use disorders, only the presence of a severe positive symptom increased the risk of aggressive behavior four- to five-fold. No pattern of specific positive symptoms was evident. A similar pattern was found for the second 6-month period in that the presence of any severe positive symptom increased the risk of aggressive behavior from five- to 11-fold after controlling for other known predictors.

The presence of any TCO symptoms and an increase in TCO symptoms during the previous 6 months significantly increased the risk of aggressive behavior five- to 10-fold, after controlling for APD, a PCL-R score 25 or higher, and self-reported drug and alcohol use. Among the TCO symptoms, “feeling threatened” and “feeling your mind is controlled” were reported significantly more often by the aggressive than the non-aggressive patients.

Finally, and of relevance to HCR-20 items C5 and R4, the results from the logistic regression models indicates that after controlling for severe positive symptoms and/or TCO symptoms,

neither depot medication nor obligatory community care reduced the risk of aggressive behavior in either 6 month period.

3. Link, B.G., Stueve, A., & Phelan, J. (1998). Psychotic symptoms and violent behaviors: Probing the components of the “threat/control-override” symptoms. *Social Psychiatry & Psychiatric Epidemiology*, 33, S55-S60.

→ Community Violence

This study explored whether either of the components of the set of threat/control-override (TCO) psychotic symptoms predominates in explaining violence. Data were drawn from a two-stage epidemiological study conducted in Israel. The first stage involved interviewing 4914 people with the Psychiatric Epidemiology Research Interview (PERI). In the second stage, a subsample of respondents who completed the PERI was reinterviewed ($n = 2741$). This subsample comprised all persons who had screened positive for mental disorder as well as a sample of 18% of those who screened negative. These respondents were administered the Schedule for Affective Disorders and Schizophrenia (SADS) by psychiatrists. Analyses in the present study were based on the 2741 respondents minus persons who were not able to complete the PERI in the first stage ($n = 63$), which left 2678 respondents for the current sample.

Cases were weighted to take into account stratification based on gender, ethnicity, birth cohort, education, parental exposure to holocaust conditions (the sample was Israeli-born Jews), and the PERI screen. Violent behavior was assessed through self-report measures of fighting and weapon use in the 5-year period preceding the interview.

Psychotic symptoms were measured by the PERI and SADS. Three items from the PERI and two from the SADS constituted the measure of TCO symptoms. Specifically: (1) delusions of control (SADS); (2) persecutory delusions (SADS); (3) mind dominated by external forces (PERI); (4) thoughts put in head that were not your own (PERI); and (5) people wished to do you harm (PERI).

Each of the five items that measured an aspect of the threat/control-override symptom construct was related to the violent behaviors such that people experiencing the symptom were at substantially greater risk of having engaged in a violent behavior. **In a test of whether these measures could be considered equal in their predictive power, the authors found that two measures - measure of threat from the PERI (others wish harm) and a measure of control-override from the SADS (delusions of control) -independently predicted violent behaviors in logistic regression analyses.** The other three symptom measures were unrelated to violent behaviors above and beyond these two. This suggests the possibility of paring the symptoms in the threat/control-override index to include only the two that uniquely predicted violent behaviors. However, the authors further reported that they found that each of the five symptom measures/items was associated with violent behaviors at the bivariate level, and most of the predictive power was shared among the five.

4. McNeil, D.E., Eisner, J.P. & Binder, R.L. (2000). The relationship between command hallucinations and violence. *Psychiatric Services*, 51, 1288-1292.

→ Community Violence

One hundred and three psychiatric inpatients recruited from a short-term ward participated in this study that sought to describe the relationship between command hallucinations and violent behavior. Exclusion criteria were not being literate in English, had a diagnosis of dementia, were under 18 years of age, or had been hospitalized for less than four days.

The authors developed a series of questions with face validity concerning different types of hallucinations. Patients were asked to rate each item on a 5 point scale, considering their experiences over the past year. Other psychotic symptoms were assessed with the Psychiatric Epidemiology Research Interview (PERI), using only the 13 items that assessed positive psychotic symptoms. Subjects also were asked to rate their experience with these symptoms during the past year on a 5-point scale.

Violence was assessed using a questionnaire based on items from the MacArthur Community Violence Instrument. Violent behavior was operationally defined as a report of any act of physical aggression against other people or threatening others with a lethal weapon within the past two months. Social desirability was measured with the Marlowe-Crowne Social Desirability Scale. Finally, demographic and diagnostic characteristics were gathered from medical charts.

The sample comprised mostly men (59%) who were White (59.2%; 21.4% African American and 19.4% 'other.'). The mean age was 40.7 years ($SD = 13.6$ years). Forty-six patients reported that they had engaged in violent behavior during the two months before hospital admission. Thirty-one patients reported having heard voices telling them to hurt others during the past year (very often: $n = 4$, often: $n = 7$, sometimes: $n = 12$, almost never: $n = 8$). Twenty-three patients said they had complied with voices telling them to hurt other people, five said they complied often, nine reportedly complied sometimes, and nine said they almost never complied.

Patients who had command hallucinations to hurt others were significantly more likely to report a history of violence during the two months before hospitalization. Twenty-one of 31 patients (67.7%) who reported having heard voices telling them to hurt others also reported a recent history of violence, compared with 25 of 72 patients (34.7 percent) who had not had violent command hallucinations ($\chi^2 = 8.27$, $df = 1$, $p = .004$). Kendall's tau correlations showed that violence was associated with higher levels of psychotic symptoms as measured by the PERI (tau = .35, $p < .001$), presence of a substance-related disorder (tau = .24, $p < .02$), and male gender (tau = .23, $p < .03$). A forced entry logistic regression was conducted, in which the presence or absence of violence was predicted by the presence of command hallucinations to harm others, the presence of a substance-related disorder, age, sex, and score on the Marlowe-Crowne Social Desirability Scale.

Multivariate logistic regression analysis was used to determine the relationship between command hallucinations and violence when other correlates of violence also were taken into account. A forced-entry logistic regression in which violence (present or absent) was predicted

by the presence of command hallucinations to harm others, the presence of a substance related disorder, age, sex, and Marlowe- Crowne score. **Patients who experienced command hallucinations were more than twice as likely to be violent (Wald = 3.39, p (one-tailed) = .03; OR = 2.51).** Among the control variables, the presence of a substance- related disorder predicted violence, as did male gender and low levels of social desirability response bias.

To determine whether command hallucinations contributed to prediction of violence even when the analysis controlled for a diagnosis of a schizophrenic disorder or bipolar disorder, a subsidiary logistic regression analysis was conducted that included the presence or absence of these diagnoses. Under this model, command hallucinations continued to be a significant ($p < .05$) predictor of violence. This finding suggests that the relevance of command hallucinations to violence risk is not redundant with diagnosis. However, command hallucinations no longer made a significant contribution in determining violence risk over and above the other predictors in an additional logistic regression analysis that included the extent of any psychotic symptoms (as measured by the psychotic symptoms subscale of the PERI). The authors interpreted this finding as indicating that although command hallucinations did appear to be reliably associated with violent behavior, this association occurred in the context of other positive psychotic symptoms' also being associated with violence.

5. Stompe, T., Ortwein-Swoboda, G., & Schanda, H. (2004). Schizophrenia, delusional symptoms, and violence: The threat/control-override concept reexamined. *Schizophrenia Bulletin*, 30, 31-44.

→ Community Violence

The authors compared a sample of offenders with schizophrenia found to be not guilty by reason of insanity (NGRI) ($n = 119$) with a matched sample of nonoffending patients with schizophrenia ($n = 105$) regarding the frequency of TCO symptoms and their possible association with violent behavior. Participants in the NGRI group were patients in Austria's central high-security institution for male mentally ill offenders. Austrians who have committed a severe offense in causal connection with a mental disorder and who the courts find NGRI typically are sent to this institution. Patients at this hospital with diagnoses of schizophrenia and who had been delusional at any time during their illness were interviewed using the Schedule for Affective Disorders and Schizophrenia: Lifetime Version (SADS-L). Patients who met the DSM-IV criteria for schizophrenia were included in the study and further assessed regarding presence of substance abuse using the SADS-L.

A semi-structured questionnaire (Fregebogen zur Erfassung psychotischer Symptome [FPS]) was used to document delusional symptomatology. The FPS is subdivided into three sections: delusions, Schneiderian first rank symptoms, and hallucinations. The authors noted that their definition of TCO symptoms included only "clear persecutory delusions and the typical (schizophrenic) "passivity phenomena" and they highlighted that this comprised different definitions compared to definitions other researchers have used (e.g., Link & Stueve, 1994). The threat component of the TCO pair included two subtypes: being poisoned, hurt; and being

followed. Following the tradition of Kurt Schneider, the present authors defined the control-override component of TCO to include: made volition; made motions; made actions; made thoughts; and made emotions. In addition to and separate from the TCO symptoms, the authors examined a symptom pair (“thought shifting”) that comprised thought insertion and thought withdrawal. Two raters independently assessed TCO symptoms for 48 cases; Cohen’s kappa for the single items was .75 to .98, with the exception of made emotions (value not reported). Cohen’s kappa was .96 for the diagnosis of schizophrenia according to the SADS-L.

The social levels of origin were documented using the Soziale Selbsteinstufung, which is a scale developed to measure the prestige of the patients’ fathers’ professions. The three major classes that this scale defines are upper, middle, and lower.

Low violence included: verbal aggression; sexual offenses without physical injury of the victim; using a weapon without causing injury; and severe damage to property. High violence included: severe bodily injury; arson; murder; and attempted murder. The authors noted that sexual assaults that resulted in bodily injury to the victim should be classified as high violence. However, because the present sample included only four cases of sexual assault – none of which resulted in severe bodily injury – the authors retained sexual assault in the low violence category. Forty-seven offenders had committed low-severity offenses and 68 offenders had committed high severity offenses.

A control sample was drawn from the consecutive admissions to the Psychiatric Clinic of Vienna and an affiliated rehabilitation center for chronic schizophrenia patients. Patients with previous convictions were excluded from the control group. Furthermore, if any indication of (usually minor) forms of violence were discovered during the chart review process, the participant was excluded from the study. The control sample comprised 105 male schizophrenic patients matched within certain ranges for age, duration of illness, and schizophrenia subtypes. The same diagnostic assessment procedures were used for the offender and control groups, as was the period of recruitment (1994 to 1998). The SADS-L and FPS (to measure TCO symptoms) ratings were completed based on interviews and file review.

Regarding the prevalence of TCO symptoms in the offender and control groups, threat (feeling of being poisoned, hurt, or followed) was rated far more often than was the control-override. Within the control-override cluster, symptoms of thought shifting occurred more often than experiences of external influence on volition. There were no differences in prevalence between the offender and control groups either at the level of single symptoms or of cluster symptoms.

Differences in prevalence of TCO symptoms did emerge, however, when comparisons were made between the low- and high-violence groups. Again, threat was the symptom cluster reported most frequently. Threat symptoms were exhibited by 94.1% of the high-violence offenders and by 70.2% of the low-violence offenders, which was a statistically significant difference, $\chi^2 = 12.03, p < .001$. In contrast, whether control-override symptoms were considered separately or as a group, they were not associated with the severity of the offense. Despite the lack of significance observed for the control-override symptoms, the TCO cluster prevalence was significantly different in the high-violence (97.1%) and the low-violence (76.6%) offender groups, $\chi^2 = 11.61, p < .001$.

Three stepwise forward logistic regression analyses were completed: whereas neither social origin nor substance-related disorders separated the high- and low-violence groups, **inclusion of TCO symptoms in the model were significantly related to high violence (OR = 10.08, 95% CI = 2.18 - 48.00, $p < .01$)**. Another series of stepwise forward logistic regression analyses were conducted to analyze the influence of threat and control-override symptoms separately. Results indicated that the association between TCO symptoms and high violence was ascribed primarily to the threat component (OR = 6.78, 95% CI = 2.07 - 22.27, $p < .01$), whereas control-override demonstrated no statistically significant effect.

Additional Relevant Sources Supportive of C3 – Abstracts Provided

1. Arango, C., Calcedo Barba, A., González-Salvador, T., & Calcedo Ordóñez, A. (1999). Violence in inpatients with schizophrenia: A prospective study. *Schizophrenia Bulletin*, 25, 493-503.

Accurate evaluations of the dangers posed by psychiatric inpatients are necessary, although a number of studies have questioned the accuracy of violence prediction. This study evaluated several variables in the prediction of violence in 63 inpatients with a diagnosis of schizophrenia or schizoaffective disorder. Nurses rated violent incidents with the Overt Aggression Scale. During hospitalization, sociodemographic variables, clinical history, neurological soft signs, community alcohol or drug abuse, and EEG abnormalities did not differ between violent and nonviolent groups. Violent patients had significantly more positive symptoms as measured by the Positive and Negative Syndrome Scale (PANSS), higher scores on the PANSS general psychopathology scale, and less insight in the different constructs assessed. A logistic regression was performed to discriminate between violent and nonviolent patients. Three variables entered the model: insight into symptoms, PANSS general psychopathology score, and violence in the previous week. The model correctly classified 84.13% of the sample; this result is significantly better than chance for the base rate of violence in this study. At hospital admission, clinical rather than sociodemographic variables were more predictive of violence.

2. Bjorkly, S., & Havik, O. E. (2003). TCO symptoms as markers of violence in a sample of severely violent psychiatric inpatients. *International Journal of Forensic Mental Health*, 2, 87-97.

A sample of 39 patients (aged 17-45 yrs old) with a history of violence was assessed using the Revised Symptom Check List (SCL90-R). In addition to the patients' self-reports, an observer-rated SCL-90-R was obtained. The present study aimed to conduct an exploratory item analysis of SCL-90-R symptoms based on the findings from several studies that indicate that violence becomes more likely when mentally ill individuals feel threatened, and when their internal controls are compromised (TCO symptoms). Other aims were to examine the presence of TCO as compared to other delusions, and to look for possible sex differences, differences between violent subgroups, and differences between diagnostic groups concerning TCO symptoms. Furthermore, medical charts and police records were scrutinized to examine the immediate impact of TCO symptoms at the time of the actual violent act. We also wanted to explore possible discrepancies between observer ratings and self reports of TCO symptoms. Other delusions were stronger hallmarks of the patients' symptomatology than were TCO symptoms. However, over half of the patients had TCO symptoms as immediate precursors to the actual violent incident. Implications of the findings for violence risk assessment are discussed.

3. Buckley, P. F., Hrouda, D. R., Friedman, L., Noffsinger, S. G., Resnick, P. J., & Camlin-Shingler, K. (2004). Insight and its relationship to violent behavior in patients with schizophrenia. *American Journal of Psychiatry*, 161, 1712-1714.

Objective: Lack of insight affects the management of schizophrenia. The interrelationship between lack of insight and illness attributes in patients with schizophrenia who commit violent

acts is important and underresearched. Method: One hundred fifteen violent patients with schizophrenia in a jail or court psychiatric clinic were evaluated on measures of symptoms, illness severity, insight into illness, and the legal consequences of their illness ("forensic insight"). A sample of nonviolent patients served as a comparison group. Results: Compared with the nonviolent cohort, violent patients were more symptomatic, had poorer functioning, and had a more prominent lack of insight. Deficits of insight into illness coexisted with a lack of forensic insight, which was also associated with psychosis. Conclusions: Patients with schizophrenia who commit violent acts have insight deficits, including lack of awareness of the legal implications of their behavior. Targeted interventions to improve insight and treatment compliance in this population are warranted.

4. Gray, N. S., Hill, C., McGleish, A., Timmons, D., MacCulloch, M. J., & Snowden, R. J. (2003). Prediction of violence and self-harm in mentally disordered offenders: A prospective study of the efficacy of HCR-20, PCL-R, and psychiatric symptomatology. *Journal of Consulting & Clinical Psychology, 71*, 443-451.

The efficacy of the Historical, Clinical, and Risk Management Scales (HCR-20; C. D. Webster, D. Eaves, K. S. Douglas, & A. Wintrup, 1995), Psychopathy Checklist--Revised (PCL-R; R. D. Hare, 1991), Beck Hopelessness Scale (BHS; A. T. Beck, A. Weissman, D. Lester, & L. Trexler, 1974), and Brief Psychiatric Rating Scale (BPRS) to predict violence and self-harm in 34 institutionalized mentally disordered offenders was assessed. Both the HCR-20 and BPRS were strong predictors of violence whereas the PCL-R had moderate predictive ability. BHS was the only variable predictive of self-harm. Although risk assessment measures were successful at predicting in-patient violence, a clinical measure of mental state was at least as effective in these mentally disordered offenders.

5. Joyal, C. C., Putkonen, A., Paavola, P., & Tiihonen, J. (2004). Characteristics and circumstances of homicidal acts committed by offenders with schizophrenia. *Psychological Medicine, 34*, 433-442.

Background: While men with schizophrenia are at higher risk of displaying homicidal behaviors compared with the general population, very little is known about the circumstances related to the triggering of such violent acts among offenders with schizophrenia. The main goal of the present investigation was to describe the surrounding context, psychotic symptoms, target characteristics and other circumstantial factors associated with homicidal acts committed by men with schizophrenia, with or without an additional antisocial personality disorder (APD). Method: Comprehensive clinical and research interviews, as well as multiple sources of information including reports from social workers and police officers, criminal records, witness statements and questionnaires completed by friends, acquaintances and family members were used to determine specific characteristics surrounding the homicidal acts. Results: Overall, a significant majority of homicides were considered as the consequence of psychotic symptoms; they mostly involved someone who knew the offender; and they usually occurred in a private residence. However, the subgroup of offenders with both schizophrenia and APD were less likely to be judged as responding to psychotic symptoms; they assaulted a non-relative more frequently, and they were more likely to have used alcohol and to be involved in an altercation with the victim prior to the incident than offenders without APD. Conclusion: Even for such extreme acts as

homicides, the circumstances affecting the occurrence of violence among offenders with schizophrenia may differ when an additional APD diagnosis is present, which would have important implications for prevention and treatment programmes.

6. Junginger, J., Parks-Levy, J., & McGuire, L. (1998). Delusions and symptom-consistent violence. *Psychiatric Services, 49*, 218-220.

Examines the extent to which delusions motivate violent behavior among psychiatric patients with a history of delusions. 54 psychiatric inpatients (aged 20-88 yrs) were interviewed about their history of delusions and incidents of violence that were concurrent with delusions. Raters used a 5-point scale to estimate the degree to which each reported incident of violence was motivated by a concurrent delusion. A second set of raters used a 5-point scale to estimate the severity of the violent incidents. Raters' overall mean estimate indicated that violent incidents were probably not motivated by concurrent delusions. However, a significant minority of violent Ss (40%) reported at least 1 violent incident that was judged to be probably or definitely motivated by a concurrent delusion. A smaller subgroup of violent Ss (17.5%) reported at least 1 incident that was judged to be both extremely violent and definitely motivated by a concurrent delusion. Delusional motivation of violence is rare, but a moderate risk exists that delusions will motivate violence at some time during the course of a violent patient's illness.

7. Krakowski, M., & Czobor, P. (2004). Gender differences in violent behaviors: Relationship to clinical symptoms and psychosocial factors. *American Journal of Psychiatry, 161*, 459-465.

Objective: Men are more violent than women in the general population, but this has not been found to be the case among psychiatric inpatients. The reason for this exception is poorly understood. The present study investigated gender differences in violent behaviors among patients with major psychiatric disorders. It examined various clinical symptoms and psychosocial factors to determine their differential impact on violence in men and women. Method: Physical assaults and verbal assaults committed by psychiatric inpatients were recorded prospectively. Patients whose violent incident occurred during their first 2 months of hospitalization were eligible for the study. Patient history of community violence was also obtained. Psychiatric symptoms and ward behaviors were assessed upon entry into the study and after 4 weeks. Results: A similar percentage of women and men had an incident of physical assault in the hospital. Among the patients entered into the study, the women had a much higher level of verbal assaults throughout the evaluation period and a higher level of early physical assaults (i.e., within the first 10 days of the 4-week study period). Positive psychotic symptoms were more likely to result in assaults in women than in men. Physical assaults in the community, on the other hand, were more common in men and were associated with substance abuse, property crime, and a history of school truancy. Conclusions: There are gender differences in the patterns of violent behavior among patients with major psychiatric disorders. Furthermore, psychiatric symptoms and psychosocial risk factors have a different impact on this behavior in men and women. This has important implications for the prediction and differential treatment of violent behavior.

8. Krakowski, M., & Czobor, P. (1997). Violence in psychiatric patients: The role of psychosis, frontal lobe impairment, and ward turmoil. *Comprehensive Psychiatry*, 38, 230-236.

Examined psychiatric symptoms, neurological impairments, and situational factors associated with the emergence and persistence of violent behavior. Psychiatric symptoms were assessed in newly admitted physically assaultive psychiatric patients and nonviolent controls. Ss were then evaluated for 4 wks to determine the persistence or resolution of these physical assaults. 41 Ss who showed marked resolution of assaults were classified as transiently violent (TRV), and 34 Ss who remained assaultive throughout were categorized as persistently violent (PSV). At the end of 4 wks, all Ss received a comprehensive psychiatric and neurological assessment. Physical assaults were associated initially with prominent positive psychotic symptoms. Both TRV and PSV Ss were more psychotic than the nonviolent controls; however, TRV Ss showed better resolution of these symptoms over the 4 wks. They also evidenced less frontal lobe impairment on the neurological examination than the PSV Ss. The 2 violent groups differed in their susceptibility to environmental influences: the surrounding ward agitation fostered physical assaults in TRV but not in PSV Ss.

9. Krakowski, M., Czobor, P., & Chou, J. C. (1999). Course of violence in patients with schizophrenia: Relationship to clinical symptoms. *Schizophrenia Bulletin*, 25, 505-517.

Examined persistence and resolution of violence in inpatients with schizophrenia or schizoaffective disorder and in nonviolent controls. Ss were followed for 4 wks from time of study entry; those who showed resolution of assaults over this time were classified as transiently violent, and those who remained assaultive were categorized as persistently violent. At the end of the 4 wks, psychiatric symptoms, ward behaviors, and neurological impairment were assessed. Overall, the 2 violent groups presented with more severe psychiatric symptoms and were judged to be more irritable than the nonviolent controls, but the transiently violent Ss showed improvement in symptoms over time. At the end of 4 wks, the persistently violent Ss had evidence of more severe neurological impairment, hostility, suspiciousness, and irritability than the other 2 groups. Canonical discriminant analyses identified 2 significant dimensions that differentiated the groups. The 1st, characterized by positive psychotic symptoms, differentiated the violent Ss from the controls; the 2nd, characterized by neurological impairment and high endpoint score for negative symptoms, differentiated the transiently from the persistently violent Ss.

10. Link, B. G., Monahan, J., Stueve, A., & Cullen, F. T. (1999). Real in their consequences: A sociological approach to understanding the association between psychotic symptoms and violence. *American Sociological Review*, 64, 316-332.

Studies conducted over the past 3 decades have consistently reported an association between mental illness and violence. The authors propose a sociologically inspired explanation for this association by referring to the Thomas Theorem--if situations are defined as real, they are real in their consequences. Identified were small subsets of psychotic symptoms, termed "threat/control-override" symptoms, that tend to induce violence because they influence the definitions of situations. The data come from an epidemiological study conducted in Israel that included a psychiatrist-administered diagnostic interview with 2,678 Ss aged 24-33 yrs. Results show an

association between behaviors and psychiatric diagnosis that cannot be accounted for by sociodemographic variables. Threat/control-override symptoms are also strongly related to violent behaviors and explain a substantial part of the association between violence and psychiatric diagnoses. Other equally severe psychotic symptoms are not related to indicators of violence when threat/control-override symptoms are controlled. These findings support the authors' explanation for the association between mental illness and violence, and challenge the stereotype that most people with mental illnesses are dangerous.

11. Nolan, K. A., Czobor, P., Roy, B. B., Platt, M. M., Shope, C. B., & Citrome, L. L. et al. (2003). Characteristics of assaultive behavior among psychiatric inpatients. *Psychiatric Services*, *54*, 1012-1016.

Objectives: The purpose of this study was to assess the extent to which psychosis, disordered impulse control, and psychopathy contribute to assaults among psychiatric inpatients. **Methods:** The authors used a semistructured interview to elicit reasons for assaults from assailants and their victims on an inpatient research ward. Video monitoring provided supplemental information to confirm participants' identities and activities before and during the assault. **Results:** Consensus clinical ratings indicated that approximately 20 percent of the assaults in this sample were directly related to positive psychotic symptoms. Factor analysis revealed two psychosis-related factors, one related to positive psychotic symptoms and the other to psychotic confusion and disorganization, as well as a third factor that differentiated impulsive from psychopathic assaults. **Conclusions:** Information obtained from interviews with assailants can reveal the underlying causes of specific assaults. This information is potentially useful in the selection of rational antiaggressive treatment strategies.

12. Quanbeck, C., Stone, D. C., Scott, C. L., McDermott, B. E., Altshuler, L. L., & Frye, M. A. (2004). Clinical and legal correlates of inmates with bipolar disorder at time of criminal arrest. *Journal of Clinical Psychiatry*, *65*, 198-203.

Determines illness factors associated with criminality among bipolar patients, we identified bipolar arrestees housed in the psychiatric division of the Los Angeles County Jail who had a history of psychiatric treatment in the Los Angeles County community mental health system. Los Angeles County's computerized management information system was utilized to retrospectively identify all inmates evaluated over a 7-month period from July 1999 to Jan. 2000 with a DSM-IV diagnosis of bipolar I disorder, their symptoms at time of arrest, and the nature of community treatment preceding arrest. Criminal history was assessed using Sheriff's Department legal records. Demographic and clinical characteristics of these inmates were compared with characteristics present in a group of hospitalized bipolar patients without a history of arrest in Los Angeles County. The results of this study suggest that manic symptoms place bipolar patients at significant risk for criminal offending and arrest. Intensive treatment intervention by the community mental health and criminal justice system may be needed, particularly in the immediate postmanic hospitalization period, in order to prevent incarceration of patients with bipolar disorder.

13. Solomon, P., & Draine, J. (1999). Explaining lifetime criminal arrests among clients of a psychiatric probation and parole service. *Journal of the American Academy of Psychiatry & the Law*, 27, 239-251.

Examined the extent to which sociodemographic and clinical characteristics, substance abuse problems, and the array of lifetime criminal behavior may explain lifetime arrests among offenders supervised by the psychiatric probation and parole service. 325 clients with new cases at a psychiatric probation and parole service in a large urban center were screened for major psychiatric disorders. They were also interviewed for sociodemographic characteristics, mental health treatment history, criminal behavior, and arrest history. Hierarchical block multiple regression analysis tested a model explaining lifetime arrests. After controlling for age and other demographic variables, the number of lifetime psychiatric hospitalizations and lifetime occurrences of mania diagnosis significantly explained lifetime arrests. The total model explained about 10% of the variance in lifetime arrests after controlling for opportunity variables, which explained 45%. The explanatory power of lifetime hospitalizations and mania support the contention that symptoms, rather than diagnosis, may be the most important clinical factor in explaining criminal arrest among persons with mental illness. Implications for psychiatric services include the development of effective jail diversion programs.

14. Steinert, T., Wölfle, M., & Gebhardt, R. (2000). Measurement of violence during in-patient treatment and association with psychopathology. *Acta Psychiatrica Scandinavica*, 102, 107-112.

Objective: Four available instruments for the measurement of violence were compared. The association between psychopathological status at admission and violence during in-patient treatment was examined. Method: In 199 consecutively admitted patients (143 with schizophrenia or schizoaffective disorder, 56 with non-psychotic disorders), the PANSS was recorded at the time of admission. Violent behavior against self and others was assessed for the total period of in-patient treatment using the scales MOAS, SDAS, SOAS and VS. Results: The sumscores of the scales correlated highly (r between 0.78 and 0.91), but the scales differed in sensibility and inter-rater reliability. There was a strong association between thought disorders and violent behavior during in-patient treatment in psychotic patients ($\beta = 0.34$; $p < 0.001$). Conclusion: Although constructed to measure different aspects of violence, all investigated instruments correlated highly. The psychopathological status at admission is associated with violent behavior during in-patient treatment.

15. Stueve, A., & Link, B. G. (1998). Gender differences in the relationship between mental illness and violence: Evidence from a community-based epidemiological study in Israel. *Social Psychiatry & Psychiatric Epidemiology*, 33, S61-S67.

Examined whether the associations between gender and self-reported violent behaviors (fighting and weapon use) are moderated by 3 mental health indicators: treatment status, psychiatric diagnosis, and threat/control-override psychotic symptoms. Data from a 2-stage epidemiological study of 24-33 yr old Israeli Ss were analyzed using descriptive statistics and logistic regression analysis. Results indicate that treatment status and psychiatric diagnosis moderate the association between gender and fighting, but leave unanswered questions both about the moderating role of

threat/control-override symptoms and about the implications of mental illness for the gender/weapon use relationship.

16. Tuninger, E., Levander, S., Bernce, R., & Johansson, G. (2001). Criminality and aggression among psychotic in-patients: Frequency and clinical correlates. *Acta Psychiatrica Scandinavica*, *103*, 294-300.

Objective: Violence is common among patients with psychoses. The aim of the study was to examine relations between diagnoses, crimes, demographic variables and aggressive behavior during admission to hospital. Method: During 14 months 257 patients were consecutively referred to a unit with high staff/patient ratio. They were assessed for clinical symptoms at admittance and discharge. Also legal status, coercive measures, criminality and sentences were examined. Results: Of the 257 patients, 38% were found in the police register and 33% had been prosecuted. Those patients committed 2525 crimes, including 292 acts of violence. Problems during admittance were related more to positive symptoms at admittance than to earlier criminality. Conclusion: Criminality rate is high among patients with functional psychoses. Many patients, especially women, had never been evaluated by a forensic psychiatrist. The psychiatric services have to consider the importance of preventing psychotic relapses and thereby also preventing violence and criminality.

17. Volavka, J., Laska, E., Baker, S., & Meisner, M. (1997). History of violent behavior and schizophrenia in different cultures. Analyses based on the WHO study on determinants of outcome of severe mental disorders. *British Journal of Psychiatry*, *171*, 9-14.

Explored whether, at the onset of their illness, individuals with schizophrenia in developed and developing countries differ in their rates of history of assaultive behavior, and determined the items that are correlated with this behavior. Centres in 10 countries participated in the Determinants of Outcome of Severe Mental Disorders study, which presented an opportunity to study patterns of violence across multinational settings. An incidence sample was obtained of 1,017 patients (aged 15-54 yrs) with schizophrenia who had their first-in-lifetime contact with a helping agency as a result of their psychotic symptoms. Data were available on their history of violent behavior, substance use, and demographics. The occurrence rate of assault in the entire cohort was 20.6 per hundred, but the rate was 3 times higher in the developing countries (31.5 per hundred) than in the developed countries (10.5 per hundred). History of assault was associated with positive symptoms, such as excitement and auditory hallucinations, and with serious alcohol problems. The cultural context and the specific characteristics of the disease in individuals with schizophrenia may interactively affect rates of violent behavior.

Additional Relevant Sources for C3 – Contradictory Findings – Abstracts Provided

1. Appelbaum, P. S., Robbins, P. C., & Monahan, J. (2000). Violence and delusions: Data from the MacArthur violence risk assessment study. *American Journal of Psychiatry, 157*, 566-572.

Explored the relationship between delusions and violence among patients recently discharged from acute psychiatric hospitalization. Data were drawn from the MacArthur Violence Risk Assessment Study, a study of violence in the community that followed 1,136 recently discharged psychiatric patients (aged 18-40 yrs) for 1 yr. Interviews at discharge and at 5 10-wk intervals gathered clinical, historical, situational, and dispositional information, including the presence and nature of delusional thoughts. Violence was ascertained from reports of Ss, collateral informants, and official records. Neither delusions in general nor threat/control override delusions in particular were associated with a higher risk of violent behavior. Comparisons with prior studies suggest that reliance on S self-reports of delusional symptoms may result in mislabeling as delusions other phenomena that can contribute to violence. It is concluded that although delusions can precipitate violence in individual cases, these data suggest that they do not increase the overall risk of violence in persons with mental illness in the year after discharge from hospitalization.

2. Bonta, J., Law, M., & Hanson, K. (1998). The prediction of criminal and violent recidivism among mentally disordered offenders: A meta-analysis. *Psychological Bulletin, 123*, 123-142.

A meta-analysis was conducted to examine whether the predictors of recidivism for mentally disordered offenders are different from the predictors for nondisordered offenders. Effect sizes were calculated for 35 predictors of general recidivism and 27 predictors of violent recidivism drawn from 64 unique samples. The results showed that the major predictors of recidivism were the same for mentally disordered offenders as for nondisordered offenders. Criminal history variables were the best predictors, and clinical variables showed the smallest effect sizes. The findings suggest that the risk assessment of mentally disordered offenders can be enhanced with more attention to the social psychological criminological literature and less reliance on models of psychopathology.

3. Cheung, P., Schweitzer, I., Crowley, K., & Tuckwell, V. (1997). Violence in schizophrenia: Role of hallucinations and delusions. *Schizophrenia Research, 26*, 181-190.

Examined the relationship between hallucinations/delusions and violent behavior in long-stay inpatients with chronic schizophrenia. 31 Ss defined as violent were compared with 31 matched non-violent schizophrenia patients with respect to auditory hallucinations and delusions. Violent patients were significantly more likely to experience negative emotions, tone, and content related to their voices, with non-violent patients experiencing positive emotions, tone, and content. Patients in the non-violent group were significantly more likely to report success in coping with their voices. There was no association between command hallucinations and violent behavior. Violent patients were more likely to hold persecutory delusional beliefs and their non-violent counterparts were more likely to hold grandiose delusions. Patients in the violent group were also more likely to report that the delusion made them feel angry but non-violent Ss often

reported feelings of elation. The results suggest specific aspects of hallucinations and delusions that should be clinically assessed to determine the likelihood of violence.

4. Milton, J., Amin, S., Singh, S.P., Harrison, G., Jones, P., Croudace, T., Medley, I., & Brewin, J. (2001). Aggressive incidents in first-episode psychosis. *British Journal of Psychiatry*, 178, 433-440.

Examined acts of aggression in first-episode psychosis. 166 subjects (aged 16-64 yrs) with a first-episode psychosis were reassessed at 3 years using clinical interview, informants, health care and forensic records. Results found that, of the subjects, 9.6% demonstrated at least one act of serious aggression (defined as weapon use, sexual assault or victim injury) during at least one psychotic episode and 23.5% demonstrated lesser acts of aggression (defined as all other acts of aggression). For all aggressive subjects (33.1%), unemployment, comorbid substance misuse and symptoms of overactivity at service contact had dependent effects on risk of aggression. It is concluded that the results confirmed some previously reported demographic and clinical associations with aggression in first-episode psychosis, but no relationship with specific psychotic symptoms or diagnostic groups was observed.

5. Walsh, E., Gilvarry, C., Samele, C., Harvey, K., Manley, C., & Tattan, T. et al. (2004). Predicting violence in schizophrenia: A prospective study. *Schizophrenia Research*, 67, 247-252.

Background: People with schizophrenia are more violent than the general population, but this increased risk is attributable to the actions of a small subgroup. Identifying those at risk has become an essential part of clinical practice. Aims: To estimate the risk factors for assault in patients with schizophrenia. Methods: Two hundred seventy-one patients with schizophrenia were interviewed using an extensive battery of instruments. Assault was measured from multiple data sources over the next 2 years and criminal records were obtained. Multiple sociodemographic and clinical variables measured at baseline were examined as possible predictors of assault during follow-up. Results: Sixty-nine (25%) patients committed assault during the 2-year followup. The model that best predicted assault included a history of recent assault (OR = 2.33, 95% CI = 1.17-4.61), a previous violent conviction (OR = 2.02, 95% CI = 1.04 - 3.87), having received special education (OR = 2.76, 95% CI = 1.22 - 6.26) and alcohol abuse (OR = 3.55, 95% CI = 1.24-10.2). Conclusions: Previously established risk factors including a history of violence and alcohol abuse are replicated in this study. Although low premorbid IQ did not predict violence, a need for special education did.

Narrative Review of C3

1. Bjorkly, S. (2002). Psychotic symptoms and violence toward others - A literature review of some preliminary findings: Part 2. hallucinations. *Aggression and Violent Behavior, 7*, 605-615.

According to the clinical impressions of a number of authors and mental health professionals, an increased risk of violence is associated with the presence of hallucinations and --in particular-- command hallucinations. In contrast to this, some empirical studies have reported that there is no evidence of such a relationship. The present review examined the role of hallucinations in violence toward others. Possible empirical evidence for a violence-escalating interaction between delusions and hallucinations is also analyzed. Among the main findings were there appears to be no evidence that auditory command hallucinations are dangerous per se. However, there is some evidence that voices ordering acts of violence toward others may increase compliance and thereby be conducive to violent behavior. Finally, the evidence for or against the existence of a possible violence-escalating interaction between delusions and hallucinations is inconclusive. The findings are discussed particularly in relation to problems of measurement and other research design factors. Discrepancies between some of the findings of the present review and current clinical lore are also briefly considered.

2. Bjorkly, S. (2002). Psychotic symptoms and violence towards others - A literature review of some preliminary findings: Part 1. delusions. *Aggression and Violent Behavior, 7*, 617-631.

The main scope of this paper is to delineate some findings from a review of the literature concerning the possible impact of delusions on violence toward others by psychiatric patients. According to this review, studies on a possible association between delusions and increased risk of violence are scarce, but steadily growing, and have shown some interesting results. However, since delusions are also common in nonviolent psychiatric patients, there is emerging evidence that our attention should be directed to specific hallmarks of delusions that indicate an increased risk of violence. Among the main findings of the present review are (1) the number of empirical studies were surprisingly low, (2) about 80% of the studies were conducted during the last 8 yrs, and (3) less than one-third of the studies used a prospective design. Further findings were that persecutory delusions appear to increase risk of violence in some patients; co-occurrence of persecutory delusions and emotional distress may increase risk of violence; and there is limited but tentative support to the existence of an association between symptoms of perceived threat and internal control override and violence.

3. Junginger, J., & McGuire, L. (2004). Psychotic motivation and the paradox of current research on serious mental illness and rates of violence. *Schizophrenia Bulletin, 30*, 21-30.

Persuasive empirical support exists for a positive association between serious mental illness (SMI) and rates of violence; a great deal of support is also present for the clinical impression that psychotic symptoms some-times motivate "symptom-consistent" violence. We propose that the issue of the motivation for violence in the SMI population can be considered independently of the issue of the association between SMI and violence rates. We review much of the current literature on the association between SMI and violence in a framework that emphasizes motivational influences unique to the SMI population. We conclude that the contribution of

psychotic motivation to rates of violence in the SMI population is a major research issue. Furthermore, we believe that recognition of the independence of motivational influences and violence rates, and consideration of the impact of treatment on violence, may help explain the paradox of current research: Delusions and hallucinations may motivate violent behavior, but this psychotic motivation may not be reflected in the actual rate of violence.

4. Rudnick, A. (1999). Relation between command hallucinations and dangerous behavior. *Journal of the American Academy of Psychiatry & the Law*, 27, 253-257.

Presents a review of studies on the relation between command hallucinations and dangerous behavior. The author reviewed all studies published between 1966 and 1997 according to MEDLINE and between 1974 and 1997 according to PsycLIT. 41 studies were found, 82.9% of which dealt with the relation between command hallucinations and dangerous behavior. These studies were grouped into 3 partially overlapping classes: those concerned with violent behavior, those concerned with suicidal behavior, and those concerned with mediating variables. Most of the studies agreed on the non-existence of an immediate relation between command hallucinations and dangerous (violent or suicidal) behavior. Even though the studies were divided about the existence of a relation between severity/dangerousness of command content and compliance with the commands, there was agreement about the existence of a direct relation between compliance with commands and both benevolence and familiarity of commanding voice. The author concludes that the research and knowledge available to date on this subject is both scant and methodologically weak.

C4 Impulsivity

1. Cornell, D.G., Peterson, C.S., & Richards, H. (1999). Anger as a predictor of aggression among incarcerated adolescents. *Journal of Consulting and Clinical Psychology*, 67, 108-115.

→ Institutional Physical Aggression
**Youth Sample

This study examined the validity of trait anger as a predictor of institutional aggressive behavior among male juvenile offenders. Youths were recruited at a centralized state facility where they were undergoing a routine intake evaluation. The present sample ($N = 65$) comprises youth who completed the study's measures and who were transferred to the state juvenile correctional facility that is designated for the most serious juvenile offenders. Participants on average were 16.7 years old. The racial distribution of the sample was: 66% African American, 31% White, and 3% 'Other.'

Two measures of anger were included as independent variables. The Novaco Anger Scale (NAS), which is a 72-item self-report questionnaire, consists of Parts A and B. Part A measures the cognitive, affective, and behavioral facets of anger the participant experiences when aroused. Part B provides an index of anger intensity and generality across a range of provocations (e.g., being criticized). The second measure included was the State-Trait Anger Expression Inventory, which is a 44-item self-report questionnaire that contains five scales. The STAXI includes 10 state items (State Anger Scale) that assess current mental state ("I am furious") and 10 trait items (Trait Anger Scale) designed to assess a more habitual response tendency ("I am quick tempered"). The final 24 items form three 8-item scales to assess reactions when experiencing anger: efforts to hold in or suppress anger (Anger-In Scale; "I boil inside, but I don't show it"), direct expression of anger toward others (Anger-Out Scale; "I argue with others"), and efforts to control the expression of anger (Anger Control Scale; "I control my angry feelings").

Within two weeks of admission to the intake center, youth completed a 159-item research questionnaire comprising the NAS and the STAXI. The NAS always preceded the STAXI in the questionnaire and potential order effects were not examined. In order to examine the tendency to respond to the research questionnaire in a socially desirable manner, a 10-item Social Desirability Scale (which consisted of items adapted from the Marlow-Crowne scale) was administered to the youth as well.

Three sets of criterion measures were derived from the participant's offense history of adjudicated offenses, staff ratings, and record of institutional rule violations. Regarding offense history, approximately 31% of the sample was committed for a violent offense, 45% had a prior violent offense, and 61% had either a current or prior violent offense.

Staff ratings of participant anger were completed approximately 2 weeks after the youth's arrival at the correctional center. Raters were instructed to make general characterization of the youth rather than ratings based on a specific time period. Staff provided ratings on a 6-point Likert-type scale ranging from 1 (*never*) to 6 (*almost daily*) for the following items: (1) gets angry or

annoyed easily; (2) is impatient; (3) is irritable or grouchy; (4) is quick to fly off the handle; (5) is easily upset if something doesn't suit him; (6) verbally abuses others; and (7) is disruptive.

An additional seven items were created for the staff that measured the pervasiveness of the participant's anger across situations. Staff members were asked "How often does [the juvenile offender] become angry in the following situations?" The items were based on common problem situations identified in consultation with correctional center staff (e.g., Is criticized by staff in front of other people? Tries to concentrate while someone keeps making noise?).

Participants' official record of institutional rule violations was reviewed. All incidents of physical aggression against staff and peers were tabulated for the first 3 months of the youths' residence at the correctional center. Each violation was documented by a detailed report describing the situation, witness accounts, and the juvenile's statement. In addition to physical aggression, all incidents of verbal aggression, which included episodes of swearing at others or making derogatory comments about others, also were tabulated. Incidents with both verbal and physical aggression were counted as physical aggression.

None of the anger scales was significantly correlated with the participant's number of prior violent offenses. The mean number of physical aggression among the youth during the three month period was 1.2 ($SD = 1.4$; range 0-6). Verbal aggression ranged from 0 to 29 with a mean of 2.6 ($SD = 5.1$). Physical aggression and verbal aggression were significantly correlated ($r = .41, p < .001$). **Physical aggression was correlated with (all at $p < .05$): Trait Anger ($r = .28$), Anger-Out ($r = .25$), and Anger Control ($r = -.38$). Verbal aggression was significantly correlated ($p < .05$) with: NAS Part A ($r = .29$), Trait Anger ($r = .35$), and Anger-Out ($r = .33$).**

Separate discriminant function analyses were conducted for NAS and STAXI scales to estimate the accuracy of each instrument in predicting physical aggression. The discriminant function for the prediction of physical aggression based on NAS Part A scores was significant (Wilks's $\lambda = .879$; $\chi^2(1, N = 65) = 8.1, p < .01$). The overall classification accuracy of NAS Part A was 65% (42 of 65 cases), with a sensitivity of 76% (28 of 37) and a specificity of 50% (14 of 28). Positive predictive value of the NAS Part A score was 67% (28 of 42), and negative predictive value was 61% (14 of 23). Part A scores ranged from 60 to 131 ($M = 92.40, SD = 17.85; Md = 94$). The discriminant function classified participants with a score of 86 or higher as aggressive.

The discriminant function of Trait Anger (STAXI) also was significant (Wilks's $\lambda = .826$; $\chi^2(3, N = 65) = 11.96, p < .001$). The overall classification accuracy of Trait Anger was 66% (43 of 65 cases), with a sensitivity of 68% (25 of 37) and a specificity of 64% (18 of 28). Positive predictive value was 71% (25 of 35), and negative predictive value was 60% (18 of 30). Trait Anger scores ranged from 9 to 36 ($M = 21.52, SD = 7.10; Md = 20$). The discriminant function classified participants with a score of 20 or higher as aggressive. The area under the curve for Trait Anger was approximately .72.

Another discriminant function analysis was conducted for Anger-Out, Anger Control, and Trait Anger. This model also reached significance (Wilks's $\lambda = .749$; $\chi^2(3, N = 65) = 17.8, p < .001$). The overall classification accuracy of the three STAXI scales was 71% (46 of 65 cases), with a

sensitivity of 76% (28 of 37) and a specificity of 64% (18 of 28). Positive predictive value was 73% (28 of 38) and negative predictive value was 67% (18 of 27).

Finally, the predictive validity of staff ratings was examined. Physical and verbal aggression scores were based on the 2nd and 3rd months within the facility because staff ratings were obtained during the first month of the youth's stay. Staff Part A ratings were significantly correlated with: physical aggression ($r = .31, p < .05$) and with verbal aggression ($r = .46, p < .001$). Staff part B ratings were also significantly correlated: physical aggression ($r = .30, p < .05$) and with verbal aggression ($r = .44, p < .001$). A discriminant function analysis of the two staff ratings was significant (Wilks's $\lambda = .842; \chi^2(2, N = 65) = 10.64, p < .01$). The overall classification accuracy of the staff ratings was 68% (45 of 65 cases), with a sensitivity of 62% (18 of 29) and a specificity of 72% (26 of 36). Positive predictive value of the staff ratings was 64% (18 of 28), and negative predictive value was 70% (26 of 37).

2. Craig, L.A., Browne, K.D., Beech, A., & Stringer, I. (2004). Personality characteristics associated with reconviction in sexual and violent offenders. *Journal of Forensic Psychiatry & Psychology, 15*, 532-551.

→ Community Violence

This study examined personality characteristics associated with reconviction and explored the accuracy of a measure - the Special Hospitals Assessment of Personality and Socialization (SHAPS) - in predicting reconviction. The sample comprised 121 male offenders (68 sexual, and 53 non-sexual violent), who were followed up over 2, 5 and 10 year periods. The mean age of the sample was 34.4 years ($SD = 12.7$ years, range: 15-74 years). The participants had been referred to a UK Regional Secure Unit (RSU) for assessment between 1992 and 1995. The RSU is a forensic psychiatric facility for medium risk adult psychiatric patients and mentally disordered offenders.

Assessment protocols and psychology assessment reports were examined using a retrospective archival design. The measures used in this study were: SHAPS, Static-99 and the Risk Matrix-2000 – Sexual and Violent Scales. The SHAPS is a self-report assessment consisting of 213 items and is divided into 10 scales: (1) Lie scale, (2) Anxiety scale, (3) MMPI Extroversion scale, (4) Hostility scale, (5) Introversion scale, (6) Depression scale, (7) Tension scale, (8) Psychopathic Deviate scale, (9) Impulsivity scale, (10) Aggression scale.

Official reconviction rates were calculated using data from the Home Office Offenders Index (OI). Reconviction data were collected in January 2003 from the OI allowing an average follow-up period of 105 months ($SD = 9.9$ months, range: 66 months to 123 months). Of the 121 offenders, 87% ($n = 105$) were followed up at 8 years, 44% ($n = 53$) at 9 years, and 2% ($n = 3$) at 10 years. Sexual reconvictions were defined as having committed a sexual offense (rape, attempted rape, indecent assault, gross indecency). Violent reconvictions were defined as having committed a violent offense (actual or grievous bodily harm, murder, manslaughter, wounding, and common assault) and having no history of sexual offenses or sexual element to their offending.

Although the authors presented analyses to explore the comparative predictive accuracy of the risk assessment measures, the focus here will be narrowed to findings that are **of relevance to HCR-20 item C4. Over the 2, 5 and 10 year follow-up periods, the SHAPS Impulsivity scale consistently obtained the highest AUC values (compared to the other SHAPS scales) for predicting violent reconviction over a 5 year period (AUC = .65, $p = .05$) and a 10 year period (AUC = .71, $p = .01$) year periods.**

3. Firestone, P., Nunes, K.L., Moulden, H., Broom, I., & Bradford, J.M. (2005). Hostility and recidivism in sexual offenders. *Archives of Sexual Behavior, 34*, 277-283.

→ Community Violence

This study examined the association of hostility with offense characteristics and recidivism for sexual offenders. The sample comprised 656 offenders assessed at the Royal Ottawa Hospital, Sexual Behaviors Clinic, between 1982 and 1995. The participants were male, 18 years of age or older at the time of their index offenses, and had all been convicted of a hands-on sexual offense against an adult or a child. Offenders were classified based on their index and prior sexual offenses: 298 incest offenders (only related child victims), 295 extrafamilial child molesters (only unrelated child victims), 89 rapists (only adult victims), and 64 mixed offenders (i.e., falling into two or more of the above offender categories). The two measures used in this study were the Buss-Durkee Hostility Inventory (BDHI) and the Rapid Risk Assessment for Sexual Offense Recidivism (RRASOR).

Data were collected through file reviews, interviews, and psychometric tests. Violence in the index offense was coded as present if there had been threat of assault with a weapon, minor injury with or without a weapon, severe beating with or without a weapon, potential homicide, homicide, or homicide with post-death mutilation. Offense information was gathered from the Canadian Police Information Center (CPIC). For an offender to be considered eligible to reoffend, he must have been free to commit a crime. Recidivism was gathered from CPIC records and coded as the first offense committed when eligible. Sexual recidivism was defined as a charge or conviction for a sexual offense after the index offense. Violent recidivism included a charge or conviction for a violent or sexual offense after the index offense.

A varimax rotation was performed on the 7 subscales of the BDHI and only one component was extracted; it accounted for 58.9% of the variance. Therefore, only BDHI total score was used in subsequent analyses. **The BDHI was significantly correlated with both sexual ($r = .14$, $p < .001$) and violent recidivism ($r = .21$, $p < .001$).**

The base rates of recidivism were 19.7% for sexual recidivism and 29.9% for violent recidivism. The average follow-up time was 12.18 years ($SD = 3.33$). **With respect to sexual recidivism, mean BDHI total score was 30.55 ($SD = 13.12$) among recidivists and 26.03 ($SD = 12.50$) among nonrecidivists, Cohen's $d = .35$. For violent recidivism, mean BDHI total scores were 30.99 ($SD = 12.61$) among recidivists and 25.19 ($SD = 12.41$) among nonrecidivists, Cohen's $d = .46$.**

A sequential logistic regression, with RRASOR-mod entered first, followed by BDHI, was performed to determine whether either contributed uniquely to the prediction of sexual recidivism. **The BDHI was found to contribute uniquely to the prediction of sexual recidivism (Wald = 9.53, $p < .01$; OR = 1.03, 95% CI = 1.01 - 1.04).** A parallel sequential logistic regression for violent recidivism found that **BDHI contributed uniquely to the prediction of violent recidivism (Wald = 23.86, $p < .001$; OR = 1.04, 95% CI = 1.02 - 1.05).**

Correlations between the BDHI and recidivism of specific types of sexual offenders were calculated. Significant correlations were found for intrafamilial child molesters ($r = .18, p < .01$) and extrafamilial child molesters ($r = .16, p < .05$). Partial correlations for these two types were also significant while controlling for the RRASOR (intrafamilial: $r = .16, p < .05$; extrafamilial: $r = .18, p < .05$). The same pattern of results was found for the correlation between BDHI and violent recidivism: intrafamilial $r = .26$ ($p < .05$; partial $r = .25, p < .05$) and extrafamilial $r = .25$ ($p < .05$; partial $r = .26, p < .05$).

The present results are of relevance to HCR-20 item C4 in that hostility (as measured by the BDHI) was associated with a higher likelihood of sexual and violent recidivism. Moreover, hostility demonstrated incremental validity in the prediction of sexual and violent recidivism compared to an actual risk assessment measure (the RRASOR-mod). This suggests, at least among sex offenders, that hostility may be an important construct to assess in addition to other risk factors.

4. McNiel, D.E., Eisner, J.P., & Binder, R.L. (2003). The relationship between aggressive attributional style and violence by psychiatric patients. *Journal of Consulting and Clinical Psychology, 71*, 399-403.

→ Community Violence

The authors investigated whether indicators of an aggressive attributional style were associated with increased rates of community violence committed by patients shortly before admission to hospital. Participants were recruited between November 1995 and June 1996 from a short-term civil psychiatric inpatient unit. Participants were asked to fill out a number of questionnaires, including: the Novaco Anger Scale-Part A (NAS-A); the Psychiatric Epidemiology Research Interview – Psychotic Symptoms subscale; the MMPI-2 Paranoia scale, Persecutory Ideas subscale; the External Hostile Attribution Scale (EHAS); and the Barratt Impulsiveness Scale (BIS-11). In light of the hypothesis that impulsiveness coupled with an aggressive attributional style may increase risk, the BIS-11 was included in the present study to account for the contribution of impulsiveness in the study group.

Violence was measured with a self-report paper and pencil measure that was adapted from the MacArthur Community Violence Instrument. Violence was operationalized as a report of any act of physical aggression against another person or as threatening others with a lethal weapon within the past 2 months. Demographic information and clinical diagnoses were obtained from participants' medical charts.

Patients were not eligible for participation until 3 days after admission or later, when they were sufficiently stable to participate. Of 402 consecutive admissions, 346 patients were eligible and 141 patients agreed to participate. The final sample consisted of 110 patients that completed the study. Fifty-nine percent of the patients were male and 41% women. The racial distribution of the sample was: 59% White, 21% African American, and 20% 'other.' The mean age was 40.7 years ($SD = 13.6$ years; range: 18-84 years).

Kendell's tau correlations showed that violence was correlated with: NAS-A ($r = .42, p < .01$), TCO symptoms ($r = .28, p < .01$), MMPI-2 Paranoia Scale, Persecutory Ideas subscale ($r = .39, p < .01$) and EHAS ($r = .25, p < .01$). Impulsiveness was positively correlated with violence ($r = .16, p < .05$).

To characterize the relationship between violent behavior and the study's indicators of attributional style and control variables, four multivariate logistic regression analyses were conducted. Each analysis used each of the four indicators of attributional style as predictor variables. In each model, a forced-entry method was used to add control variables, including demographics, diagnosis, and impulsiveness. Sex and impulsiveness did not make an independent contribution to prediction of violence in any of the models, so the models were recalculated without these variables to be parsimonious. **Even when demographic and diagnostic variables were controlled for, each indicator of attributional style made a statistically significant contribution toward prediction of violence: levels of anger ($\beta = .68, p < .001$); higher scores on measures of persecutory ideas ($\beta = .48, p < .01$), TCO symptoms ($\beta = .28, p < .05$), and external hostile attributions ($\beta = .30, p < .05$).**

5. Novaco, R.W., & Taylor, J.L. (2004). Assessment of anger and aggression in male offenders with developmental disabilities. *Psychological Assessment, 16*, 42-50.

→ Institutional Physical Assaults

This study investigated the prevalence of anger and its relationship to demographic, cognitive, and personality variables, as well as its relationship with hospital assaultive behavior. The sample comprised 129 male patients with developmental disabilities, which represented 94% of the total population ($N = 137$) of the men's forensic services in the Northgate Hospital (England) at the time. The mean age of the sample was 33.2 years ($SD = 11.6$). The majority of the sample (94%) was detained under section of the Mental Health Act 1983 and the remaining eight patients were informal or voluntary patients. Approximately 36% of the patients had previous convictions for violent behavior and a further 38% had no convictions for violence but had a documented history of aggressive behavior or violence. Twenty-four patients were unable to complete the entire anger assessment and significant differences were found between the completer and non-completer groups. Overall, the non-completers were found to be older, of lower intelligence, were viewed by staff as more angry, and tended to have been in the hospital longer.

Data were collected through testing of patients, which was done routinely as part of new patients' postadmission assessment or during regular updating of existing patient assessment profiles. Patients were asked to complete a number of questionnaires and staff assessed the patients' anger difficulties. In addition, demographic, diagnostic and the number and type of previous convictions and number of physical assaults on staff or on other patients since admission were collected from chart review.

Anger was assessed by three self-report instruments that were all modified for this study: the State-Trait Anger Expression Inventory (STAXI), the Novaco Anger Scale (NAS), and the Provocation Inventory (PI). In addition, one staff-rated measure of anger was included in the present study: the Ward Anger Rating Scale; WARS. Personality was measured by the Eysenck Personality Questionnaire-Revised (EPQ-R) and the Impulsiveness Questionnaire (IVE).

The internal consistency coefficients (alphas) of the anger scales for the patient self-reports were as follows: STAXI State Anger = .87 ($n = 112$), STAXI Trait Anger = .86 ($n = 112$), NAS total = .92 ($n = 110$), and PI = .92 ($n = 114$). For the staff rated WARS Anger index, alpha = .95 ($n = 125$). No significant differences were found between the no-violence history and violence history groups for the self-report anger measures. Significant differences were found between these groups for the staff rated measures. Patients with violent histories ($M = 8.58$, $SD = 7$) were significantly higher in staff-rated anger than were the patients with no violence history ($M = 5.53$, $SD = 6.03$), $t(125) = 2.25$, $p < .05$, $d = .46$ in the week of the obtained ratings. A similar pattern was found for staff-observed aggressive behavior in that week: patients with violence history ($M = .76$, $SD = 1.27$) were significantly higher than those with no violence history ($M = .38$, $SD = .78$) $t(95.95) = 2.03$, $p < .05$, $d = .36$.

The retrospective association between anger and physically assaultive behavior in hospitals was examined to investigate the postdictive validity of the anger measures. A hierarchical multiple regression with forced entry was conducted. Patient age, length of stay, full-scale IQ, and violence history were entered on the first step of the regression as the first covariate block. For the second step, the EPQ-R Psychoticism, Neuroticism, Extraversion and Lie scales were entered. In the third step, the NAS total, STAXI State Anger and PI were entered. Results showed that block 1 accounted for 8% of the variance in assault ($R^2 = .081$, *ns*). A significant change in R^2 of .148, $F_{\text{change}}(4, 90) = 4.33$, $p = .003$ was seen when the EPQ-R variables were entered. The Extraversion, Neuroticism and Lie scales were each significant predictors in this block. When the anger variables were added to the model in step 3, only the Extraversion scale remained significant. **Inclusion of the anger variables resulted in a change in R^2 of .086, $F_{\text{change}}(3, 87) = 3.64$, $p = .016$, with NAS total (semipartial $r^2 = .075$) being the lone significant predictor.**

Taken together, the regression results indicated that, controlling some covariates, patient's self-reported anger, at least as measured by the NAS total, is significantly associated with hospital assaults.

Additional Relevant Sources Supportive of C4 – Abstracts Provided

1. Fehon, D. C., Grilo, C. M., & Lipschitz, D. S. (2005). A comparison of adolescent inpatients with and without a history of violence perpetration: Impulsivity, PTSD, and violence risk. *Journal of Nervous and Mental Disease, 193*, 405-411.

How childhood maltreatment and violence victimization contributes to subsequent violent behavior remains an understudied area. We examined 130 psychiatrically hospitalized adolescents and compared those with a history of perpetrating violence to those without a history of violence perpetration. Perpetrators of physical violence were significantly more likely to have been a victim and/or witness to family and community violence and also reported significantly higher levels of a broad range of psychopathology than nonperpetrators. Correlational analyses with the study group of violence perpetrators revealed that higher levels of impulsivity, dissociation, and PTSD were significantly associated with higher levels of violence. Furthermore, multiple regression analysis showed that symptoms of impulsivity and PTSD contributed significantly to the prediction of violence risk. Our findings demonstrate that violence exposure and childhood maltreatment are indeed common negative life events among adolescent inpatients, and that symptoms of PTSD may predispose traumatized youth toward impulsive violent behavior.

2. Lindsay, W. R., Allan, R., Parry, C., Macleod, F., Cottrell, J., & Overend, H. & Smith, A.H.W. (2004). Anger and aggression in people with intellectual disabilities: Treatment and follow-up of consecutive referrals and a waiting list comparison. *Clinical Psychology & Psychotherapy, 11*, 255-264.

Based on the work of Novaco, there have been several reports of case illustrations that develop anger management training for people with intellectual disabilities. Case reports have become increasingly sophisticated, with social validation of aggression and follow-ups of up to 10 years. There have also been three recent outcome studies attesting to the effectiveness of anger management treatment methods. The current report uses more recently developed methods and a larger number of subjects than previous reports and presents a controlled study of these methods. Thirty-three participants made up the treatment condition. Fourteen participants constituted a waiting list control condition, which lasted six months. Participants were assessed using a provocation inventory, anger provoking role plays, self-report diaries and reports of aggressive incidents. All were assessed pre- and post-experimental conditions and for the treatment condition some had three, nine and 15 months follow-up. For some participants there was a 21 and 30 month follow-up. Control participants all went on to complete treatment. There were significant improvements in anger control on all measures. While there were significant within subject improvements on the provocation inventory, the treatment subjects did not show significant improvement over the control subjects at posttreatment. A significantly greater percentage of control subjects committed further aggressive incidents. Taken together, the results show the positive effect of anger management training and the generalization of these effects to a reduction in the number of reported aggressive incidents. The present study is further evidence of the effectiveness of anger management training for people with intellectual disabilities. These improvements are shown not only in assessments designed to measure the effects of treatment but also in more general socially validated records of incidents of aggression.

3. Lundeberg, K., Stith, S. M., Penn, C. E., & Ward, D. B. (2004). A comparison of nonviolent, psychologically violent, and physically violent male college daters. *Journal of Interpersonal Violence, 19*, 1191-1200.

This brief report explores dating violence by comparing three groups of male college students (nonabusive, psychologically abusive only, and physically abusive). These men were compared on measures of impulsivity, problems with alcohol, life satisfaction, anger management skills, history of witnessing abuse, history of experiencing abuse, and relationship satisfaction. Data for this analysis were obtained from a sample of 115 male college students. Differences between the three groups of men were found in the levels of problems with alcohol, relationship satisfaction, and anger management skills. Anger management skills best differentiated the three groups of men leading to the conclusion that dating violence prevention and intervention strategies with male college students should address anger management skills.

4. Lynam, D. R., Caspi, A., Moffit, T. E., Wikström, P., Loeber, R., & Novak, S. (2000). The interaction between impulsivity and neighborhood context on offending: The effects of impulsivity are stronger in poorer neighborhoods. *Journal of Abnormal Psychology, 109*, 563-574.

This research blends 2 traditions of theorizing on the causes of crime, one focused on the role of individual differences and the other focused on structural and contextual variables. Two related studies examined the relations among impulsivity, neighborhood context, and juvenile offending. The first, cross-sectional study uses a large sample of 13-yr-old inner-city boys, whereas the second, longitudinal study offers a conceptual replication using 17-yr-old inner-city boys who are a subset of the original sample. Across both studies, results indicate that the effects of impulsivity on juvenile offending are stronger in poorer neighborhoods. Furthermore, nonimpulsive boys in poor neighborhoods were at no greater risk for delinquency than nonimpulsive boys in better-off neighborhoods.

5. Mills, J. F., Kroner, D. G., & Forth, A. E. (1998). Novaco anger scale: Reliability and validity within an adult criminal sample. *Assessment, 5*, 237-248.

Investigated the reliability and validity of the Novaco Anger Scale with two groups of correctional offenders, General Admissions and Violent Admissions. 204 predominantly White male offenders (aged 18-69 yrs) participated in the study. One-month test-retest reliability for the General Admissions group ranged from .78 to .91 using both similar (paper-pencil) and dissimilar (computerized) retesting methods, with lower scores occurring on retest. Significantly lower scores were found for the Violent Admissions group as compared with the General Admissions group. Concurrent validity was examined in the Violent Admissions group using three anger/aggression measures and clinical ratings of eight anger dimensions. Stronger correlations with other similar anger measures than with negative affect indices revealed concurrent and discriminant validity.

6. Nussbaum, D., Collins, M., Cutler, J., Zimmerman, W., Farguson, B., & Jacques, I. (2002). Crime type and specific personality indicia: Cloninger's TCI impulsivity, empathy and attachment subscales in non-violent, violent and sexual offenders. *American Journal of Forensic Psychology, 20*, 23-56.

Investigated personality differences in violent, nonviolent and sexual offenders incarcerated at a medium security federal penitentiary. The Temperament and Character Inventory was administered to 185 male inmates specifically to obtain, among other data, personality measures of impulsiveness, attachment, and empathy. Criminal records were reviewed and crime type was assigned according to offense history. Age at first offense was also examined. Violent offenders were found to be more impulsive and less empathic than nonviolent offenders. Sexual offenders were found to be less impulsive, more empathic, more attached, and to have a later age of onset than all other offenders. The authors conclude that identifying variables associated with different types of criminal behavior may have important implications for treatment.

7. Samuels, J., Bienvenu, O. J., Cullen, B., Costa, P. T. J., Eaton, W. W., & Nestadt, G. (2004). Personality dimensions and criminal arrest. *Comprehensive Psychiatry, 45*, 275-280.

Previous studies have implicated antisocial personality disorder in criminal behavior, but little is known about the association between "normal" personality dimensions and arrest. We investigated the relationships between these personality dimensions and prior arrest in a sample of adults participating in a longitudinal epidemiological study. Between 1993 and 1999, psychiatrists re-examined subjects who were originally interviewed in Baltimore in 1981 as part of the Epidemiologic Catchment Area study; the psychiatrists diagnosed Axis I and Axis II disorders according to DSM-IV criteria. A total of 611 subjects also completed the Revised NEO Personality Inventory (NEOPI-R), which assesses five broad factors and 30 facets of normal personality. History of criminal arrest in Maryland in the period 1981 to 1993 was determined from the state criminal justice database. Student's *t* test and logistic regression were used to evaluate relationships between NEO personality scores and prior arrest. Controlling for demographic characteristics, alcohol or drug use disorders, and DSM-IV personality disorder scores, the odds of prior arrest increased with scores on angry hostility, impulsiveness, and excitement-seeking dimensions. Prior arrest was inversely related to scores on trust, straightforwardness, compliance, modesty, dutifulness, and deliberation dimensions. The results suggest that specific dimensions of normal personality are related to criminal arrest in the community.

8. Scott, K. D., Schafer, J., & Greenfield, T. K. (1999). The role of alcohol in physical assault perpetration and victimization. *Journal of Studies on Alcohol, 60*, 528-536.

Examined the influence of lifetime alcohol use and drinking-in-the-event on risk of physical assault (PHA) perpetration and victimization, while controlling for effects of additional demographic and personality characteristics associated with violence or alcohol use. Secondary analyses were performed on data collected from 2,058 adults interviewed in a national alcohol survey. Approximately 11.5% of the Ss reported having committed a PHA, and 16.6% of the Ss reported having been the victim of a PHA since the age of 12 yrs. Gender, age, education, lifetime drinking history, and an interaction between age and impulsivity were associated with

PHA perpetration. Marital status, impulsivity, and lifetime drinking history were associated with PHA victimization. Analyses on the subsample of Ss reporting a PHA indicate that drinking-in-the-event by both perpetrator and victim was associated with men's, but not women's, experiences.

9. Stevenson, J., Meares, R., & Comerford, A. (2003). Diminished impulsivity in older patients with borderline personality disorder. *American Journal of Psychiatry*, *160*, 165-166.

The aim of this study was to test, in terms of impulsivity, the hypothesis that borderline personality disorder "burns out" with age. Linear regression analyses, with age as a predictor variable, were conducted on subsection scores of the Revised Diagnostic Interview for Borderlines (DIB-R) for 123 individuals (aged 18-52 yrs) with a diagnosis of borderline personality disorder who were accepted into an outpatient-based psychotherapy program. The subsection scores of the DIB-R allow quantification of the core features of the disorder: affective disturbance, relationship disturbance, cognitive disturbance, and impulsive behavior. Older patients with borderline personality disorder showed less impulsivity than younger patients, but there was no difference in terms of affect disturbance, identity disturbance, and interpersonal problems.

10. Suter, J. M., Byrne, M. K., Byrne, S., Howells, K., & Day, A. (2002). Anger in prisoners: Women are different from men. *Personality & Individual Differences*, *32*, 1087-1100.

Anger can contribute to offending behavior and to behavioral difficulties in prison environments. As such, training in self-management of anger has been a common strategy in an attempt to reduce such behaviors. However, the vast majority of research into anger in offenders has been conducted using male participants. This has led to a lack of knowledge specific to the treatment needs of angry female prisoners. This paper investigated the extent to which a sample of Australian female offenders differs from Australian male offenders in their expression and experience of anger. 50 women (aged 18-52 yrs) and 121 men (aged 18-68 yrs) were given the State-Trait Anger Expression Inventory and the Novaco Anger Scale. The data collected from female participants was then contrasted with identical data collected from male inmates in the separate study. Results indicate significant main effects for gender in a majority of the subscales of the two measures, with significant differences found in both the experience and expression of anger for male and female prisoners.

11. Wang, E.W., & Diamond, P.M. (1999). Empirically identifying factors related to violence risk in corrections. *Behavioral Sciences and the Law*, *17*, 377-389.

The authors used structural modeling to predict institutional aggression among 385 male mentally ill offenders using the predictors of anger, antisocial personality style, current violent offense, ethnicity, and impulsivity. Measures included the Barratt Impulsiveness Scale, the Buss-Perry Aggression Questionnaire, the Personality Assessment Inventory, age, ethnicity, current violent offense, victim injury from current offense, and institutional incidents of physical and verbal aggression. The model fit the data, and accounted for 94% and 87% of the variance of physical and verbal aggression, respectively. Results indicate anger, antisocial personality style, and impulsivity are stronger predictors of institutional aggression than are ethnicity and current

violent offense; anger was the best predictor. Results suggest dynamic variables such as anger can be targeted for clinical intervention to reduce institutional violence.

Additional Resource with Contradictory Findings for C4 – Abstracts Provided

1. Hanson, R. K., & Bussière, M. T. (1998). Predicting relapse: A meta-analysis of sexual offender recidivism studies. *Journal of Consulting and Clinical Psychology, 66*, 348-362.

Evidence from 61 follow-up studies was examined to identify the factors most strongly related to recidivism among sexual offenders. On average, the sexual offense recidivism rate was low (13.4%; $n = 23,393$). There were, however, subgroups of offenders who recidivated at high rates. Sexual offense recidivism was best predicted by measures of sexual deviancy (e.g., deviant sexual preferences, prior sexual offenses) and, to a lesser extent, by general criminological factors (e.g., age, total prior offenses). Those offenders who failed to complete treatment were at higher risk for reoffending than those who completed treatment. The predictors of nonsexual violent recidivism and general (any) recidivism were similar to those predictors found among nonsexual criminals (e.g., prior violent offenses, age, juvenile delinquency). Our results suggest that applied risk assessments of sexual offenders should consider separately the offender's risk for sexual and nonsexual recidivism.

2. Loza, W., & Loza-Fanous, A. (1999). Anger and prediction of violent and nonviolent offenders' recidivism. *Journal of Interpersonal Violence, 14*, 1014-1029.

Investigated the usefulness of assessing anger for the prediction of violent and nonviolent recidivism. Four risk/need measures and 4 anger inventories were administered to 252 Canadian federally incarcerated male offenders (aged 17-64 yrs). The association between anger and recidivism was investigated by: (1) comparing groups of participants classified to different levels of risks for recidivism according to their scores on actuarial measures of recidivism and their scores on measures of anger; (2) canonical correlation between the offenders' scores on measures of risk for recidivism and the anger inventories; and (3) correlating the clinical variables of age at admission, number of past offenses, and number of violent offenses with offenders' scores on measures of anger. The results indicate that all comparisons were not significant. Results of this study shed doubts on the usefulness of assessing anger when predicting violent and nonviolent recidivism.

3. Loza, W., & Loza-Fanous, A. (1999). The fallacy of reducing rape and violent recidivism by treating anger. *International Journal of Offender Therapy & Comparative Criminology, 43*, 492-502.

Investigated the usefulness of targeting anger for the treatment of violent offenders and rapists. Four anger inventories were administered to 271 Canadian incarcerated male offenders (aged 17-64 yrs) comprised of 4 groups of offenders (violent vs non-violent and rapists vs non-rapists). These groups were compared according to their scores on the measures of anger. Results show that there were no differences between violent offenders and non-violent offenders and between rapists and non-rapists on anger measures. The authors' discussion casts doubt on the usefulness of targeting anger for the treatment of rapists and violent offenders and on the effect of these programs on reduction of recidivism.

4. Mills, J. F., & Kroner, D. G. (2003). Anger as a predictor of institutional misconduct and recidivism in a sample of violent offenders. *Journal of Interpersonal Violence, 18*, 282-294.

Investigated the relationship of self-report anger measures that measured anger within the context of interpersonal conflict or the outward expression of anger with criminal history, institutional misconduct, and recidivism. An incarcerated sample of 102 violent male offenders (aged 18-55 yrs) participated in the study. Self-reported anger was not associated with prior convictions and incarcerations. Selective scales were associated with minor institutional misconduct, but these relationships did not remain once impression management was accounted for. There was no relationship between anger and postrelease performance. Implications regarding the prediction of institutional misconduct and recidivism are discussed.

Narrative Review of C4

1. Newhill, C. E., & Mulvey, E. P. (2002). Emotional dysregulation: The key to a treatment approach for violent mentally ill individuals. *Clinical Social Work Journal, 30*, 157-171.

Prior research has suggested that psychopathy, substance abuse, and the presence of a personality disorder increase an individual's risk for violence toward others. Substantial clinical literature has established emotional dysregulation as a risk marker for violence toward self. It is hypothesized that emotional dysregulation may be an important component in a constellation of risk markers for violence toward others and may interact with psychopathy and substance abuse in individuals with personality disorders to enhance risk for violence. If these hypothesized relationships exist, it suggests that the development of an intervention approach which directly targets these factors may hold promise. A potential intervention approach based on dialectical behavioral therapy, with case illustrations, is provided.

C5 Unresponsive to Treatment/R4 Noncompliance with Remediation Attempts

1. Kunz, M., Yates, K.F., Czobor, P., Rabinowitz, S., Lindenmayer, J.P., & Volavka, J. (2004). Course of patients with histories of aggression and crime after discharge from a cognitive-behavioral program. *Psychiatric Services*, 55, 654-659.

→ Community, General Recidivism

Patient outcomes following discharge from a long-term behaviorally based cognitive skills program were investigated among 85 patients who successfully completed the System for Treatment and Abatement of Interpersonal Risk (STAIR) program, who were released to the community, and who completed a minimum follow-up of six months.

Data were collected through a review of the patient's clinical records. Patients were administered a battery of psychological tests as part of the clinical evaluation for the STAIR program. Data on intellectual functioning as measured by either the Wechsler Adult Intelligence Scale-Revised (WAIS-R) or the Beta-II were available for 66 patients. Seventy-five patients were administered the PCL:SV. Case managers' monthly reports were obtained for each STAIR patient who was discharged to the community. Information about adherence to outpatient treatment, substance use or abuse, inpatient psychiatric readmissions, post-discharge arrests and violent behaviors were included in the reports and constituted the follow-up data.

Based on the follow-up data, patients were classified into one of three mutually exclusive groups: (1) stable (patients who maintained psychiatric stability and who had no arrests or hospitalizations); (2) rehospitalized (patients who experienced psychiatric relapse); and (3) arrested or rearrested (patients who criminally recidivated). Patients were assigned to the arrest group if they were hospitalized and rearrested at different times.

The follow-up period ranged from six months to four years, with a mean duration of 548 days ($SD = 316$ days) for the stable group, 656 days ($SD = 264$ days) for the rehospitalized group, and 701 days ($SD = 247$ days) for the rearrested group. The differences in follow-up days between groups were not statistically significant. Of the original group of 85 participants, 33 were stable, 35 were rehospitalized, and 17 were arrested. Patients who were not rearrested after discharge had significantly fewer arrests for violent offenses prior to STAIR treatment than those who were rearrested after discharge ($p = .04$).

The rearrest group was significantly more likely than the stable group both to have a diagnosis of ASPD and to have a learning disability. Rearrested patients scored significantly higher on the PCL:SV than the other two groups ($M = 19.2$, $SD = 2.9$ vs. $M = 16.1$, $SD = 3.5$ for the rehospitalized group and $M = 15$, $SD = 4.4$ for the stable group; $F = 6.12$, $df = 2, 72$, $p < .01$).

Substance abuse was graded on a 3-point scale (1 = no evidence of substance abuse, 2 = suspected use, 3 = clear signs of substance abuse). For each patient an average score was calculated over the follow-up period: rearrest ($M = 1.56$, $SD = .51$); stable ($M = 1.17$, $SD = .43$); and rehospitalized ($M = 1.38$, $SD = .43$), $F (df = 2) = 4.73$, $p < .01$. Post hoc pairwise comparison

yielded a significant difference between the stable group and the rearrested group ($p < .01$) and between the rehospitalized group and the rearrested group ($p < .05$).

Finally, compliance with medication treatment was assessed on a 4-point scale (1 = compliance was ensured, 2 = compliance was likely, 3 = suspected noncompliance, 4 = clear noncompliance). The average score for each patient was calculated for the follow-up period. Mean levels of noncompliance across groups were as follows: rearrested ($M = 2.04$, $SD = .75$); stable ($M = 1.3$, $SD = .69$); rehospitalized ($M = 1.52$, $SD = .73$), $F = 5.99$, $p < .01$. Post hoc pairwise comparison revealed that the rearrested group demonstrated significantly greater medication noncompliance than the stable group ($p < .01$).

2. Solomon, P., Draine, J., & Marcus, S.C. (2002). Predicting incarceration of clients of a psychiatric probation and parole service. *Psychiatric Services*, 53, 50-56.

→ Community (general aggression)

The extent to which clinical characteristics, psychiatric status, and use of mental health services explain incarceration for technical violations of probation or parole rather than incarceration for new offenses was examined. Participants were recruited from the probation and parole system of a large city on the East Coast of the United States. This county probation and parole system supervises individuals who are sentenced to probation or who are paroled from sentences of less than two years.

At the time of the study, two specialized probation units were assigned psychiatric cases. The 327 participants who consented to be screened were briefly interviewed and screened for lifetime diagnoses of depression, mania and schizophrenia with the Quick Diagnostic Interview Schedule (QDIS). Those who screened positive for one of the three mentioned diagnoses were asked to participate.

The final sample ($N = 250$) was monitored with a protocol that included interviews with the client and interviews with probation and parole officers regarding each client every three months for one year or until the client was incarcerated (whichever came first). The client interview assessed quality of life, service use, motivation to cooperate with criminal justice stipulations and mental health treatment, substance use, and mental health status. The client's incarceration data were tracked for 15 months (i.e., three months beyond the 1-year interview). Data were obtained for all clients from at least one three-month follow-up time period. The BPRS was used to assess clinical symptoms. Addiction was assessed with the severity of drug and alcohol use scale of the Addiction Severity Index (ASI). Participants also were administered a measure of attitude toward psychiatric medications that was modified from a self-report scale by Hogan and colleagues (1983). Interviews with probation/parole officers included assessments of patients' severity of substance use developed for use by clinicians, as well as assessments of patients' dangerousness to self or others.

Classifications of whether incarcerations were for new charges or for technical violations were based on information from probation/parole officers' reports and from open-ended interviews with patients and officers.

Participants mainly were men (73%) who were African-American (65%; 23% White; 8% Hispanic; 5% 'other'). The mean age of the sample was 34.6 years ($SD = 9.1$ years). The diagnostic distribution was as follows: 15% schizophrenia only, 4% mania only, 26% depression only, 2% both schizophrenia and mania, 18% both schizophrenia and depression, 14% both mania and depression, and 22% schizophrenia, mania, and depression. Thirty-four percent of the sample was incarcerated within 15 months of the baseline interview; 16% were for technical reasons and 18% were for new criminal charges.

Regarding the use of psychiatric services, 40% of the sample was hospitalized during the follow-up period, and 31% reported receiving psychiatric crisis services. A total of 68% reported receiving any individual, family, or group therapy at some point. Thirty-nine percent reported receiving substance abuse treatment, and 31% reported receiving intensive case management.

Three variables were predictive of both incarceration on a new charge vs. no incarcerations, and arrest for technical violation vs. no incarceration: (1) **doubting the helpfulness of psychiatric medications (new charge: OR = 4.89, 95% CI = 1.76 - 13.63, $p < .01$; technical violation: OR = 3.10, 95% CI = 1.04 - 9.28, $p < .05$)**; (2) **officer report of low treatment motivation (new charge: OR = 2.72, 95% CI = 1.35 - 5.49, $p < .01$; technical violation: OR = 7.78, 95% CI = 3.28 - 18.46, $p < .001$)**; and (3) any officer assessment of danger to others (new charge: OR = 2.68, 95% CI = 1.32 - 5.40; technical violation: OR = 3.79, 95% CI = 1.71 - 8.39, $p < .001$).

Four variables were associated with incarceration for a new charge but not with incarceration for a technical violation: (1) middle to older age (OR = .36, 95% CI = .18 - .74, $p < .05$); (2) educational attainment (OR = .42, 95% CI = .08 - .22, $p < .01$); (3) any officer assessment of disability (OR = .36, 95% CI = .18 - .70, $p < .01$); and (4) routine pattern of supervision by officers (OR = .24, 95% CI = .12 - .47, $p < .001$).

Eight variables were associated with incarceration on a technical violation only: (1) never married (OR = 3.18, 95% CI = 1.39 - 7.26, $p < .01$); (2) more than 3 lifetime arrests (OR = 4.03, 95% CI = 1.87 - 8.71, $p < .001$); (3) arrested before 20 years old (OR = .38, 95% CI = .19 - .80, $p < .01$); (4) **any client report of psychiatric care noncompliance (OR = .13, 95% CI = .05 - .39, $p < .001$)**; (5) any psychiatric hospitalization during follow-up period (OR = 3.84, 95% CI = 1.58 - 9.33, $p < .01$); (6) any group or individual therapy during follow-up period (OR = .16, 95% CI = .05 - .49, $p < .001$); (7) client taking medication (OR = 9.46, 95% CI = 2.61 - 34.33, $p < .001$); and (8) officer assessment of danger to self (OR = .20, 95% CI = .09 - .48, $p < .001$).

The results of a logistic regression that directly compared clients who were incarcerated for new charges with those who were incarcerated for a technical violation indicated that two variables showed significant differences. Clients who were incarcerated on a technical violation were six times as likely to have received any intensive case management services (OR = 6.09, 95% CI = 1.7 - 21.7; $\chi^2 = 8.34$, $df = 1$, $p < .01$) and more likely to have had high scores on the hostility

subscale of the BPRS (OR = 3.0, 95% CI = 1.1 - 7.9, $\chi^2 = 4.86$, $df = 1$, $p < .01$) than those who were incarcerated for a new charge.

3. Swanson, J.W., Swartz, M.S., Borum, R., Hiday, V.A., Wagner, H.R., & Burns, B.J. (2000). Involuntary out-patient commitment and reduction of violent behavior in person with severe mental illness. *British Journal of Psychiatry*, 176, 324-331.

→ Community Violence

This study investigated whether involuntary outpatient commitment (OPC) may help to reduce the incidence of violence among persons with severe mental illness. Patients were screened sequentially from a population of involuntarily hospitalized patients who had been ordered to undergo a period of OPC upon discharge. Patients were eligible for participation if they were 18 years of age or older; had a diagnosis of schizophrenia, schizoaffective disorder, or other psychotic disorder or major affective disorder; their disorder was of one year or more in duration; had significant functional impairment in activities of daily living; had intensive treatment within the past two years; were a resident of one of nine counties participating in the study; and were awaiting a period of court ordered OPC. The OPC criteria in North Carolina include the diagnosis of a severe mental illness and mental status limiting a person's ability to seek or comply voluntarily with treatment, and the likelihood that without treatment the person would decompensate to a point of dangerousness or grave disability.

Patients were randomly assigned to a control or an experimental group. Those assigned to the control group were released from OPC and received immunity from any OPC for the year of the study (a special arrangement with the court was made for this). Patients in the experimental group received, by law, an initial period of OPC, but no longer than 90 days. Following the initial 90 day period, a renewal for commitment could be made for a period of up to 180 days. One exception to the random assignment was that patients with a recent history of serious assault involving weapon use or physical injury to another person in the preceding year were automatically assigned to the experimental group and had to undergo at least the initial 90 day period of OPC as required (hereafter referred to as the OPC violence group). All patients received case management and other outpatient treatment services at one of four participating area mental health programs.

The baseline sample consisted of 331 patients and at the 12-month follow-up 69 patients were lost or had withdrawn. The final sample comprised 262 patients: 114 controls, 102 in the OPC group, and 46 in the OPC violence group. At baseline, data were collected through an interview with the patient and a family member (or other informant who knew the subject well) and a review of hospital records. Follow-up interviews were conducted every four months with the patients, case manager, and collateral informant. Hospital admissions and outpatient service records were reviewed as well.

Incidence of violence was assessed from three sources: the patient, the case manager, and the family member. Every four months patients were asked whether they had been picked up by police or arrested for physical assault on another person, had been in fights involving physical

contact or had threatened someone with a weapon. Family members and case managers were asked comparable questions about the patient's behavior. A composite index was constructed to measure whether at least one violent act was reported by any source during the year of the study.

Psychiatric symptoms were assessed with the Brief Symptoms Inventory (BSI); only the total score and a subscale for paranoid symptoms were used in this study. Functional impairment was measured using the Global Assessment Functioning (GAF) scale. Insight was measured by the Insight and Treatment Attitudes Questionnaire (ITAQ). The Duke Social Support Scale was used to assess social support. Substance use and misuse were assessed by combining interview data from the three sources and the hospital records from baseline. Substance use was defined as drinking alcohol or using illicit drugs once to several times per month or frequently. Substance misuse was defined as the occurrence of any problems related to alcohol or drug use (with family, friends, job, police, physical health) or any recorded diagnosis of psychoactive substance use disorder. The interviews with the patient, collateral informant and case manager were used to measure medication adherence. If a respondent was prescribed psychotropic medications but reportedly never took them or only took them sometimes he/she was described as non-adherent. All service encounters for case management, medication, psychotherapy, and other outpatient services were summed and treated as a single index: regular treatment was regarded as three or more out-patient service encounters per month in the community.

Over half of the sample ($n = 138$) was 18-39 years of age; the remaining patients ($n = 124$) were 40-65 years of age. Participants mostly were men ($n = 140$) and African American ($n = 172$; White/other = 90). Sixty-eight percent of the sample had a diagnosis of a psychotic disorder, 28% had a diagnosis of bipolar disorder, and 4% had a diagnosis of recurrent major depression. A co-occurring personality disorder was diagnosed in 13% of the sample. In the four months prior to hospital admission, alcohol and drug use (57%), medication non-compliance (73%) and violent behavior (51%) were common.

Bivariate analyses indicated that non-adherence with prescribed psychotropic medications was a key correlate of violent behavior in the follow-up year: 41.6% of those who did not adhere to prescribed medication regimes were violent whereas 25.5% of those who took their medications as prescribed were not (Fishers' exact test, two-tailed, $p < .05$).

Substance misuse problems also were found to be an important correlate of violent behavior in the follow-up year. No significant difference in the prospective rate of violence between the OPC group (32.3%) and the control group (36.8%) was found (patients with a history of serious violence were excluded). A separate analysis was conducted in which patients with a history of serious violence were included and the OPC intervention was redefined as receiving at least six-months of court ordered treatment. This analysis indicated that the extended OPC group had a significantly lower incidence of violence during the year: 26.7% vs. 41.6% (Fishers' exact test, one-tailed: $p = .049$; two-tailed: $p = .025$).

Staged logistic regression analysis with stepwise inclusion was conducted to test the effect of OPC on reduced violence in the context of relevant covariates. **An initial model revealed that extended OPC was associated with significantly lower odds of any violent behavior during the year of the study, controlling for baseline history of violence (OR = .42, $p < .05$).** In

model 2, being young, single, and having a low degree of perceived social support were identified as significant demographic risk factors. In model 3, substance misuse was a significant predictor of violence. However, when this and the demographic factors were controlled for, respondents who received more than 180 days of OPC were only about one-third as likely to commit a violent act during the year compared to the control group (OR = .35, $p < .01$). Patients who received 1-179 days of OPC did not differ from the control group for risk of violence. The risk of violence was 3 times greater (OR = 3.19, $p < .01$) among patients who misused substances and did not take medications as prescribed during the follow up period.

Based on the finding noted above, two composite variables were coded for subsequent analysis: clinical risk status at baseline, and change in clinical risk status at follow-up. The highest change scores were given to those who showed improvement from baseline to follow-up with regards to both substance misuse and non-adherence to medications. In bivariate analysis, patients who received extended OPC attained significantly better mean scores on the index (1.8 vs. 1.1; mean square = 14.2; $F = 4.79$; $p < .05$).

Finally, staged multivariate analysis showed that extended OPC alone did not significantly reduce the risk of violence. It was the combination of at least 180 days of OPC with an average of three or more out-patient visits per month in the community that showed a significant effect in reducing violence (OR = .37, $p < .05$). In this model, the predicted probability of violence was reduced from 48% to 24%, which the authors attributed to extended OPC and regular out-patient services provision.

Model 2 showed that combined improvements in medication adherence and substance misuse status was a significant predictor of reduced violence, with approximately 20% reduction with each unit improvement. The final model showed that patients who received the high intervention, who remained free of substance misuse, and who adhered to prescribed medications had the lowest likelihood of any violence (13% predicted probability).

4. Walsh, E., Gilvarry, C., Samele, C., Harvey, K., Manley, C., Tyrer, P., Creed, F., Murray, R., & Fahy, T. (2001). Reducing violence in severe mental illness: Randomised controlled trial of intensive case management compared with standard care. *British Medical Journal*, 323, 1093-1097.

→ Community Violence

*Potentially contradictory findings

This study investigated whether intensive case management reduces violence in patients with psychosis in comparison with standard case management. Participants were recruited as part of the UK700 randomised controlled trial of intensive case management efficacy for patients with psychosis. Participants were recruited from one of four inner city mental health services (three in London, one in Manchester) between February 1994 and April 1996, and recruitment occurred either at the point of discharge or while they were receiving care in the community. For inclusion in this study, patients must have been between the ages of 18 and 65, had a diagnosis of psychosis according to research diagnostic criteria, and had at least two inpatient admissions for

psychotic illness (with one in the previous two years). Patients were excluded if they had a primary diagnosis of substance misuse or organic brain damage.

The study was designed so that only one key variable -- size of caseload -- differed between the experimental and control groups: intensive case managers had caseloads of 10-15 patients and standard case managers had 30 or more patients. Five types of events were recorded throughout the study: face to face contact with patient, contact by telephone (>15 minutes), contact with carer (>15 minutes), coordination (contact with other professional agencies; >15 minutes), and attempted (failed) face to face contact. Case managers were monitored to collect this information. The primary focus of the face to face contact with the patient was categorized into 11 types, including housing, finance, medication, and criminal justice system.

Patients were randomly assigned to either the intensive case management or the standard care group. Participants were interviewed at baseline and two-years after randomization. The primary outcome measure for this study was physical assault in the two year study period. A positive score on any of the three sources of data indicated a positive score for assault. The frequency or seriousness of the assault was not recorded. The first source of information was self-report from the patient when asked whether they had physically assaulted anyone in the two year period. When an interview with the patient was not possible, an attempt was made to interview a carer. The second source was the case manager, who was interviewed in person or by telephone and asked about any physical assault committed by their patients. Finally, case notes from all sites were inspected individually for evidence of physical assault. A battery of instruments administered at baseline was used to assess 12 sociodemographic and 13 clinical risk factors for violence (which were not specified in the article). Criminal records, including convictions for violence, were obtained from the Home Office for all participants. The author's did not include violent convictions as a result of administrative issues in the data collection process.

The final sample ($N = 708$) comprised 353 patients in the intervention group and 355 in the control group. No demographic characteristics of this sample are provided as they are described in a previous study. The intensive case management group provided more than twice as much care to the patients than the standard care group ($M = 4.41$ events per 30 days vs. $M = 1.94$ events per 30 days). The mean duration of face to face contacts was 40.6 minutes ($SD = .3$) minutes for the intensive group and 37.4 minutes ($SD = 24.8$) in the standard group. Patients managed in the intensive group had significantly more contacts related to the criminal justice system, engagement, finance, and medication.

Information regarding assault was available for all patients from at least one data source. One hundred and fifty-eight (22%) patients verbally assaulted another person during the two-year study period. Violent behavior was reported by 104 (66%) of the 158 patients. Combining data from case notes and interviews with patients resulted in 143 (91%) of the 158 patients being reported as having been violent. A further 15 (9%) patients were included after interviews with the case managers. Sixteen (10%) patients were reported as violent by all three data sources. **The group who committed assault was fairly evenly split between patients in the intensive group ($n = 80, 23%$) and patients in the control group ($n = 78, 22%$), resulting in no significant difference between the groups.** The relative risk for committing assault in the intensive group compared with the control group was 1.03 (95% CI = .72 - 1.46). The difference in prevalence of

violence between the groups remained non-significant when previous violence, younger age, drug misuse, victimization, and learning difficulties (all previously identified risk factors) were adjusted for.

5. Zanis, D.A., Mulvaney, F., Coviello, D., Alterman, A.I., Savitz, B. & Thomson, W. (2003). The effectiveness of early parole to substance abuse treatment facilities on 24-month criminal recidivism. *Journal of Drug Issues*, 33, 223-236.

→ Community Reconviction (not necessarily violence)

This naturalistic study compared the criminal justice outcomes between offenders paroled early from jail directly to a substance abuse treatment facility (SATF) and offenders paroled to the community. The sample consisted of 569 offenders incarcerated in an urban jail in Northeastern United States and who met the following inclusion criteria: (1) served at least half of their minimum sentence, (2) had a range of 6 months to 1 year remaining on their prison term, (3) met the DSM-III-R criteria for substance abuse or dependence, and (4) voluntarily elected to participate in the alternative sentencing project. Offenders who met the eligibility requirements were evaluated, using the American Society of Addiction Medicine criteria, to determine whether the appropriate level of care placement was an Intensive Outpatient Program (IOP) or a Non-Hospital Residential (NHR) treatment program prior to parole. After receiving approval for participating in the project, the offender was placed on a waiting list and remained in jail until a treatment slot became available, at which time s/he was transported directly to the substance abuse treatment program for admission.

The naturalistic design of the study emerged due to the treatment placement waiting lists. A total of 74 (13%) offenders placed on the waiting list were discharged without being paroled to a SATF, thus a two condition design was formed. Overall, 495 offenders were transferred to a SATF and placed under parole and 74 offenders were paroled to the community without treatment. Offenders in the comparison group received standard parole services, which consisted of monthly monitoring of offender progress and referral to social services for rehabilitation. The majority of the participants were African American (74%) and men (91%). The mean age of the sample was approximately 31 years (experimental $M = 30.6$, $SD = 7.3$; control $M = 30.2$, $SD = 7.6$). Criminal history records indicated an average of 3.6 previous criminal convictions. The most commonly identified substances of abuse/dependence were cocaine (77%) and alcohol (51%). Over half (56.6%) of the participants in the experimental group were treated in a NHR program and the remaining patients (40.4%) were treated in an IOP. Of the offenders referred to a SATF, only 37% completed the minimum 6 months of treatment requirement in either type of facility, the average length of stay was 4.7 months (range: 0-22 months). Upon discharge from either IOP or NHR programs, parolees were referred to aftercare programs. A parole officer was assigned to all offenders during the six-month sentence to a SATF. Contact with parole officers (PO) varied due to the caseload of the PO, although there was a minimum monthly requirement for contact with one's PO.

Approximately 24 months following parole from jail a criminal history profile was obtained (from the district attorney's central repository database) for all 569 offenders. The records were

reviewed for any new criminal conviction in which the offender was arrested, charged, and convicted following parole from jail. Because of an approximately 2-month lag in new convictions being posted in the database, new convictions from the 23rd and 24th month were not recorded.

Of the offenders paroled to a SATF, 22% were convicted of a new crime, whereas 34% of the offenders who received standard parole were reconvicted. This difference was statistically significant ($\chi^2 = 4.57$, $df = 1$, $p = .033$). A series of bivariate analyses indicated that age, cocaine abuse/dependence in the immediate six months prior to baseline incarceration, number of criminal convictions, and parole condition each were independently correlated with new criminal convictions at the 24-month assessment point.

The influence of treatment condition after adjusting for the contribution of all other variables was evaluated by performing a hierarchical, stepwise logistic regression. The four predictors were entered sequentially in the following order: prior convictions, age, cocaine, and treatment condition. Results indicated that a greater number of prior convictions (OR = 1.15, 95% CI = 1.08 - 1.23, $p < .001$) and lower age (OR = .95, 95% CI = .95 - .98, $p = .001$) were statistically significant predictors of a new conviction. Cocaine abuse/dependence ($p = .06$) and treatment condition ($p = .08$) were still associated with a higher probability of predicting a new conviction at the 24-month period after the effects of the prior two variables were removed. **Untreated parolees who did not receive substance abuse treatment were 1.6 times (OR = 1.6, 95% CI = .94 - 2.79, $p = .08$) more likely than treated offenders to be convicted of a new crime after controlling for the other factors. Only 178 (37%) of the offenders paroled to SATF completed the required 6-month mandate to treatment and of these offenders only 21 (11.8%) were reconvicted. This is a statistically significant difference when compared to offenders who did not complete the 6-month requirement and were reconvicted ($n = 86$, 29%; $\chi^2 = 11.50$, $df = 1$, $p < .01$).**

Finally, no significant differences were found with regards to reconvictions between the two types of SAFT facilities (IOP and NHR).

Additional Relevant Sources Supportive of C5/R4 – Abstracts Provided

1. Burdon, W. M., Messina, N. P., & Prendergast, M. L. (2004). The California treatment expansion initiative: Aftercare participation, recidivism, and predictors of outcomes. *Prison Journal, 84*, 61-80.

This study explored possible predictors of participation in aftercare and 12-month return-to-custody (RTC) among 4,155 inmates who participated in prison-based therapeutic community treatment in California. The most consistent theme that emerged from this study was the importance of duration of time spent in treatment. Increased time spent in prison-based treatment predicted increased participation in aftercare and decreased 12-month RTC. Similarly, increased time spent in aftercare predicted decreased 12-month RTC. Those who participated in aftercare in urban counties spent longer periods of time in treatment and were less likely to be returned to custody within 12 months. The findings suggest that Hispanics rely more successfully on social and/or familial support systems than on aftercare postrelease. The findings also highlight the importance of education in facilitating postrelease reintegration and ensuring successful outcomes.

2. Duncan, J. C., & Rogers, R. (1998). Medication compliance in patients with chronic schizophrenia: Implications for the community management of mentally disordered offenders. *Journal of Forensic Sciences, 43*, 1133-1137.

The safe and effective management of mentally disordered offenders is a paramount concern in decisions for community placement. Treatment effectiveness is often vitiated by medication noncompliance. In the current study, clinical and sociodemographic correlates of treatment compliance were examined in 90 outpatients (aged 19-75 yrs) with schizophrenia. Level of medication compliance, assessed independently by treatment staff at two outpatient settings, resulted in 40 compliant, 38 noncompliant, and 12 partially compliant patients. Key symptoms associated with medication noncompliance were anger, delusions, and hallucinations. As an initial investigation, a stepwise discriminant analysis was moderately successful at predicting medication noncompliance. The implications of these findings to mentally disordered offenders are explored.

3. Ehmann, T. S., Smith, G. N., Yamamoto, A., McCarthy, N., Ross, D., & Au, T. et al. (2001). Violence in treatment resistant psychotic inpatients. *Journal of Nervous & Mental Disease, 189*, 716-721.

Sought to (1) ascertain the effect on rates of violence by varying its operational definition and (2) compare characteristics of violent and nonviolent patients. Aggressive behavior was recorded daily for every patient ($N = 78$; aged 17-65 yrs) during a 2-yr period. Standardized rating scales were used to rate psychopathology and functioning. Almost two thirds of patients were aggressive to others, and 26% violently assaulted another person. Official incident reports underestimated rates of violence to others, self-harm, and property damage. Multivariate predictive models that greatly improved accuracy over base rates showed that violent patients tended to be female, schizophrenic (nonparanoid type), and abusive of alcohol before admission. Violence is more common in treatment resistant psychotic inpatients than suggested by incident

reports. Standardized definitions of violence are urged in order to accurately study its prevalence and correlates. Models combining both historical/demographic and clinical data may enhance prediction of violence.

4. Hodgins, S., Lapalme, M., & Toupin, J. (1999). Criminal activities and substance use of patients with major affective disorders and schizophrenia: A 2-year follow-up. *Journal of Affective Disorders, 55*, 187-202.

Examined criminal activity and substance use of 30 male patients (aged 18-55) with major affective disorders and 74 with schizophrenia in a 2 yr follow-up study. At discharge, Ss were intensively assessed including diagnoses using Schedule for Schizophrenia and Affective Disorders and Research Diagnostic Criteria. During follow-up, alcohol and drug use were measured, subjectively and objectively. At discharge, the 2 groups were similar as to secondary diagnoses of antisocial personality disorder, drug abuse/dependence, socio-demographic characteristics, and criminal history, but more of the patients with major affective disorders than those with schizophrenia had a history of alcohol abuse/dependence. During the follow-up period, the 2 groups were similar as to rehospitalization, treatment intensity, and substance use. By the end of the follow-up period, 33% of the Ss with major affective disorders and only 15% of those with schizophrenia had committed crimes, most violent. Co-morbid antisocial personality disorder was associated with criminality among the Ss with schizophrenia but not among those with major affective disorders. Among these latter Ss, drug use and the intensity of outpatient care were associated with violent criminality.

5. Inciardi, J. A., Martin, S. S., & Butzin, C. A. (2004). Five-year outcomes of therapeutic community treatment of drug-involved offenders after release from prison. *Crime & Delinquency, 50*, 88-107.

With growing numbers of drug-involved offenders, substance abuse treatment has become a critical part of corrections. A multistage therapeutic community implemented in the Delaware correctional system has as its centerpiece a residential treatment program during work release--the transition between prison and community. An evaluation of this program followed 690 individuals. At 5 years, those who participated in the program were significantly more likely to be drug and arrest free. Furthermore, treatment graduates with or without aftercare had significantly greater probabilities of remaining both arrest free and drug free than did a no treatment comparison group in regular work release. Dropouts also were significantly more likely to be drug free, although not significantly less likely to have a new arrest than those without treatment. These data show that the implementation of such programs could bring about significant reductions in both drug use and drug-related crime.

6. Merrill, J. C., Alterman, A., Cacciola, J., & Rutherford, M. (1999). Prior treatment history and its impact on criminal recidivism. *Journal of Substance Abuse Treatment, 17*, 313-319.

Examined the hypothesis that treatment is a cumulative process and that treatment success is best viewed in terms of the patient's entire treatment history, rather than the index treatment episode. It was also hypothesized that the number of treatment interventions that a client has received over his/her lifetime is predictive of reduced criminal recidivism. 308 methadone- maintained

patients (mean age 40.7 yrs) with a primary heroin addiction were studied for 2 yrs post-treatment using post-treatment arrests as the dependent variable. Ss with 6 or more prior treatment episodes and who had been in treatment for 12 or more mo during the most recent episode averaged only 0.2 arrests in the 2-yr post-treatment period. Ss with no prior treatment, but 12 or more mo in the recent treatment averaged 0.88 arrests. Logistic analysis found that each prior treatment reduced the probability of a post-treatment arrest by 25%. Based on a linear regression, patients with 6 or more prior treatments averaged half the number of post-treatment arrests as someone with no treatments before the index episode.

7. Robbins, P. C., Monahan, J., & Silver, E. (2003). Mental disorder, violence, and gender. *Law & Human Behavior*, 27, 561-571.

Recent studies have reported comparable rates of violence among men and women with mental disorder, raising important issues for clinical risk assessment. This study examines the relationship between gender and violence using data from the MacArthur Violence Risk Assessment Study. Patients in acute psychiatric wards were interviewed 5 times over the year following their discharge to the community. Results showed some differences between men and women in the violence committed immediately following discharge, with rates for men being higher. But the prevalence of violence over the 1 year was similar for female and male discharged patients. However, there were substantial gender differences in the situational context of the violence committed. Men were more likely to have been drinking or using street drugs, and less likely to have been adhering to prescribed psychotropic medication, prior to committing violence. The violence committed by men was more likely to result in serious injury than the violence committed by women, and men were more likely than women to be arrested after committing a violent act. Women were more likely to target family members and to be violent in the home.

8. Rosenbaum, A., Gearan, P. J., & Ondovic, C. (2002). Completion and recidivism among court- and self-referred batterers in a psychoeducational group treatment program: Implications for intervention and public policy. *Journal of Aggression, Maltreatment & Trauma*, 5, 199-220.

Batterers treatment has become a central component in efforts to curb relationship aggression. However, debate continues over the relative effectiveness of batterers treatment both independent of, and in concert with, legal interventions. The present study examined the relationship between referral source (i.e., self-referred vs. court-mandated), participant characteristics, treatment length (i.e., 7, 10, and 20 wks), treatment completion, and recidivism in a sample of 326 men (aged 18-66 yrs old) who had completed at least one session of a batterers treatment program. Results indicate that court-referred men had a significantly higher treatment completion rate than self-referred men in the 20-session condition, but not in either of the shorter treatment lengths. Men who were exposed to their fathers' physical abuse of their mothers and men who have been aggressive in past relationships had significantly lower completion rates. Recidivism was lowest for men who had been court-referred and completed treatment. Treatment completion was associated with significantly lower rates of recidivism for court-referred but not self-referred participants.

9. Siegal, H. A., Wang, J., Carlson, R. G., Falck, R. S., Rahman, A. M., & Fine, R. L. (1999). Ohio's prison-based therapeutic community treatment programs for substance abusers: Preliminary analysis of re-arrest data. *Journal of Offender Rehabilitation*, 28, 33-48.

Evaluated the Ohio Department of Alcohol and Drug Addiction Services' prison-based therapeutic community (TC) for inmates (mean age 31.2 yrs) with histories of drug abuse. Arrests/charges following release from prison were compared among 487 inmates with TC experience and 242 inmates without TC treatment. Outcome measures were based on arrest and charge statistics. The results of survival analysis and Cox hazards model analysis indicate that length of time in TC was crucial to a positive outcome. Controlling for age, gender, ethnicity, and education, inmates who spent at least 180 days in a TC were significantly less likely than those with less time in treatment or no TC exposure to be re-arrested/charged with violent drug-related crimes 1-yr after release.

10. Small, M. (2001). Two year reconvictions in a rehabilitation centre. *Therapeutic Communities: International Journal for Therapeutic & Supportive Organizations*, 22, 153-166.

The criminal convictions of all Ley Community ex-residents admitted between March 1996 and December 1997 were analysed. The total group of 104 residents (92 men, 12 women) was subdivided into 4 categories dependent on the length of time spent in treatment, namely short, medium, long stay and those who completed the programme. Analysis of reoffending (regarding the number of crimes) gave reconviction rates of 104%, 58%, 31% and 8.5% respectively and showed a highly significant decrease in the number of crimes committed after the programme, dependent on the length of time spent in treatment. The results indicate that there is a significant effect of treatment closely related to the length of time spent in therapy, i.e., the longer a resident stays in the programme, the better the outcome.

11. Steinert, T., Sippach, T., & Gebhardt, R. P. (2000). How common is violence in schizophrenia despite neuroleptic treatment? *Pharmacopsychiatry*, 33, 98-102.

There is a large body of literature about increased figures for violence in schizophrenic in-patients and out-patients. The therapeutic efficacy of neuroleptics in coping with violent behavior in schizophrenics is well documented. However, little data is available about the treatment given to schizophrenics who behave violently. The authors performed an extensive chart review in an unselected sample of 138 patients with schizophrenic or schizoaffective disorder and first admission between 1990 and 1993, including in-patient episodes in the first two years after first admission. Staff records were reviewed for all notes on aggressive behavior (threats, physical aggression against persons and objects, and self-directed aggression) and coercive measures. For each incident, the number of days after the beginning of neuroleptic treatment was coded, 258 inpatient treatment periods with an average length of 78.5 days were evaluated; 226 lasted more than one week. 142 aggressive incidents were observed, of these 66% within the first week of neuroleptic treatment, 9% within the second. Results support the assumption that the increased figures for violence by schizophrenics are, at least in part, due to the lack of adequate treatment.

12. Swanson, J. W., Borum, R., Swartz, M. S., Hiday, V. A., Wagner, H. R., & Burns, B. J. (2001). Can involuntary outpatient commitment reduce arrests among persons with severe mental illness? *Criminal Justice & Behavior*, 28, 156-189.

Involuntary outpatient commitment (OPC) is a promising but controversial legal intervention that may reduce criminal justice contact in persons with severe mental illness (SMI). This article examines arrest outcomes in a 1-yr randomized study of OPC in 262 participants with SMI in North Carolina. Extended OPC was found to be significantly associated with reduced arrest probability (12% vs. 45%) in a subgroup with a prior history of multiple hospitalizations combined with prior arrests and/or violent behavior. Reduction in risk of violent behavior was a significant mediating factor in the association between OPC and arrest. In persons with SMI whose history of arrests is related directly to illness relapse, OPC may reduce criminal justice contact by increasing participation in mental health services.

13. Swanson, J. W., Swartz, M. S., Elbogen, E. B., Wagner, H. R., & Burns, B. J. (2003). Effects of involuntary outpatient commitment on subjective quality of life in persons with severe mental illness. *Behavioral Sciences & the Law*, 21, 473-491.

Recent evidence suggests that involuntary outpatient commitment (OPC), when appropriately applied, can improve adherence with psychiatric treatment, decrease hospital recidivism and arrests, and lower the risk of violent behavior in persons with severe mental illness (SMI). However, insofar as OPC involves legal coercion, the undesirable aspects of OPC could also exert a negative effect on quality of life. Involuntarily hospitalized subjects, awaiting discharge under outpatient commitment, were randomly assigned to be released or continue under outpatient commitment in the community after hospital discharge, and were followed for one year. Quality of life was measured at baseline and 12 months follow-up. Subjects who underwent longer periods of outpatient commitment had significantly greater quality of life as measured at the end of the 1 year study. Multivariable analysis showed that the effect of OPC on QOL was mediated by greater treatment adherence and lower symptom scores. However, perceived coercion moderated the effect of OPC on QOL. Involuntary outpatient commitment, when sustained over time, indirectly exerts a positive effect on subjective quality of life for persons with SMI, at least in part by improving treatment adherence and lowering symptomatology.

14. Swanson, J. W., Swartz, M. S., Essock, S. M., Osher, F. C., Wagner, H. R., & Goodman, L. A. et al. (2002). The social-environmental context of violent behavior in persons treated for severe mental illness. *American Journal of Public Health*, 92, 1523-1531.

Examined the prevalence and correlates of violent behavior by individuals with severe mental illness. Subjects (Ss) comprised 802 adults (mean age 41.9 yrs) diagnosed with schizophrenia, schizoaffective disorder, bipolar disorder, major depression, or other serious mental disorders. Ss completed questionnaires concerning violent behavior, victimization, and mental illness symptoms. Results show that 13% of Ss had exhibited violent behavior in the previous year. The 3 variables of past violent victimization, violence in the surrounding environment, and substance abuse constituted a cumulative association with risk of violent behavior. Those Ss who were victimized prior to age 16 but not afterwards were no more likely to commit violent acts than were those Ss who had never experienced violence. It is concluded that violence among

individuals with severe mental illness is related to multiple variables with compounded effects over the life span.

16. Swartz, M. S., Swanson, J. W., Hiday, V. A., Borum, R., Wagner, R., & Burns, B. J. (1998). Taking the wrong drugs: The role of substance abuse and medication noncompliance in violence among severely mentally ill individuals. *Social Psychiatry & Psychiatric Epidemiology*, *33*, S75-S80.

Examined potential predictors of serious violence among persons with severe mental illness (SMI), with a specific focus on the joint effect of substance abuse and medication noncompliance. 331 involuntarily admitted inpatients with SMI awaiting a period of court-ordered outpatient treatment (and, whenever feasible, family members or other informants) were interviewed. In addition, complementary data were gathered by review of involuntary commitment records and hospital records. Data collection included sociodemographic characteristics, illness history, clinical status, medication adherence, substance abuse, and violent behavior during the 4 mo preceding hospitalization. The combination of medication noncompliance and substance abuse was a significant predictor of serious violent acts in the community. Ss who had problems with both alcohol and illicit drug abuse appear to be at greatest risk for violence. These results suggest that reducing violence risk among Ss with SMI requires an aggressive approach to improving medication adherence in the context of integrated mental health and substance abuse treatment.

17. Swartz, M. S., Swanson, J. W., Hiday, V. A., Borum, R., Wagner, H. R., & Burns, B. J. (1998). Violence and severe mental illness: The effects of substance abuse and nonadherence to medication. *American Journal of Psychiatry*, *155*, 226-231.

331 involuntarily admitted inpatients (aged 18+ yrs) with severe mental illness who were awaiting a period of outpatient commitment were interviewed to gather data on sociodemographic characteristics, illness history, clinical status, medication adherence, substance abuse, insight into illness, and violent behavior during the 4 mo prior to hospitalization. Associations between serious violent acts and a range of individual characteristics and problems were analyzed by multivariate logistic regression. The combination of medication noncompliance and alcohol or substance abuse problems was significantly associated with serious violent acts in the community, after sociodemographic and clinical characteristics were controlled.

18. Swartz, M. S., Swanson, J. W., Hiday, V. A., Wagner, H. R., Burns, B. J., & Borum, R. (2001). A randomized controlled trial of outpatient commitment in North Carolina. *Psychiatric Services*, *52*, 325-329.

A randomized controlled trial of outpatient commitment (OC) was conducted in North Carolina to provide empirical data on involuntary OC and to evaluate its effectiveness in improving outcomes among persons with severe mental illnesses. A total of 331 involuntarily hospitalized patients awaiting discharge under OC were randomly assigned to be released or to undergo OC. Each received case management services and outpatient treatment. Participants in both groups were monitored for one year. After the initial 90-day OC order, a patient could receive a

renewable 180-day extension. Patients in the control group were immune from OC for one year. Information was obtained from self-reports and reports of several informants as well as from outpatient treatment, hospital, and arrest records. In most bivariate analyses, outcomes for the OC group and the control group did not differ significantly when the duration of OC was not taken into account. However, patients who underwent sustained OC and who received relatively intensive outpatient treatment had fewer hospital admissions and fewer days in the hospital, were more likely to adhere to community treatment, and were less likely to be violent or to be victimized.

19. Swartz, M. S., Swanson, J. W., Wagner, H. R., Burns, B. J., & Hiday, V. A. (2001). Effects of involuntary outpatient commitment and depot antipsychotics on treatment adherence in persons with severe mental illness. *Journal of Nervous & Mental Disease, 189*, 583-592.

Examines potential improvement in treatment adherence during a study of involuntary outpatient commitment among individuals with severe mental illnesses (aged 18-65 yrs). Involuntarily hospitalized Ss, awaiting discharge under outpatient commitment, were assigned to be released or continue under outpatient commitment after hospital discharge. A nonrandomized group with a recent history of serious violence was also studied under outpatient commitment. Randomized control and outpatient commitment groups did not differ significantly in group comparisons of treatment adherence. However, analyses of all Ss, including nonrandomized violent Ss, showed that those who underwent sustained periods of outpatient commitment (6 months or more) were significantly more likely to remain adherent with medication and other treatment, compared with those who underwent only brief outpatient commitment or none. Administration of depot antipsychotics also significantly improved treatment adherence independently of the effect of sustained outpatient commitment. Sustained periods of outpatient commitment may significantly improve adherence with community-based mental health treatment for persons with severe mental illness and thus may help improve other clinical outcomes affected by adherence.

20. Swartz, M. S., Swanson, J. W., Wagner, H. R., Burns, B. J., Hiday, V. A., & Borum, R. (1999). Can involuntary outpatient commitment reduce hospital recidivism?: Findings from a randomized trial with severely mentally ill individuals. *American Journal of Psychiatry, 156*, 1968-1975.

Evaluates the effectiveness of involuntary outpatient commitment in reducing rehospitalizations among individuals with severe mental illnesses. Ss (mean age 39.6 yrs) who were hospitalized involuntarily were randomly assigned to be released or to continue under outpatient commitment after hospital discharge and followed for 1 yr. Each S received case management services plus additional outpatient treatment. In bivariate analyses, the control and outpatient commitment groups did not differ significantly in hospital outcomes. However, Ss who underwent sustained periods of outpatient commitment beyond that of the initial court order had approximately 57% fewer readmissions and 20 fewer hospital days than control Ss. Sustained outpatient commitment was shown to be particularly effective for individuals with nonaffective psychotic disorders. In repeated measures multivariable analyses, the outpatient commitment group had significantly better hospital outcomes. However, in subsequent repeated measures analyses examining the role of outpatient treatment among psychotically disordered individuals, it was also found that

sustained outpatient commitment reduced hospital readmissions only when combined with a higher intensity of outpatient treatment.

21. Van Stelle, K. R., & Moberg, D. P. (2004). Outcome data for MICA clients after participation in an institutional therapeutic community. *Journal of Offender Rehabilitation, 39*, 37-62.

The current study assessed the effectiveness of a prison-based substance abuse treatment therapeutic community (TC) providing treatment to male inmates dually diagnosed with both substance abuse and mental health disorders. The findings show a short-term impact of the program on arrest after release, with program participants significantly less likely than comparison group offenders to be arrested or returned to prison within three months of release. Logistic regression analyses confirmed that program participants are more likely than the comparison group to be medication compliant, abstinent from substances, and more stable at three months after release. The analyses suggest that participation in the program increases the likelihood of medication compliance after release. The mediational model resulting from this study suggests that treatment participation directly impacts medication compliance. Medication compliance impacts substance use, and these two factors then combine to improve mental health stability. For this population, mental health stability leads to positive outcomes in the community. Medication compliance not only improves mental health stability, but also leads to a reduction or elimination of mental illness symptoms that decreases the need to self-medicate with substances. For these men, medication compliance is the pivotal factor in reducing recidivism after release. These outcome evaluation results indicate that program participation has a significant positive impact on the lives of participants after release. The primary outcome findings suggest that programs treating dually diagnosed offenders should continue to emphasize the importance of medication compliance. Medication compliance should be stressed not only during residential TC services, but during the provision of aftercare and outreach services as well. The current findings demonstrate the effectiveness of the treatment model for dually diagnosed offenders.

Narrative Reviews of C5/R4 – Abstracts Provided

1. Hodgins, S. (2001). The major mental disorders and crime: Stop debating and start treating and preventing. *International Journal of Law & Psychiatry*, 24, 427-446.

Addresses the relation between the major mental disorders and crime and violence. Emphasis is put on the methodological features of each type of investigation which limit the validity and/or generalizability of the results. The paper then presents a conceptual framework for undertaking research designed to unravel the etiology of criminal and violent behavior of persons who develop major mental disorders.

2. Monahan, J., Bonnie, R. J., Appelbaum, P. S., Hyde, P. S., Steadman, H. J., & Swartz, M. S. (2001). Mandated community treatment: Beyond outpatient commitment. *Psychiatric Services*, 52, 1198-1205.

Outpatient commitment, although often viewed as merely an extension of inpatient commitment, is only one of a growing array of legal tools used to mandate treatment adherence. The authors describe various forms of mandated community treatment. People with severe and chronic mental disorders often depend on goods and services provided by the social welfare system. Benefits disbursed by representative payees and the provision of subsidized housing have both been used as leverage to ensure treatment adherence. Many discharged patients are arrested for criminal offenses. Favorable disposition of their cases by a mental health court may be tied to participation in treatment. Under outpatient commitment statutes, judges can order committed patients to comply with prescribed treatment. Patients may attempt to maximize their control over treatment in the event of later deterioration by executing an advance directive. The ideological posturing that currently characterizes the field must be replaced by an evidence-based approach.

3. O'Reilly, R. L. (2001). Does involuntary out-patient treatment work? *Psychiatric Bulletin*, 25, 371-374.

This paper provides a review of controlled studies that have examined whether involuntary treatment in the community is effective. A number of the studies have looked at outcomes apart from hospitalisation, including adherence to follow-up treatment, violent behavior, quality of life, stability of residence and ability to work. It is concluded that involuntary out-patient treatment can reduce hospital utilisation for many patients with severe mental illness, but its ability to do so likely depends on the clinical characteristics of patients for whom it is used, the consequences of non-compliance, the rigour with which consequences are applied and on the duration for which treatment orders are maintained.

4. Petrila, J., Ridgely, M. S., & Borum, R. (2003). Debating outpatient commitment: Controversy, trends, and empirical data. *Crime & Delinquency*, 49, 157-172.

Involuntary outpatient commitment is one of the most controversial issues in mental disability law. The criminal justice system at all levels has had difficulty in responding to the growing number of defendants with mental illness and substance-abuse disorders. Outpatient commitment

has been offered as a tool that might reduce recidivism and violence among at least some individuals--these outcomes are as important to criminal justice professionals as they are to mental health professionals. This article explores the debate regarding outpatient commitment, current state of research on its effect, and emerging policy issues in more recent outpatient commitment statutes.

5. Swartz, M. S., & Swanson, J. W. (2004). Involuntary outpatient commitment, community treatment orders, and assisted outpatient treatment: What's in the data? *Canadian Journal of Psychiatry*, 49, 585-591.

Objective: Involuntary outpatient commitment (OPC), also referred to as community treatment orders or assisted outpatient treatment, is a legal intervention intended to improve treatment adherence among persons with serious mental illness. This paper reviews the empirical literature on the procedure's effectiveness. Methods: We identified and reviewed all English-language studies of OPC and related procedures available in Medline and other bibliographic search services. Results: Existing naturalistic and quasi-experimental studies, taken as a whole, moderately support the view that the procedure is effective, although all do have methodological limitations. Two randomized controlled studies of OPC have conflicting findings and are reviewed in detail. Conclusions: On balance, empirical studies support the view that OPC is effective under certain conditions, although some of the evidence has been contested and the policy remains controversial.

6. Torrey, E. F., & Zdanowicz, M. (2001). Outpatient commitment: What, why, and for whom. *Psychiatric Services*, 52, 337-341.

The authors describe studies showing the effectiveness of involuntary outpatient commitment in improving treatment compliance, reducing hospital readmission, and reducing episodes of violence among persons with severe psychiatric illnesses. They point out that because of its role in enhancing compliance with treatment, outpatient commitment can be regarded as a form of assisted treatment, such as assertive case management, representative payeeship, and mental health courts. The authors argue that such assisted treatment is necessary for persons with severe psychiatric illnesses who are noncompliant with their medication regimens because many lack awareness of their illnesses because of biologically based cognitive deficits. They recommend outpatient commitment for any individual with a severe psychiatric disorder who has unpaired awareness of his or her illness and is at risk of becoming homeless, incarcerated, or violent or of committing suicide, and they provide case examples. The authors conclude by addressing eight of the most common objections to outpatient commitment by mental health professionals and civil liberties groups that oppose outpatient commitment.

7. Young, J. L., Spitz, R. T., Hillbrand, M., & Daneri, G. (1999). Medication adherence failure in schizophrenia: A forensic review of rates, reasons, treatments, and prospects. *Journal of the American Academy of Psychiatry & the Law*, 27, 426-444.

Forensic patients with schizophrenia who fail to adhere to prescribed antipsychotic medication risk recidivism, which continues to be a serious concern. It affects all stages of trial proceedings and impacts on the treaters' liability. Although much remains unchanged since the authors

reviewed the subject in 1986, significant advances have occurred. A patient's insight can be assessed with greater precision. Risks posed by past noncompliance, substance abuse, and a dysphoric response to medication are more clearly documented. Clinical and laboratory methods for assessing compliance have improved. Major advances in the effective amelioration of adverse effects can be applied to promote adherence. New augmentation strategies enable adequate treatment at lower doses. The development of atypical antipsychotic agents makes compliance easier to achieve and maintain. Other advances apply to the containment of relapse when it does occur. This review organizes the literature documenting these trends for use in both treatment and consultation.

R1 Plans Lack Feasibility

1. Dowden, C., Antonowicz, D. & Andrews, D.A. (2003). The effectiveness of relapse prevention with offenders: A meta-analysis. *International Journal of Offender Therapy and Comparative Criminology*, 47, 516-528.

→ Community reconvictions (unspecified)

This meta-analysis evaluated the effectiveness of relapse prevention with offenders. Nine core components of relapse prevention models were identified and were the focus of this study: offense chain or cognitive-behavioral chain; relapse rehearsal; advanced relapse rehearsal; identify high-risk situations; dealing with future situations; self-efficacy; coping skills; external support systems; and booster sessions. A total of 24 studies were used in this meta-analysis. Fifteen of the studies were identified from the Andrews et al. database of 225 studies. The remaining nine studies were identified subsequent to the creation of that database. Studies were selected if they incorporated any concept of the relapse prevention model within the program. The primary effect size measure was the Pearson product-moment correlation coefficient. Multiple effect size estimates were computed if the primary studies allowed separate estimates by case or setting characteristics. Reconviction was the preferred measure if multiple indices of recidivism were reported. With the exception of self-efficacy, all of the coded variables exceeded the interrater acceptability criteria (80% or higher). Self-efficacy was dropped from the analyses.

The 24 unique studies contributed 40 tests of the effectiveness of relapse prevention elements. The majority of the effect sizes were derived from studies that predominantly consisted of male (92%) adult (78%) offenders. The majority (88%) of the studies were published after 1990. The overall effect size for the 40 tests of treatment with some element of relapse prevention was .15 ($SD = .12$, 95% CI = .11 - .19). The effect sizes ranged from -.15 to .45. However, the majority (90%) of effect sizes were positive. The overall mean effect size represents a 42.5% recidivism rate for the treatment group and a 57.5% recidivism rate for the control group. The mean effect size of approaches with some element of relapse prevention was statistically unimpressive relative to the overall mean effect size for human service programs reported by Andrews et al. (under review; .12 [$k = 374$, $SD = .19$, CI = .10-.14]).

The mean effect size for each relapse prevention component was coded. Results showed that the most effective element of the relapse prevention model was training significant others in the program model ($eta = .51$, $p < .001$). **The least effective element of relapse prevention programs was providing booster/aftercare sessions ($eta = -.18$) and/or developing skills to cope with failure situations ($eta = -.08$).** The additive effect of the number of relapse prevention elements on recidivism was examined. A significant correlation was found between the number of relapse prevention elements and recidivism ($r = .38$, $p < .01$). A three-level composite measure was used to categorize the number of relapse prevention elements in a program: 0 = the program did not specify the elements used, 1 = the program targeted and identified only one element of the model, 2 = the program used two or more elements. ANOVA results indicated that significant differences were found between the above groups, $F(2, 38) = 4.19$, $p < .05$. Follow-up contrasts using the Scheffé correction revealed that programs with two or more elements of relapse prevention were associated with significantly higher effect sizes (.22, $n = 16$)

compared to programs with only one element (.12, $n = 15$) or programs with no relapse prevention targets identified (.10, $n = 9$; $p < .05$). Finally, programs that specified their relapse prevention strategies were associated with a significantly higher mean effect size (.18, $n = 16$) than those who failed to describe the strategies used or only provided booster/aftercare sessions (.09, $n = 14$), $\eta^2 = .35$, $p < .05$.

The effectiveness of the relapse prevention model was explored across several demographic categories of offenders. Results indicated that relapse prevention was significantly more effective with young offender populations ($\eta^2 = .34$, $p < .05$). The risk, need, and responsivity principles are investigated within relapse prevention programs. **Programs that predominantly targeted criminogenic needs had significant treatment effects ($\eta^2 = .52$). The same large effect sizes were not found for programs that adhered to the risk principle ($\eta^2 = .03$).** The authors counted the number of principles adhered to in a specific program and then assigned the program a corresponding score (e.g., a program that adheres to the risk, need, and responsivity principles would be given a score of 3). For this study, a three composite variable was used where the programs that targeted none or one of the principles were scored in the same category. Results showed that treatment effectiveness increased in a linear fashion, with relapse prevention programs having the greatest impact when all three principles were adhered to (mean $r = .21$, $k = 19$) and having moderate effects when two of these principles were targeted (mean $r = .14$, $k = 15$). Relapse prevention programs that offered one or none of these principles had no impact on recidivism ($r = -.01$, $k = 6$).

2. Skeem, J. L., Monahan, J., & Mulvey, E. P. (2002). Psychopathy, treatment involvement, and subsequent violence among civil psychiatric patients. *Law & Human Behavior*, 26, 577-603.

→ Community Violence

*Article summary also appears under Item H7

Participants were a subset of the MacArthur Violence Risk Assessment Study sample. Analyses were based on 871 patients rated using the PCL:SV. Patients' mean age was 30 years ($SD = 6$ years) and they primarily were White (70%; African American, 29%), and male (58%). They had independently determined primary diagnoses of depression or dysthymia (42%), substance abuse or dependence (22%), schizophrenia, schizophreniform, or schizoaffective disorder (16%), bipolar disorder or cyclothymia (13%), personality disorder (2%), or other disorder (3%). Some 41% of patients had a co-occurring major mental disorder and substance abuse or dependence disorder. Of these patients, 195 were classified as "potentially psychopathic," and 72 were classified as "psychopathic," using the recommended PCL:SV cutoff scores.

Patients were interviewed in the hospital by a research interviewer to obtain data on demographic and historical factors, and by a research clinician to confirm the medical record diagnosis and to administer several clinical scales. Research interviewers attempted to recontact enrolled patients in the community and interview them five times (every 10 weeks) over the 1-year period from the date of discharge from the index hospitalization to obtain information about a range of factors, including the patient's involvement in treatment and violence. A collateral informant was interviewed on the same schedule. The PCL:SV interview was completed during the follow-up

period on the basis of information from both patient interviews and hospital records. In addition to interviews, hospital records were reviewed to assist in the completion of various scales, and arrest records were reviewed to provide information about offense histories and arrests that occurred during the follow-up period.

Patient self-report was used as the index of treatment involvement. At each follow-up, interviewers elicited details from patients about current mental health or substance abuse treatment and any interventions received during the follow-up period. The primary measure of treatment involvement was the total number of sessions that patients attended during each 10-week follow-up period. This measure was dichotomized into 0–6 sessions and 7 or more sessions.

The measure of violence was based on patient report, collateral informant report, and official records. At each follow-up interview, patients and collateral informants were queried regarding details about perpetration of any of eight categories of aggressive behavior (e.g., pushing, hitting) in the past 10 weeks. If multiple aggressive acts were associated with a particular incident, only the most serious act that occurred during the incident was coded. Two trained coders reviewed aggressive acts reported by any information source (patient, collateral, or records) to obtain a single reconciled report of the incident. Violence was defined as battery that resulted in physical injury, sexual assaults, assaultive acts that involved the use of a weapon, or threats made with a weapon in hand.

Analyses were completed to examine the basic relation between psychopathic patients' treatment involvement and subsequent violence. The two dichotomous measures of psychopathy classified patients as (a) nonpsychopathic (NPP; scores ≤ 12) or at least potentially psychopathic (PPP; scores > 12) groups, and (b) nonpsychopathic/mixed (NPM; scores < 18) or psychopathic (PSY; scores ≥ 18) groups. Only 6% of PPP patients who received seven or more treatment sessions during the first 10 weeks after hospital discharge were violent during the 10 subsequent weeks, whereas 23% of PPP patients who received six or fewer sessions were violent, $\chi^2(1) = 4.81, p < .05$. A similar pattern was observed when analyses were repeated using the 72 psychopathic (PSY) cases: 45 PSY patients had access to the community during the first follow-up period and completed both the first and second follow-up interviews. Eight percent of these PSY patients who received seven or more treatment sessions during the first 10 weeks after hospital discharge were violent during the 10 subsequent weeks, whereas 24% of PSY patients who received six or fewer sessions were violent. Averaging across follow-ups, PPP patients who received 0–6 treatment sessions during a given 10-week follow-up were approximately 2.5 times more likely to be violent during a subsequent follow-up than those who received more sessions. The average odds ratio across follow-ups suggested that psychopathic patients who received 0–6 treatment sessions during a given follow-up were about 3.5 times more likely to be violent during a subsequent follow-up than those who received more treatment, suggesting that treatment involvement was at least moderately associated with reduced violence potential among patients with psychopathic traits and even psychopathy.

The authors noted that because the present study did not include random assignment, selection bias could produce misleading results. Therefore, propensity score analyses were completed in an attempt to remove the effect of nonrandom assignment of study participants to treatment

involvement groups in order to more accurately estimate treatment effects. A set of 17 clinical, demographic, and violence covariates of treatment involvement was reduced into a single composite propensity score for each case that modeled the treatment assignment process (which reflected each case's probability of receiving more treatment, given the set of covariates). The covariates of treatment attendance included: alcohol/drug abuse or dependence, depression, or comorbid depression and alcohol or drug-related disorders, legal status at hospital admission (voluntary/involuntary), symptoms of anxiety–depression, self-reported number of prior hospitalizations and age at first hospitalization, proportion of the patients' social network that were mental health professionals, an index of difficulty with the activities of daily living, age, sex, race (Caucasian/Noncaucasian), self-reported years of education and employment status (employed/unemployed) prior to hospital admission, and self-report of whether or not they were involved in a violent act during the 2 months preceding their index hospital admission. Propensity scores were computed by entering the 17 covariates in a stepwise logistic regression analyses to predict treatment group membership at follow-up 1. The association between participants' propensity scores and treatment involvement was moderately strong.

PPP patients' propensity scores were used as the sole covariate to obtain an unbiased estimate of the association of their treatment involvement with future violence. After controlling for propensity scores, the odds ratio for treatment involvement was 3.6, suggesting that, after controlling for the effects of treatment assignment, PPP patients who received 0–6 treatment sessions during the first follow-up period were approximately three to four times more likely to be violent during the second follow-up period than those who received more frequent sessions. Similar results were obtained when these analyses were repeated for PPP patients' treatment involvement during follow-up 2 and violence during follow-up 3, and when all of these analyses were repeated using patients formally classified as psychopathic.

Analyses suggested that, although psychopathic patients (PPP or PSY) who received *little* treatment were no less likely to be involved in subsequent violence than those who received *no* treatment, those who received *more* treatment sessions were less likely to be involved in subsequent violence than those who received *little or no* treatment. Psychopathy did not significantly moderate the association of treatment involvement with subsequent violence: using the entire sample of patients, a direct logistic regression analysis was completed in which violence during follow-up 2 was the outcome, and the predictors of propensity scores, PCL:SV total scores, and treatment involvement at follow-up 1 were entered before the Psychopathy x Treatment interaction. Comparison of the log-likelihood ratios for models with and without the interaction term did *not* demonstrate significant improvement in the prediction of violence with the addition of the interaction term, ($\chi^2(1, N = 624) = 1.76, p = .19$). This finding suggests that psychopathy did not significantly moderate the association of treatment involvement with subsequent violence. This pattern of results also was observed when treatment involvement during follow-up 2 and violence during follow-up 3 were analyzed. Further analyses suggested that PCL:SV Part 1 did not moderate the association between treatment involvement and subsequent violence.

Even when the effects of a range of covariates *including psychopathy* were controlled for, the effect of treatment involvement remained strongly associated with violence (OR = 2.7). The authors argued that this result suggests that treatment involvement explained substantial variance

in civil psychiatric patients' violence risk independent of substance abuse, psychopathy, and other factors that affected whether they obtained treatment.

Taken together, results suggest that psychopathic civil psychiatric patients who receive more treatment sessions (seven or more) during a 10-week period are approximately three times less likely to be violent during a subsequent 10-week period than those who receive fewer (six or fewer) sessions. This remains the case even after controlling for many variables that are associated with patients' treatment attendance. Regardless, even after controlling for the treatment assignment process, psychopathy (including Part 1) did not moderate the association of treatment involvement with patients' subsequent violence. Patients with psychopathic traits appeared as likely to benefit from *adequate* doses of treatment by becoming less violent as those without such traits.

Of relevance to HCR-20 item R1, the present results suggest the presence of a dose–response effect, such that psychopathic patients who received few sessions (1–6) during a follow-up were no less likely to be violent during a subsequent follow-up than those who received *no* treatment. This was not the case in the larger MacArthur study sample, where patients who received few sessions were less likely to be subsequently violent than those who received no treatment. Such a finding is consistent with the risk-need-responsivity principle.

3. Wormith, J.S., & Olver, M.E. (2002). Offender treatment attrition and its relationship with risk, responsivity, and recidivism. *Criminal Justice and Behavior*, 29, 447-471.

→ Community general criminality (any charges or convictions)

This study investigated factors contributing to attrition from correctional treatment and the implications that treatment noncompletion may have for issues concerning risk, recidivism, and responsivity. The sample comprised 93 offenders admitted to MacKenzie Unit between 1992 and 1997. The mean age of the sample at time of admission was 30.56 years ($SD = 6.52$ years) and over half were of Aboriginal ancestry (53%; 45% Caucasian, 2% 'other'). The majority (96%) of the offenders was serving sentences for violent offenses and most (63%) also had been convicted of a nonviolent offense as part of the index sentence. In terms of treatment performance, participants were measured on: denial, motivation/effort, global improvement, and a series of treatment behavioral items. Except for global improvement (rated on a 7-point scale), all items were scored on a 5-point scale from -3 (substantial deterioration) to +3 (substantial improvement). Treatment attrition was coded dichotomously and was defined as any failure to complete the Aggressive Behavioral Control (ABC) program successfully and thus remain for the full duration of treatment (approximately 6 months).

An in-house database identified a pool of 93 participants who met the time and location criteria for inclusion. Three sources were used to collect data: an automated Offender Information System, individual client files, and clinical records maintained by the facility. SIR Scale scores were obtained from the database ($n = 44$) or were calculated by the research team based on client file information ($n = 49$). Staff clinical notes were used to identify the offenders as program

completers or noncompleters. In all cases, these notes clearly indicated whether an offender had actually completed the 6-month ABC program. However, some completers who were admitted less than 1 month after the program began, were allowed to “catch up” on the material and were declared successful completers by the treatment staff. Recidivism was coded using records supplied by the Finger Print Service of the RCMP (i.e., a reliable listing of all charges, convictions, and dispositions of offenders in Canada). Participants were scored dichotomously for any charges or convictions subsequent to the offenders’ departure from treatment/prison. Recidivism data were collected in July 2000. The average follow-up time for the sample was 4.00 years ($SD = 1.52$; range = 1 - 6.68 years).

Thirty-five participants (37.6%) did not complete their treatment program. There was a significant difference in the amount of treatment received by completers ($M = 8.33$, $SD = 2.52$) and noncompleters ($M = 3.13$, $SD = 1.66$), $t(91) = 11.57$, $p < .001$. Completer and noncompleters differed significantly on the following demographic variables: noncompleters were more likely to be from maximum security (49% vs. 17%), $\chi^2(2, N = 93) = 10.41$, $p < .005$; to be native offenders (66% vs. 45%), $\chi^2(2, N = 93) = 3.82$, $p < .04$; and to report being married or in a common law relationship (49% vs. 31%), $\chi^2(2, N = 93) = 2.68$, $p < .08$. On the other hand, completers were more likely to have regular or full-time employment in the community prior to admission (80% vs. 57%), $\chi^2(2, N = 93) = 4.83$, $p < .03$ and to have a higher degree of academic attainment ($M = 10.47$, $SD = 2.06$ vs. $M = 9.30$, $SD = 2.02$), $t(88) = 2.61$, $p < .02$.

The distribution on the SIR Scale suggested that this sample was a high-risk group of offenders, relative to the CSC population. The majority of the sample fell into the moderate risk (24.7%), high risk (29.5%) or very high risk (40.9%) categories, based on SIR Scale risk levels. Noncompleters scored significantly lower (high risk) on the SIR Scale than did completers ($M = -9.29$, $SD = 7.38$, and $M = -4.07$, $SD = 7.80$, respectively), $t(91) = -3.19$, $p < .002$. Further, the participants’ length of time in treatment was correlated with participants’ SIR risk level ($r = -.27$, $p < .01$), which indicated that high-risk offenders spent less time in treatment. Due to the small number of offenders that fell into the very low and low-risk level categories based on SIR Scale scores, those participants were collapsed into the moderate risk group, creating three levels of risk for the remaining analyses.

Treatment completion was analyzed in a 3 (risk level: very low/low/medium, high and very high) x 2 (ethnic background: aboriginal and nonaboriginal) factorial ANOVA. Results indicated a significant interaction, $F(2, 87) = 3.43$, $p < .04$, as well as a main effect on risk level, $F(2, 87) = 6.51$, $p < .002$. Post-hoc comparisons indicated that the very high-risk aboriginal offenders were significantly less likely to complete treatment than high- and moderate-risk aboriginal offenders (Scheffé mean difference = .56, $p < .001$, and .55, $p < .004$, respectively), as well as very high-risk nonaboriginal offenders, $t(36) = 3.21$, $p < .003$. Security level (maximum vs. medium/minimum) also was analyzed in relation to risk level on treatment completion. There was a significant effect of risk level on treatment completion for the aboriginal offenders, $F(2, 43) = 7.05$, $p < .002$. No significant relationship was found between security level and completion, nor was there a security by risk level interaction. For nonaboriginal offenders, there was a significant main effect of security on completion ($M = .38$, $SD = .51$ and $M = .87$, $SD = .51$, respectively), $F(1, 40) = 12.47$, $p < .001$, but no relation was found between risk level and completion or an interaction between risk level and security.

Treatment completers, compared to noncompleters, scored significantly more favourably on all treatment process variables: denial, motivation, rated improvement, attendance, completed homework, prosocial behavior on the unit, and treatment attitude. High intercorrelation ($\alpha = .73$) was found between these treatment process measures. A stepwise multiple regression with six process measures (attendance excluded due to missing data), ethnic background, and risk level entered resulted in three predictors: rated improvement, risk level, and treatment attitude ($R = .81$, adjusted $R^2 = .65$), $F(3, 89) = 58.11$, $p < .001$.

Both SIR scores and the three-level risk variable were highly related to recidivism outcome. Raw SIR scores and risk level correlated with any charge at $-.51$ and $.46$ respectively, and with any conviction, $-.51$ and $.48$ respectively (all $p < .001$). **Treatment completion also was correlated with outcome ($r = -.23$, $p < .03$) with any charge and $-.19$ ($p < .08$) with any conviction.** However, treatment completion also was correlated with SIR score $.32$ ($p < .001$) and risk level $.34$ ($p < .001$). Two-way ANOVAs (completion by risk level) were performed on the recidivism variables (any charge and any conviction), with only risk level being significant, $F(2, 85) = 8.98$, $p < .001$; $F(2, 85) = 11.85$, $p < .001$, respectively. **At all risk levels, recidivism rates were higher for the noncompleters.**

Additional Relevant Sources Supportive of R1 – Abstracts Provided

1. Davison, S., Jamieson, E., & Taylor, P.J. (1999). Route of discharge for special (high-security) hospital patients with personality disorder: Relationship with re-conviction. *British Journal of Psychiatry*, 175, 224-227.

A considerable proportion of patients with personality disorder are discharged directly to the community from special (high-security) hospitals. This article examines whether patients with personality disorder discharged directly to the community are more likely to be re-convicted than those transferred to psychiatric hospitals of lesser security. Reconviction data for a 5-9 yr follow-up were collected for a 4-yr special hospital discharge cohort of patients with personality disorder. Individuals discharged directly to the community were not significantly more likely to be reconvicted than those transferred to less secure psychiatric hospitals. However, patients discharged to the community without formal conditions of supervision were more likely to be reconvicted than those discharged to the community with conditions or those transferred to other psychiatric hospitals. Findings suggest that formal supervision after discharge may be more important than actual destination in influencing the likelihood of reconviction.

2. Dowden, C., & Andrews, D. A. (2000). Effective correctional treatment and violent reoffending: A meta-analysis. *Canadian Journal of Criminology*, 42, 449-467.

This meta-analysis examined whether the appropriate application of the principles of human service, risk, need, and responsivity within correctional treatment programs is associated with reduced levels of violent re-offending. Human service refers to human service delivery in the corrections context. Risk refers to matching corrections treatment to the risk level of the offender. Need refers to offender needs addressed in corrections treatment. Responsivity refers to characteristics of program delivery matched to the learning styles of offenders. Adherence to each of the 4 principles received empirical support, although not to a statistically significant degree in the case of risk. In addition, a composite measure, reflecting adherence to the four principles revealed the greatest mean reduction in violent recidivism. The principles of effective correctional treatment are discussed as key elements that should be considered in developing effective correctional interventions for reducing violent recidivism.

3. Naples, M., & Steadman, H. J. (2003). Can persons with co-occurring disorders and violent charges be successfully diverted? *International Journal of Forensic Mental Health*, 2, 137-143.

This study investigates how persons with co-occurring serious mental illness and substance use disorders with violent charges fare on key outcome measures at 12 months as compared to persons with nonviolent charges participating in the same jail diversion programs. Among 650 diverted individuals interviewed at 12 months at seven sites of a multisite jail diversion research study, 113 had violent intake charges. Self-reported outcome measures include arrests, arrests for violent offenses, violent acts, hospitalization and emergency room use. There were no significant differences on any outcome measures at 12 months. These findings suggest that excluding individuals with violent intake charges from eligibility for diversion programs is unnecessary on empirical grounds.

4. Simourd, D. J., & Olver, M. E. (2002). The future of criminal attitudes research and practice. *Criminal Justice & Behavior*, 29, 427-446.

Explores the underlying dimension(s) of the criminal attitude construct. Exploratory factor analyses using an oblique rotation method were conducted separately on the subscales of the Criminal Sentiments Scale-Modified among a sample of 381 violent male inmates of a medium-security Canadian institution, aged 19-60 yrs. These procedures yielded 4 factors reflecting generic criminal attitudes, specific attitudes about the law, generic rationalizations consistent with criminal subcultures, and criminally oriented self-views (i.e., a criminal self-concept). Confirmatory factor analysis using structural equation modeling found these factors to be relatively robust. Supplemental analyses revealed the factors were linked to criminal conduct outcome criteria. These results are discussed in terms of potential future theory, research, and practice of the criminal attitude construct.

R2 Exposure to Destabilizers

1. Benda, B.B. (2003). Survival analysis of criminal recidivism of boot camp graduates using elements from general and developmental explanatory models. *International Journal of Offender Therapy & Comparative Criminology*, 47, 89-110.

→ Community recidivism (arrests or parole violations)

This study examined the hazard rate of recidivism (arrest or parole violation) of several elements of general and developmental models. Elements investigated were: caregiver attachment, monitoring, and discipline; childhood and adolescent abuse, frustration and alienation; low self control and deficits in social skills; early- and late- onset of offending; and peer association with offenders, gang membership, caregiver monitoring, use and selling of illicit drugs, and regular carrying of a weapon. **It is this last set of elements (i.e., peer association, gang membership, etc.) that is relevant to factor R2.**

Participants were 601 male graduates from boot camp for adults who did not have a record of chronic or violent offenses. Participation in the boot camp was voluntary and the drop out rate at the time of the study was approximately 20%. The mean age was 25.7 years ($SD = 5.4$ years) and the racial distribution was mainly White ($n = 244$; all others were Black). The participants completed two questionnaires (on separate days to allow for fatigue) approximately 3 weeks into the 105-day program. The outcome variable was arrest or parole violation after release from boot camp. The date of boot camp graduation was subtracted from the date of first arrest or parole violation during the 5-year follow-up period, which provided the ratio level of measurement of recidivism of days survived in the community. All of the inmates were on parole for the duration of their sentence after graduation from boot camp, which was 3 to 5 years in most cases. No information was available about offenders who may have left the state and committed felonies elsewhere.

Due to missing follow-up information, the analyses for the 5-year follow-up data on recidivism were based on 572 boot camp graduates. Of the 572 graduates, 352 were recidivists (20% for parole violations). The mean number of days in the community was 1076.1 ($SD = 681.59$, $Md = 1095$, range: 22-1825 days).

Only the results relevant to HCR-20 item R2 will be summarized here. Peer association was measured with 5 items (5-point scales from 'none' to 'more than 10') asking how many of their best friends: (a) have ever been arrested, (b) use illegal drugs regularly, (c) consume three or more drinks of alcohol in a day regularly, (d) steal regularly, and (e) have used a weapon on another person. Modeling was measured by four items (4-point scale ranging from *strongly disagree* to *strongly agree*) asking respondents if their friends influence them to: (a) drink alcohol regularly, (b) use other drugs regularly, (c) steal, and (d) hurt someone in an assault.

Four items measured differential reinforcement (same scale as modeling) by asking if the rewards outweighed the costs of (a) regularly consuming alcohol, (b) using illegal drugs, (c) stealing, and (d) assaulting someone. Two items measured definitions by asking if each of the following behaviors is okay because no one is seriously harmed and everyone does it (same scale

as modeling): (a) drink alcohol to excess, (b) use illegal drugs, (c) steal, and (d) assault someone when necessary. A single item asked about whether (0 = no, 1 = yes) inmates belonged to a formal gang (i.e., a group formally organized for criminal purposes which has a designated hierarchy, name, colours, symbols, graffiti, and allegiance to each other). Two items measured carrying weapons (5 point scale from *never* to *all the time*) asking if they (a) carry a gun most of the time, (b) or carry other weapons such as knives, brass knuckles, chains, shanks, or ball bats most of the time. Finally, items asking about drugs were split into two categories: (1) how often they used drugs (barbiturates, amphetamines and/or methamphetamines, opiates, cocaine, hallucinogens, or solvents), and (2) if they had sold any the above drugs. All drug-related items were rated on a 5-point scale (1 = none, 2 = 1 or 2 times, 3 = 3 to 5 times, 4 = 6 to 9 times, 5 = 10 times or more).

Cox regression analyses were completed separately for offenders who started breaking the law at 10 years of age or younger and those who started after age 10. With the exception of differential reinforcement, peer association factors were strong positive predictors of recidivism. First looking at the early starter group, the hazard rate for each variable was: peer association = 2.55, modeling = 2.01, differential reinforcement = 1.18, definitions = 2.33, gang member = 2.54, carry weapon = 2.75, use drugs = 2.13, sell drugs = 2.80. A similar pattern was found for late-starters, however differential reinforcement was not significant: peer association = 2.41, modeling = 1.83, definitions = 2.51, gang member = 2.22, carry weapon = 2.44, use drugs = 1.81, sell drugs = 2.41. All of the above were significant at the $p < .01$ level, except for differential reinforcement for early starters ($p < .05$).

The present findings indicated that peer association and situational factors are strong predictors of recidivism in adulthood. The importance of caregiver attachment and monitoring also was demonstrated.

2. Gorman, D.M., Speer, P.W., Gruenewald, P.J., & Labouvie, E.W. (2001). Spatial dynamics of alcohol availability, neighborhood structure and violent crime. *Journal of Studies on Alcohol*, 62, 628-636.

→ Community violence

This study examined the relation between neighborhood social structure, alcohol outlet densities and violent crime in Camden, NJ. The data used in this study pertain to the city of Camden, population (1990) 87,000. The racial distribution of the city is 54% black, 29% Hispanic, 15% white, and 2% other. Fifty-three percent of households are low income. Approximately 1/3 of the population is below 18 years of age. Address-specific data pertaining to neighborhood structure, alcohol outlet densities and violent crime were aggregated at the level of census block groups. Seventeen neighborhood structural variables were used in the study: three described the level of poverty (unemployment rate, welfare rate, and median house income); one described population density (households per population); two described racial/ethnic concentration (proportion Black and proportion Latino); three described residential stability (length of residential tenure and the percent of the population that had moved over a 5-year and 1-year period); two described educational attainment (proportion of high school dropouts and proportion with a university

education or greater); and six described the family gender and age composition of the neighborhoods (proportion of female-headed households to total households, ratio of males to females, and proportion of young children, adolescents, young adults and older adults).

Alcohol outlet density was determined from a list of active alcohol outlets in the city for 1994. One hundred and eleven of the 117 outlets on the list were successfully geocoded by street address. Outlets were grouped into three categories: off-sales (sales of alcohol for consumption off the premises), on-sales (sales of alcohol for consumption on the premises; typically hotels and clubs) and combined off-sales and on-sales. The majority (84%) of licenses were of the combined off- and on- sales type. Block group densities were calculated as the total outlets per 100 persons.

Information pertaining to violent crimes (criminal homicide, forcible rape and robbery) was gathered at an address-specific level from the municipal police department for 1994. Number of violent crimes were calculated by matching specific addresses to each census block group, and converted to the rate per 100 persons. Aggravated assault and robbery comprised most (over 95%) of the violent crimes in Camden in 1994.

All of the variables were transformed to their base-10 logarithms before testing in bivariate and multivariate analyses due to the skewed distribution. Stepwise regression with backward selection ($p = .10$ remain in use) was used to reduce the number of neighborhood structural characteristics employed in subsequent bivariate, multivariate and spatial analyses. Four sociodemographic characteristics remained in the regression model: the percent that had moved over a 5-year period, welfare rate, proportion aged 12-17, and proportion elderly. Bivariate analyses showed that violent crime was not significantly related to either age variable. A strong negative correlation was observed between violent crime rate and the percent of the population that had moved ($r = -.57, p < .05$). A relatively strong correlation was found between welfare rate and violent crime ($r = .38, p < .001$). The strongest association was between alcohol outlet density and violent crime. The multivariate regression model explained 73% of the variability in violent crime rate ($F = 34.2, df = 8, 89, p < .0001$). Alcohol outlet density was found to explain more unique variance than any of the neighborhood sociodemographic variables (close to 19%). In addition, less than 50% of the variability in alcohol outlet density was accounted for by the other variables included in the model.

3. Herrenkohl, T.I., Hill, K.G., Chung, I., Guo, J., Abbott, R.D., & Hawkins, J.D. (2003). Protective factors against serious violent behavior in adolescence: A prospective study of aggressive children. *Social Work Research, 27*, 179-191

→ Community violence

This study examined the factors in adolescence that affect the probability of violent behavior at age 18 among youths who received high teacher ratings of aggression at age 10. Data were obtained from the Seattle Social Development Project (SSDP), a longitudinal study of youth development and behavior that has followed a panel of children since they entered the fifth grade in 1985 (average age 10). Participants were recruited from 18 Seattle public elementary schools

that served predominantly high-crime neighborhoods. Seventy-seven percent of students consented to participate (808 of 1053 students).

Data for this study were collected at three time points. At age 10, teachers rated the behavior of children in the classroom with the Child Behavior Checklist (CBC). This assessment was used to identify children with high levels of aggression. At age 15, youths reported on five areas of socialization: community, family, school, peer, and individual. For each area of socialization both risk and protective factors were evaluated and dichotomized to indicate the presence or absence of each. Data collected at this age were obtained through self-reports. The sole exception to this was that high academic achievement was coded from official school records. At age 18, youths reported on their use of physical violence. Of the 808 youths assessed at age 10, 94% were surveyed again at age 18.

Odds ratios of the probability of being violent for those exposed to a given risk or protective factor over the probability of being violent for those not exposed were calculated. The protective factors that showed a reduction in risk for youth violence were ($p \leq .05$): religious service attendance (OR = .47), good family management (OR = .29), bonding to school (OR = .37), and high academic achievement (OR = .42).

All of the risk factors were found to increase the risk of violence significantly ($p \leq .05$): neighborhood disorganization (OR = 2.41), antisocial peer opportunities (OR = 2.48) and antisocial peer involvement (OR = 3.25). No significant differences were found between boys and girls in protection or risk at age 15. However, one possible race difference was found: the protective effect of good family management at age 15 appeared to be stronger for African American youths compared to European American youths (a marginally significant interaction at $p = .10$). The authors reported this marginally significant interaction because of the notably large difference in the probability of violence for African American and European American youths exposed to good family management (11% compared to 30%). The probability of violence for African American youths whose families provided good family management at age 15 was 11%; for those who did not have good family management at age 15, the probability was 49%. For European American youths, the probability of violence was 30% for those with good family management at age 15 and 32% for those without it, which is just below the overall group average (35%). The authors indicate that these results suggest that the effect of good family management in the full analysis comes mainly from the African American youths.

Based on previous research, the authors hypothesized that family management was more important for African American youths in this high aggression sample because they were exposed to more negative neighborhood influences. To test this hypothesis, a follow-up regression analysis with only African American youth was conducted. For this analysis, the violence outcome measure was regressed on the family management variable and neighborhood disorganization was entered as a covariate. In this model, the effect of family management was virtually unchanged. Analyses also were conducted to examine the effect of multiple protective and risk factors at age 15. Results demonstrated that even for youths at higher levels of risk exposure, protective factors in adolescence reduced the probability of later violence. With exposure to a greater number of risks, exposure to a greater number of protective factors was required before the youth's probability of violence fell below that of the analysis sample (35%).

4. Solomon, P., & Draine, J. (1999). Explaining lifetime criminal arrests among clients of a psychiatric probation and parole service. *Journal of the American Academy of Psychiatry & the Law*, 27, 239-251.

This study examined the extent to which sociodemographic and clinical characteristics, substance abuse problems, and criminal behavior may explain lifetime arrests among offenders supervised by a psychiatric probation and parole service. Data were obtained from 327 individuals who consented to screenings between February 1995 and July 1997. Complete data were available for 325 of these individuals. The majority of the sample was male ($n = 243$, 74.8%) and African American (65.2%; White 24%; Hispanic/Latino 6.5%; Asian/mixed/other 4.3%). The mean age of the sample was 34.6 years ($SD = 9.6$).

Data were collected through a screening interview, which collected information on basic sociodemographic characteristics, psychiatric treatment history, and criminal history. Lifetime diagnosis was based on the DSM-III-R criteria and derived from the *Quick Diagnostic Interview Schedule*, a computerized version of the lengthier *Diagnostic Interview Schedule*. Information about criminal history was obtained by asking the participant "how many times have you been arrested in your life?" Participants also were asked questions about their lifetime criminal behaviors that were based on characterizations of crime incident reports obtained from participants in a previous study (not described here). Specifically, each participant was asked "Have you ever done any of the following? Please tell me if you have ever done these things or not, even if you were never arrested for them" with reference to a variety of criminal behaviors (e.g., shoplifted; forged a prescription; beat, shot, or tried to injure someone).

Hierarchical block multiple regression analysis tested a model explaining lifetime arrests. After controlling for age and other demographic variables, the number of lifetime psychiatric hospitalizations ($t = 2.57$, $p < .05$) and lifetime occurrences of a mania diagnosis ($t = 2.36$, $p < .05$) significantly explained lifetime arrests ($F(6, 307) = 4.51$, $p < .001$). The block for self-reported drug and alcohol problems did not add significantly to the explanatory power of the model, although the criminal behaviour block did. The criminal behaviour block added 4.4 percent in explained variance ($F(10, 294) = 2.91$, $p < .01$). Only two variables in this block were significant: involvement in prostitution ($t = 2.41$, $p < .05$) and ever having been arrested as a juvenile ($t = 2.08$, $p < .05$).

Additional Relevant Sources Supportive of R2 – Abstracts Provided

1. Hiller, M. L., Knight, K., & Simpson, D. D. (1999). Prison-based substance abuse treatment, residential aftercare and recidivism. *Addiction, 94*, 833-842.

Examined the impact of residential aftercare on recidivism following prison-based treatment for drug-involved offenders. Regression analyses were used to predict time until rearrest. A logistic regression model was constructed for predicting aftercare completion. Data were collected from 396 male inmates. Two hundred and ninety-three were treated in a 9-mo in-prison therapeutic community (ITC) and several community-based transitional therapeutic communities (TTCs). Background information (gender, ethnicity, age, education level, criminal history and risk for recidivism) was abstracted from the state criminal justice databases and a structured interview led by clinical staff. During treatment, process measures were based on inmate self-ratings of their counselors, program and peers. A post-treatment interview conducted by field research staff assessed satisfaction with transitional aftercare. Post-release recidivism was based on state-maintained computerized criminal history records. ITC treatment, especially when followed by residential aftercare, was effective for reducing post-release recidivism rates. Lower satisfaction with transitional aftercare treatment was associated with not completing the residential phase of community-based aftercare.

2. Killias, M., van Kesteren, J., & Rindlisbacher, M. (2001). Guns, violent crime, and suicide in 21 countries. *Canadian Journal of Criminology, 43*, 429-448.

This research is based on data on gun availability in private households, collected through the international victimization surveys of 1989, 1992, and 1996, and World Health Organization data on homicide and suicide from 21 countries. It updates and extends former research conducted on this issue, based on the surveys of 1989 and 1992. In addition, data from the International Crime Victimization Surveys were used on total and gun-related robbery and assault (including threats). The results show very strong correlations between the presence of guns in the home and suicide committed with a gun, rates of gun-related homicide involving female victims, and gun-related assault. The picture is different for male homicide, total rates of assault, and generally, for robbery (committed with or without a gun). With the exception of robbery, most correlations are similar or stronger when all types of guns are considered, rather than handguns alone. Interestingly, no significant correlations with total suicide or homicide rates were found, leaving open the question of possible substitution effects.

3. Miller, N. S., Ninonuevo, F. G., Klamen, D. L., Hoffmann, N. G., & Smith, D. E. (1997). Integration of treatment and posttreatment variables in predicting results of abstinence-based outpatient treatment after one year. *Journal of Psychoactive Drugs, 29*, 239-248.

A multi-site, longitudinal study of 2,029 patients undergoing outpatient alcohol and drug dependence treatment was conducted in private outpatient facilities. Pretreatment demographic and substance variables, treatment utilization variables, and post-treatment continuum of care variables were examined simultaneously in a multivariate prediction context for association with outcome. On admission Ss provided history information to treatment staff trained in the collection of data for the evaluation efforts. Trained interviewers conducted consecutive

structured interviews prospectively for treatment outcome at 6- and 12-mo follow-up periods. The most powerful predictors of treatment outcome were posttreatment variables, namely, support group attendance and involvement in a continuing care program. Participation in posttreatment continuing care correlated with statistically significant reductions in job absenteeism, inpatient hospitalizations, and arrest rates. It is concluded that posttreatment more than pretreatment factors may be decisive in influencing risk for relapse.

4. Nilsson, A. (2003). Living conditions, social exclusion and recidivism among prison inmates. *Journal of Scandinavian Studies in Criminology & Crime Prevention*, 4, 57-83.

This article examines the importance of living conditions for recidivism following release from prison. How do resource deficiencies in different welfare-related areas, such as education, employment, the financial situation, housing, social relations and health, affect the risk for recidivism? How important are deficiencies of this kind by comparison with known risk factors associated with levels of previous involvement in crime? The analyses are based on a representative sample of Swedish prison inmates ($n = 346$). Data on their living conditions were collected at interview and were then linked to data on reoffending within three years of release from prison. The findings show that problems relating to education and employment, but above all an accumulation of different types of resource problems, are clearly correlated with recidivism. They show further that the effect of living conditions and resource deficiencies on reoffending is primarily felt by those who at the time of interview had not previously served time in prison. A prison term serves to reduce the opportunities to lead a conventional life--with a legitimate income--and thereby contributes to marginalisation and social exclusion.

5. Paschall, M. J., & Hubbard, M. L. (1998). Effects of neighborhood and family stressors on African American male adolescents' self-worth and propensity for violent behavior. *Journal of Consulting & Clinical Psychology*, 66, 825-831.

Multilevel data were used to examine the effects of neighborhood poverty on family stress and conflict, African American male adolescents' self-worth, and their propensity for violent behavior. Block group-level census data were linked with survey data from 188 African American male adolescents and their mothers. Path analyses indicated that neighborhood poverty did not directly affect adolescents' propensity for violent behavior but may have had an indirect effect through family stress and conflict and adolescents' self-worth. Subgroup analyses revealed that adolescents who had lived in their neighborhoods for more than 5 years were more susceptible to the potentially detrimental effects of neighborhood-level poverty and family stress and conflict. Implications for future research and prevention programming are discussed.

6. Silver, E. Mulvey, E.P. & Monahan, J. (1999). Assessing violence risk among discharged psychiatric patients: Toward an ecological approach. *Law and Human Behavior*, 23, 237-255.

This paper draws upon data from the Pittsburgh site of the MacArthur Foundation's Risk Assessment Study, a large-scale study of violence risk among persons discharged from psychiatric hospitals, to examine the effect of the neighborhood context on risk of violence. This paper has 2 purposes: (1) to assess the extent to which the inclusion of neighborhood characteristics enhances violence prediction models--models that traditionally only include

individual-level characteristics, and (2) to assess the consistency of individual level risk factors across different neighborhood contexts. Results indicate that neighborhood poverty has an impact over and above the effects of individual characteristics in identifying cases with violence. These findings support efforts to include neighborhood context in the assessment and management of violence risk among discharged psychiatric patients.

R3 Lack of Personal Support

1. Estroff, S.E., Swanson, J.W., Lachiotte, W.S., Swartz, M., & Bolduc, M. (1998). Risk reconsidered: Targets of violence in the social networks of people with serious psychiatric disorders. *Social Psychiatry and Psychiatric Epidemiology*, 33, S95-S101.

→Community Violence

This study is an exploratory analysis to examine the relationship between a person diagnosed with a mental disorder and the social network surrounding him or her. It is relevant to HCR-20 item R3 because it presented findings that illustrate the heightened risk for violence posed to specific members of a patient's social network. More specifically, the authors reported that mothers who live with adult children that have schizophrenia and co-occurring substance abuse are at substantially elevated risk of being a target of violence, compared to other social network members. Results of this study highlight the importance of mental health intervention in managing this risk: respondents who had the most mental health center visits had lower odds of committing an act or threat of violence against a member of his or her social network. The study's methodology and findings are described in more detail below.

The data from this study were obtained from a longitudinal cohort study of 169 people with severe psychiatric disorders who were early in their experiences with symptoms and treatment, and who had poor work histories but had not received disability income. The median age of the sample was 28.2 years. Just over half of the sample were female (53%) and almost 29% were African American (67% White; 3% 'other'). The majority of patients were diagnosed with schizophrenia (38.5%) or major affective disorder (35.5%). Personality disorder was diagnosed in 19% of patients and 7% were designated with other psychotic disorders. At the time of recruitment over half of the sample was involuntary patients and over two-thirds of the sample had between 2 and 5 psychiatric admissions prior to entry in the study.

The patients had been admitted to one of four psychiatric hospitals in north central North Carolina between 1986 and 1988. Data were collected in five face-to-face interviews over 30 months, at 6-month intervals. The baseline interview was conducted in the hospital and the follow-up sessions occurred in the community. The significant other (SO) of 64 primary respondents who provided consent was interviewed one time during the study period. DSM-III-R diagnoses were derived from hospital records, as was information about the number and nature of involuntary commitments and amount of hospitalization. The interview covered a wide array of social, financial, clinical and functional domains, including structured symptom scales: the BPRS and eight sub-scales of the Psychiatric Epidemiology Research Interview.

Social networks were elicited at baseline and at interviews three and five. The Structural Analysis of Social Behavior scale (SASB) was used to assess the quality of relationship with the most significant other. Of the five interviews, two were semi-structured depth interviews, taped, transcribed and content coded. In the PERI antisocial history scale there was one query about violence for the patient to answer.

Only violent acts and threats that occurred outside the hospital were included in this study. Retrospective review of hospital, court, and project (including transcripts of SO and respondent interview) records were used to gather occurrence of violence data. All commitment petitions during the study period were reviewed for information regarding the nature of the act or threat, the target, and any additional pertinent information. Court records for the counties of residence of the respondents were reviewed for evidence of interpersonal violence charges. A violent act was defined as hitting with an object or weapon; hitting, cutting, burning, or physically assaulting; threatening with an object or weapon; danger to other (DTO) commitment for violent act; criminal charge and conviction for assault, manslaughter, or murder. A violent threat was defined as: expression of intent to harm; verbal expression of rage or anger at an individual or in general; DTO commitment for threats; criminal charge and conviction for threats.

A cumulative social network for each respondent was identified. This network was composed of all unduplicated individuals mentioned in social network inventories during each interview. In addition, the network included household members, mental health service providers, people who were discussed in the in-depth interviews, and those who were mentioned as helpers or sources of conflict. The social network for the entire sample comprised 3085 people; these individuals were the potential targets of violence for analyses.

Over the 30-month period, 151 (1.6%) of 3185 people were the targets of acts or threats of violence by 39% (66) of the respondents. Only 24 (16%) of the targets were strangers to the respondents. Over half of the targets (57%) were unrelated to the respondent. Among related targets, 12.6% were extended family members and 30.5% were members of the immediate family. Overall, mothers of the respondents represented the largest target group. Specifically related to threats, it was fairly equally divided between family and non-family member targets. However, for actual violent acts, unrelated individuals were the target more often (57% unrelated vs. 43% related). Sixty-one percent ($n = 66$) of the respondents who acted with violence or threatened violence were men.

Logistic regression was used to calculate the relative impact of respondent characteristics and target characteristics on the odds of being a target of violence within a social network. Results showed that both respondent and target variables are important in predicting the risk for being a target of violence. At greatest risk for being a target for a violent act or threat were mothers (OR = 24.5, $p = .0004$) living with a respondent who was financially dependent on them and has a diagnosis of schizophrenia (OR = 4.05, $p < .01$), and who has a co-occurring substance abuse problem (OR = 2.83, $p < .01$). The risk for being a target is reduced if the respondent is a frequent user of mental health services (OR = .35, $p < .05$).

An analysis of SASB scores indicated that both respondents and their SOs experienced feelings of threat and hostility from and toward each other. Respondents who engaged in a violent act rated their SOs as much more hostile than the respondents who were not violent. In addition, SOs who were targets of violence rated themselves as much more hostile towards the respondents than did SOs who were not targets ($p < .03$).

2. Fresan, A., Apiquian, R., de la Fuente-Sandoval, C., Garcia-Anaya, M., Loyzaga, C., & Nicolini, H. (2004). Premorbid adjustment and violent behavior in schizophrenic patients. *Schizophrenia Research*, 69, 143-148.

→ Community Violence

*Article summary also appears under Item H4

This study investigated whether premorbid impairments in several demographic and clinical domains were risk factors for violent behavior. The sample comprised consecutively admitted patients from the outpatient admission ward at the National Institute of Psychiatry (Mexico City) with DSM-IV defined schizophrenia. Three patients were excluded because of concomitant alcohol or substance abuse in the last 6 months, which resulted in a final sample size of 72 (45 men and 27 women). Participants were evaluated with clinical instruments validated with the Mexican population. The Premorbid Adjustment Scale (PAS), which was used to assess premorbid adjustment, evaluates the level of functioning in four major areas: (1) social accessibility-isolation, (2) peer relationships, (3) ability to function outside the nuclear family, and (4) capacity to form intimate sociosexual ties. Ratings are made on a scale of 0 (healthy) to 6 (unhealthy) and across various age periods. Violent behavior was assessed with the Overt Aggression Scale (OAS), which evaluates four categories of aggression: (1) verbal aggression, (2) physical aggression against self, (3) physical aggression against objects, and (4) physical aggression against others. Scores can range from 0 (non-aggressive) to 4 (extreme aggression). A violent behavior was defined with a score of 2 or more (which indicates threatening behavior) on each OAS category. A cutoff value of 7 on the total aggression score of the OAS was used to split the sample into a violent and a non-violent group.

Of relevance to HCR-20 item H4, there were higher rates of unemployment among the violent patients (70.4%) than among the nonviolent patients (53.3%). As such, unemployment approximately doubles the risk for violence (OR = 2.08).

Of relevance to HCR-20 item R3, having worse social performance in terms of peer relationships in childhood, early adolescence, late adolescence, and adulthood significantly differentiated violent from non-violent patients.

3. Morrison, G. M., Robertson, L., Laurie, B., & Kelly, J. (2002). Protective factors related to antisocial behavior trajectories. *Journal of Clinical Psychology*, 58, 277-290.

This study investigated the relationship between adolescents' engagement in antisocial behavior and individual, social, and behavioral protective factors. The sample comprised 115 Latino students (63 male, 52 female) from four elementary schools in a suburban community. The students were fairly evenly divided between fifth and sixth grades (56 and 59, respectively). Over 70% of the students from the four schools qualify for the Free and Reduced Lunch program, meaning that they are from low socioeconomic backgrounds. All students in the fifth and sixth grades at the involved schools were invited to participate, however only students nominated by teachers as being "at risk" for substance abuse were asked to participate further. The "at risk" judgment was based on several indicators: low academic achievement, behavioral

challenges, from a low-income family, little adult supervision at home, frequently absent from school, and exposed to adults or teens who are using substances. Little data were available on the overall representation of those who returned parent permission to participate in the study. Almost two-thirds (62.6%) of the sample qualified for and attended the after-school program; the other 37.3% were considered not at risk or did not choose to attend the program. The racial distribution of the sample that completed the measures was mostly Latino (91%), followed by 4% Caucasian, 2% African American and 3% other. Given the racial/ethnic breakdown of the sample, analyses were narrowed to consider only the Latino students.

Participants completed the study measures in early November and again in May in a small-group setting. Participants had the choice to complete the measures either in English or Spanish, however less than 5% chose to take the survey in Spanish. The following variables were assessed: engagement in antisocial behavior (a nine-item scale from the Individual Protective Factors Index [IPF]); cooperation and self control (IPF); academic and peer self-concept (the Self-Description Questionnaire [SDQ]); social problem solving (Children's Action Tendency Scale); school bonding (Psychological Sense of School Membership scale); social support (Scale of Available Behaviors); parental supervision (questions taken from the National Education Longitudinal Study Survey); and classroom participation (a classroom readiness survey).

Hierarchical multiple regression analysis examined the contribution of student evaluations of individual, social, school, and family protective factors to changes in students' self-reports of antisocial behavior from fall to spring. The dependent variable was the students' reports of antisocial behavior during the spring of the academic year. The students' ratings of antisocial behavior during the fall of the academic year were entered in Step 1 as a control, so that the criterion measure was change in student claims of antisocial behavior. Overall, increases in problem behavior from fall to spring were associated with being a boy, **perceiving low social support**, low classroom participation, and high parental supervision. Specifically, a large, significant amount of variance was explained by the fall rating of antisocial behavior (B at final step = 4.25, $p < .001$). There was no significant change in the total amount of variance explained when gender was entered; however, a significant increase in the variance accounted for was found for the entry of protective factors (R^2 change = .17, $p < .05$).

4. Silver, E., & Teasdale, B. (2005). Mental disorder and violence: An examination of stressful life events and impaired social support. *Social Problems*, 52, 62-78.

→ Community Violence

*Article also appears under item R5

This study addressed the question of whether stressful life events and impaired social support contribute to the association between mental disorder and violence. General population data from the Durham site of the National Institute of Mental Health's Epidemiological Catchment Area Surveys ($N = 3,438$). The authors found that when stressful life events and impaired social support are controlled, the association between mental disorder and violence was reduced substantially.

Five items from the ECA survey instrument were used to measure the following types of violent behavior within the past year: physical altercations with someone other than an intimate partner, weapon use, physical fighting while drinking, throwing objects at an intimate partner, or spanking a child sufficiently hard so as to leave bruises or require medical attention. Given the considerable overlap of the items, violence was coded dichotomously where '1' includes subjects who committed at least one violent act in the past year and '0' includes those who did not commit any violent act in the past year. In addition, the violence measure provided people in romantic relationships an additional opportunity to score as violent, therefore all of the analyses were conducted controlling for relationship status.

The Diagnostic Interview Schedule was the core interview used in the ECA project to assess for DSM-III diagnoses. Respondents were considered to have a major mental disorder if they met the lifetime criteria for a given disorder and if they reported that symptoms of the disorder were present during the one-year period preceding the research interview. Individuals were assigned to one of two categories: (1) *major mental disorder only*, including schizophrenia or major affective disorders, who did not also have a substance abuse disorder ($n = 97$, 2.8% of the total sample); and (2) *substance abuse disorder*, regardless of whether they also had a major mental disorder ($n = 193$, 5.6% of total sample). Cases also were identified with *less severe disorders*, including phobias and somatic, panic, and eating disorders. A total of 461 cases (13.4% of the sample) scored as having at least one of these less severe forms of mental illness.

The occurrence of stressful life events that may have occurred during the year prior to the interview was assessed using a 19-item questionnaire. Respondents also were asked to judge whether each event had a positive, negative, or neutral effect on their lives. The stressful life events measure used in the present study consists of a sum of the number of life events that respondents experienced as negative. The distribution of the stressful life events data was skewed with almost two-thirds reporting no stressful life events and 22.3% reported only a single event. Therefore, this measure was recoded so that subjects reporting four or more events were give a value of '4.'

Social support was assessed with the 35-item Duke Social Support Scale. This measure is interpreted as an indicator of *impaired social support*.

Bivariate analyses showed that individuals with mental disorders were significantly more likely to have experienced stressful life events in the past year than those with no mental disorders (with mental disorder: 28.9%; no mental disorder: 11.3%, $p < .001$). A chi-square analysis ($df = 3$) demonstrated that individuals with mental disorders also were significantly more likely to have experienced impaired social support ($p < .001$).

Multivariate analyses showed that violence was significantly related to mental disorder; the odds of engaging in violence was 4.41 times greater for people with major mental disorder than for those without, and the odds of engaging in violence was 11.6 times greater for people with any substance abuse disorder than for individuals without mental disorder. Demographic characteristics reduced the odds ratio for major mental disorder by 18 percent (from 4.41 to 3.63), and reduced the odds ratio for substance abuse disorder by 34 percent (from 11.16 to 7.35). When stressful life events were added to the model, results showed they were positively

associated with violence (OR = 1.49, $p < .01$). There was an 18 percent reduction in the odds ratio for major mental disorder (from 3.63 to 2.97) and a 21 percent reduction in the odds ratio for substance abuse disorder (from 7.35 to 5.81) was observed when stressful life events were added to the equation. Next, stressful life events were removed from the model and impaired social support was entered. Impaired social support was positively associated with violence (OR = 1.86, $p < .01$). In addition, entering impaired support to the equation resulted in a 20% reduction in the odds ratios for major mental disorder, from 3.63 to 2.92, and a 20% reduction in the odds ratio for substance abuse disorder, from 7.35 to 5.87. **When both stressful life events and impaired social support were controlled for, there was a 32 percent total reduction in the odds ratios for major mental disorder, from 3.63 to 2.48, and a 35 percent total reduction in the odds ratio for substance abuse disorder, from 7.35 to 4.76. Also as a result of both stressful life events and impaired social support being included in the model, the odds ratio for SES was rendered non-significant.** Of course, given that the present analyses were based on cross-sectional data, and lacking any longitudinal data, it is not possible to make an empirical distinction between alternative causal orderings that may exist in the independent measures (mental disorder, stressful life events, and impaired social support).

6. Swanson, J., Swartz, M., Estroff, S., Borum, R., Wagner, R., & Hiday, V. (1998). Psychiatric impairment, social contact, and violent behavior: Evidence from a study of outpatient-committed persons with severe mental disorder. *Social Psychiatry & Psychiatric Epidemiology*, 33, S86-S94.

→ Community Violence

This study investigates the interaction of functional impairment with frequency of social contact in precipitating violent behavior.

This is a study of the determinants of violent behavior in a sample of 331 adults with severe mental disorders in community-based treatment. The main finding is that among respondents with GAF scores in the lowest 20%, more frequent contact with family and friends was linked to a higher probability of violent events. Among better functioning respondents, however, frequent social contact was associated with lower risk of violence and greater satisfaction with relationships. A more detailed description of the results is presented below.

The data were drawn from a randomized clinical trial of the effectiveness of involuntary outpatient commitment. The data are from baseline, prior to random assignment, and are analyzed retrospectively. Respondents were adult patients who had been involuntarily admitted to one of four hospitals and were awaiting discharge on outpatient commitment to one of nine counties in north central North Carolina. The eligibility criteria included : (1) involuntary hospital admission; (2) age 18 years or older; (3) diagnosis of a psychotic disorder or major affective disorder; (4) duration of disorder of 1 year or more; (5) North Carolina Functional Assessment Scale score of 90 or greater (indicating significant functional impairment in activities of daily living); (6) intensive treatment within the past 2 years; (7) resident of one of nine counties participating in the study; (8) awaiting a period of court-ordered outpatient commitment; (9) permission from responsible physician for research team to approach patient for consent to

participate. Also, a primary diagnosis of personality disorder, psychoactive substance use disorder, or organic brain syndrome in the absence of a primary psychotic or mood disorder warranted exclusion. A structured interview was conducted in person with each respondent prior to discharge. Hospital records were reviewed and coded for a variety of clinically documented information, including history of assaultive behavior. Collateral interviews were conducted by telephone with a designated family member or other informant who knew the resident well.

The majority (69%) of the respondents were under age 45. The racial distribution of the sample was 66% African American, 33% White, and 1% other. Sixty-eight percent of the sample was diagnosed with schizophrenia, schizoaffective, or other psychotic disorders. The remainder of the sample consisted of respondents with bipolar disorder (27%) and recurrent unipolar depression (5%). The study found that during the 4 months prior to hospitalization 34% of subjects had used illicit drugs, 53% had used alcohol, and 59% had used either (or both) at least once. A majority of the users (57%; 34% of the total sample) had “problems” in some domain (family, job, police) attributed to substance abuse by one or more data sources.

Three sources were used to assess the occurrence of interpersonal violent behavior in the four months prior to hospitalization: (1) hospital record review, (2) subject self-report in a structured interview, and (3) interview with a collateral informant. Violent behavior was operationally defined as any threats made using a weapon and/or any physical fighting reported from one or more sources during the four months preceding baseline admission. Files, including clinical assessments, treatment progress notes, and the legal section, were systematically reviewed for any documentation regarding violent behavior. The structured interview with the subject was conducted next. The subjects were asked whether they had gotten into trouble with the law or been arrested for fighting or assault during the past 4 months. Respondents were also specifically asked whether they had been involved in any physical fights during the same period, in which someone was “hit, slapped, kicked, grabbed, shoved, bitten, hurt with a knife or gun, or [had] something thrown at them.” The collateral informant was asked similar questions regarding the respondents’ behavior, including how often the subject had “physically abused or attacked others” and how often he or she had problems with “violent or threatening behavior.” The authors defined violent behavior for the purposes of this study as any threats made using a weapon and/or any physical fighting reported from one or more sources during the 4 months preceding baseline admission.

Instead of relying on received diagnoses of substance abuse or dependence, an index of alcohol and illicit drug “problems” was used. Subjects were coded positive on this indicator if any one of the three sources (e.g., problems with the family, arrested for possession) reported problems in some area attributed to substance use. Functional impairment was assessed with the Global Assessment of Functioning Scale (GAF). For this study, respondents with GAF scores in the lowest quintile (below the 20th percentile) were considered categorically to have a high degree of impairment in functional status. Several items from the Quality of Life scale were used to measure the frequency of social contact. For this study, this variable was coded into high and low contact categories. If the respondent reported having no family or friends at all, or got together with a friend or family member no more than once a month, he was categorized in the low contact group. High contact meant seeing a friend or family member about every week, or more. Satisfaction with relationships was measured using a dichotomized scale of items that elicited a

subjective appraisal of the respondent's satisfaction with his or her social life and with their opportunities to socialize with others. To assess criminal victimization, respondents were asked whether they had been a victim of any violent crime (e.g., assault, mugging, rape) or nonviolent crime (e.g., burglary, theft of property) in the past four months. Any positive response on these items was counted as victimization.

In bivariate analyses, no significant association between functional impairment and violent behavior, or between frequency of social contact and violent behavior was found. When the sample was stratified by impairment, a significant relationship was found between social contact and violence. In the most impaired respondents, relative isolation from family and friends was associated with lower prevalence of violence, whereas frequent contact with family and friends was associated with a higher prevalence of violence (33% vs. 67%; Fisher's exact test, one tail: $p = .015$). The opposite was found for the less impaired respondents (scored about 20th percentile on the GAF): moving from less to more social contact appeared to diminish the risk of violence (59% vs. 47%; Fisher's exact test, one tail: $p < .049$). Through multivariate logistic regression analyses it was found that being young (OR = 1.87, $p < .05$), a victim (OR = 1.93, $p < .05$), and a substance abuser (OR = 2.38, $p < .001$) were the main effects significantly associated with violent behavior. These variables were used as controls for the remaining analyses.

A logistic regression analysis was conducted to estimate the effects on the odds of violence attributable to differences in social contact, for subgroups with relatively high vs. low ratings of functional impairment. Individuals with *high impairment* (lowest GAF quintile) and *low contact* (seeing friends or family no more than once a month) form the comparison group for the other three combinations of these variables.

The model showed that when impairment was high, moving from low to high frequency of social contact significantly increased violence risk (OR = 3.42, $p < .05$). The model also suggests that among severely mentally ill individuals with less functional impairment, those who are more socially isolated pose a higher risk for violent behavior (OR = 3.21, $p < .05$). When a similar analysis was conducted with low impairment low contact individuals as the comparison group it was found that when functional impairment is relatively less, moving from low to high frequency of social contact significantly decreases the risk of violence (OR = .54, $p < .05$). In addition, social isolation is associated with lower risk of violent behavior for those with more severe functional impairment (OR = .31, $p < .05$).

Swanson and colleagues (1998) noted that, when the task at hand is violence risk assessment, that the most salient feature of psychiatric impairment is the *impairment of social relationships* – “the ways in which disorders of thought and mood not only distort one's subjective appraisal of experience and threat, but impair the ability to relate meaningfully to others, to resolve conflict and derive necessary support from family and friends. Thus, social contact may be a mixed blessing for SMI individuals. For some, it signals a positive quality of life, but for others - particularly those with extreme psychiatric impairment- frequent contact may add to conflict, stress, and increased potential and opportunity for physical violence. The impact of psychiatric impairment on violent behavior cannot be known in isolation, but must be considered in a social context. Elective community-based strategies to anticipate and prevent violence in the lives of

persons with severe mental illness must take into account such interactions between social and clinical variables.” (p. S86)

Additional Relevant Sources Supportive of R3 – Abstracts Provided

1. Gutierrez-Lobos, K., Eher, R., Grunhut, C., Bankier, B., Schmidl-Mohl, B., Fruhwald, S. & Semler, B. (2001). Violent sex offenders lack male support. *International Journal of Offender Therapy and Comparative Criminology*, 45, 70-82.

Notes that social networks and social support generally exert an important impact on the management of crisis and may thus influence prevention and rehabilitation strategies. The authors therefore investigated the social network and support in a group of 62 incarcerated sexual offenders (aged 20-66 yrs). Irrespective of the underlying diagnosis, offenders were divided into a high-violent group and a low-violent group. A factor analysis resulted in 5 factors describing specific dimensions of social support. A significantly lower perceived social support was found in the high-violent group as compared with the low-violent offenders concerning the factors "talking about problems and feelings to someone" and "rely on someone." This low support exclusively referred to men outside the family. Neither the number of previous convictions nor length of prior imprisonment predicted the amount of displayed violence. The authors' results are compared with those in the pertinent literature and are discussed in light of relevant therapeutic strategies in prevention and rehabilitation.

2. Hamilton, C. E., Falshaw, L., & Browne, K. D. (2002). The link between recurrent maltreatment and offending behavior. *International Journal of Offender Therapy & Comparative Criminology*, 46, 75-94.

Examined the relationship between recurrent maltreatment and offending behavior. 58 males and 19 females (aged 11-18 yrs) resident within a secure institution and considered a risk to themselves or others were studied. Collected data included admission file information concerning offense history, childhood referrals, self-harming behaviors, maltreatment history, medical problems, educational achievements, and family environment. Additional information was obtained from keyworkers and social workers on the type of maltreatments, frequency of abuse, number of perpetrators, and relationship of perpetrators. Results show 20.8% of Ss had not experienced maltreatment, 6.5% had experienced a single incident, 11.7% were repeated victims of the same perpetrator, 6.5% were revictimized by different perpetrators; 54.5% of Ss had suffered both repeated victimization and revictimization. Of Ss who had committed a violent or sexual crime, 74% had experienced some form of revictimization, compared to 33% of those who committed nonviolent offenses. Ss most likely to have committed violent or sexual crimes were those who had been victims of recurrent extrafamilial maltreatment. It is concluded that revictimization is associated with serious crimes.

3. Hanson, R. K., & Harris, A. J. R. (2000). Where should we intervene? Dynamic predictors of sexual offense recidivism. *Criminal Justice and Behavior*, 27, 6-35.

Reports on information concerning dynamic (changeable) risk factors that were collected through interviews with community supervision officers and file reviews of 208 sexual offense recidivists and 201 nonrecidivists. The recidivists were generally considered to have poor social supports, attitudes tolerant of sexual assault, antisocial lifestyles, poor self-management strategies, and difficulties cooperating with supervision. The overall mood of the recidivists and

nonrecidivists was similar, but the recidivists showed increased anger and subjective distress just before reoffending. The dynamic risk factors reported by the officers continued to be strongly associated with recidivism, even after controlling for preexisting differences in static risk factors. The factors identified in the interview data were reflected (to a lesser extent) in the officers' contemporaneous case notes, which suggests that the interview findings cannot be completely attributed to retrospective recall bias.

4. Silver, E. (2000). Race, neighborhood disadvantage, and violence among persons with mental disorders: The importance of contextual measurement. *Law and Human Behavior*, 24, 449-456.

Illustrates the importance of measuring community context by showing that race is not an important predictor of violence among persons with mental disorders when neighborhood disadvantage is controlled statistically. Data for this study consisted of 270 White or African American discharged psychiatric patients between the ages of 18-40 yrs with a chart diagnosis of a mental disorder. Ss and collateral informants were asked whether Ss had committed violent behavior following hospital discharge. Census tract measures were used to measure the neighborhood contexts within which Ss resided following discharge from treatment. Results suggest that despite overall association between race and violence in this sample, African American and White patients residing in comparable disadvantaged neighborhoods showed no difference in their rates of violence. More generally, these results suggest that researchers run the risk of perpetuating the individualistic fallacy in studies of violence by persons with mental disorders when they use individual-level risk factors as predictors, but do not control for community context.

Narrative Review for R3

1. Colvin, M., Cullen, F., & Vander Ven, T. (2002). Coercion, social support and crime: An emerging theoretical consensus. *Criminology*, 40, 19-42.

Two themes, coercion and social support, have emerged over the past two decades in criminology that can be used to build a new integrated theory of crime. The authors provide a review of recent theoretical developments in criminology to demonstrate that two interconnected themes provide the basis for a new consensus in theory and crime policy. With some important exceptions, coercion causes crime and social support prevents crime. The authors develop a theory of differential social support and coercion that integrates concepts from a broad range of criminological theories. Implications of this integrated theory for public policy are explored.

R4 Noncompliance with Remediation Attempts

Please refer to C5 (Unresponsive to Treatment) for relevant studies and reviews.

R5 Stress

1. Eitle, D. & Turner, R.J. (2002). Exposure to community violence and young adult crime: The effects of witnessing violence, traumatic victimization, and other stressful events. *Journal of Research in Crime & Delinquency*, 39, 214-237.

→Community Aggression

*Article summary also appears under Item H8

This study examined the association between witnessing community violence and criminal behavior. The authors also investigated the association of young adult crime with other stressful events such as receiving traumatic news, witnessing domestic violence, experiencing accidents, and being the direct victim of domestic and community-based violence. In summary, the present findings suggested that recent (proximal) exposure to violence in the community coupled with a history of receiving traumatic news, direct victimizations in the community, recent life events, and associations with criminal peers increased the risk for young adult offending. Although the criterion variable is not (physical) violence, and the base rate of criminality was relatively low, the focus of the article appeared to be a good fit with the spirit of items H8 and R5.

All of the following data were collected during the 1998 to 2000 interviews with one exception: the measure of adolescent deviance was collected during 1993. Two dimensions of witnessed violence were considered: witnessing community violence and witnessing domestic violence. Four items dealing with experiences of seeing people attacked by others were used to assess witnessing community violence. Two different counts of such experiences were employed to assess the significance for criminal behavior of the timing of witnessed community violence: (a) violent events in the community witnessed in the past year (proximal community violence) and (b) violent community events witnessed prior to the past year (distal community violence).

Only one item was used to assess witnessing domestic violence, which queried whether the respondent witnessed his or her mother or another close female relative being regularly physically or emotionally abused. The two different time points (proximal and distal) were applied here as well.

Traumatic news was assessed by five items asking about being informed of violent events that he or she did not witness (i.e., hearing about a friend being raped). The proximal and distal time points were applied here as well. Three domains of experiencing trauma were assessed: accidents, abuse victimizations, and other violent victimizations. Accidents were measured by three items: lost home due to natural disaster; suffered a serious accident, illness or injury; and witnessed a serious accident where someone was badly hurt or killed.

Domestic victimization was measured by six questions asking the respondent about suffering sexual, physical or emotional abuse by intimates. Other violent victimization was measured by four items dealing with being victimized in the community: being physically assaulted or mugged, being chased but not caught, being shot at with a gun or threatened with a weapon (but not injured), and being shot at with a gun or badly injured with another weapon.

Other measures of stress (i.e., divorce, failing a grade) were assessed using a 29-item inventory that considered events occurring to significant others as well as to respondents. Association with deviant peer was measured by a six-item scale regarding the respondent's perception of his or her friend's involvement in deviance. Adolescent deviance, the only measure from the 1993 data collection, measured the extent of deviance involvement by the respondent as an adolescent. Demographic characteristics (race, ethnicity, gender, social class, and marital status) were used as control variables.

Finally, criminal behavior was assessed by eight self-report items regarding behaviors committed in the past month. The respondent was asked about (% reporting such behavior in parentheses): using force to get money or expensive things from another person (1.1%), breaking and entering (1.4%), damaging or destroying property that did not belong to him or her (4.1%), taking a car for a ride without the owner's permission (1.9%), taking something worth more than \$50 when he or she was not supposed to (3.1%), carrying a handgun when he or she went out (6.8%) taking more than \$20 from family or friends without permission (2.4%), and taking part in gang fights (1.5%). Most respondents reported involvement in either one or none of the behaviors in the past month so responses were collapsed into two categories: a score of 1 indicated significant involvement in crime (0 was no involvement).

The following adversities were associated with a significant increased risk for being involved in criminal behavior ($p < .05$; all odds ratios were adjusted for race, ethnicity, gender, SES, and marital status): history of serious illness, injury or accident (OR = 1.84); witness of serious accident/disaster with serious injury (OR = 2.28); ever physically abused/injured by intimate partner (OR = 2.57); ever physically abused/injured by someone else (OR = 1.99); ever shot at with gun or threatened with weapon but not injured (OR = 3.96); every shot with gun or injured with another weapon (OR = 4.71); ever chased but not caught and thought you could get very hurt (OR = 3.45); ever physically assaulted or mugged (OR = 1.91); ever witnessed mother or close female relative regularly physically/emotionally abused (OR = 1.92); ever seen someone chased but not caught or threatened with serious harm (OR = 3.46); ever seen someone else shot at or attacked with another weapon (OR = 3.73); ever seen someone seriously injured by gunshot or some other weapon (OR = 3.24); ever seen someone killed by being shot, stabbed or beaten (OR = 3.79); ever been told that someone you knew had been shot, but not killed (OR = 2.98); ever been told someone you knew had been killed with a gun or another weapon (OR = 2.06); anyone you knew who died suddenly or been seriously hurt (OR = 1.40); ever been told that someone you knew killed him/herself (OR = 1.77); and ever been told that someone you know had been raped (OR = 2.72). For each of the nondomestic violence, men were much more likely than women to report such experiences and this category was substantially greater for African Americans than any other race. Of note, all of the community violence adversities were the strongest predictors of the dependent variable, next to domestic violence.

Hierarchical regression analyses for predicting criminal behavior from demographic characteristics and both proximal and distal exposure to stressful events were conducted separately. *Only those analyses including the proximal exposure variables are relevant to R5 and are discussed here.* Hierarchical regression analyses for predicting criminal behavior from demographic characteristics and recent (proximal) exposure to adversities found that both witnessing community violence (.57, $p < .001$) and receiving traumatic news (.41, $p < .001$) (and

both in combination; .49, $p < .001$ and .22, $p < .01$ respectively) significantly predicted criminal behavior, but that witnessing domestic violence did not. When witnessing violence and receiving traumatic violence were held constant, the coefficient for African American respondents reduced substantially, suggesting that elevated exposure to witnessed violence and hearing traumatic news act as mediators between race and young adult crime.

For the next set of regressions, when community-based violent victimization was entered in combination with accidents and other violence victimization, community-based victimization was the only variable that significantly contributed to the model (.44, $p < .001$). Both recent life events (.20, $p < .01$) and early adolescent deviance (1.65, $p < .001$) made significant independent contributions to the prediction of criminal behavior without having identifiable impacts on other predictors. The magnitude of the coefficient for witnessing community violence was reduced when the extent of association with criminal peers was added to the model (.33 to .23), however, it remained significant ($p < .01$) along with gender (.93, $p < .01$), recent life events (.17, $p < .001$), and other violent victimizations (.33, $p < .001$).

2. Gurley, J.D., & Satcher, J.F. (2003). Drug use or abstinence as a function of perceived stressors among federally supervised offenders. *Federal Probation*, 67, 49-53.

→ Community stressors (violence not examined directly)

The authors of this study investigated whether federal offenders who either used drugs or refrained from drug use while under supervision differed when compared by levels of financial, family, employment, peer, and social stressors experienced within the six month preceding the study period.

Although the present study did not make a direct examination of stress and violence, it did consider the way in which stress may affect drug users. Although the results are presented below in detail, they may be summarized here by the authors: “The offenders in the study who used drugs while under supervision appeared overwhelmed with stress in comparison to offenders who did not use drugs” (p. 52). As such, the present article may be of relevance to the HCR-20 to the extent that stress may operate as a predisposing factor to make other risk factors more salient (e.g., using drugs), which in turn may elevate the likelihood of violence.

The sample comprised federal offenders in the Northern District of Alabama who were subject to drug testing. At the time of the study there were approximately 900 offenders under federal supervision in the district and of these, approximately 375 were subject to drug testing. Offenders were excluded if they had been under supervision for more than one year. The remaining offenders were divided into two groups: (1) those refraining from drugs/no positive drug test in the last six months, and (2) those using drugs/at least one positive drug test in the last 6 months. One hundred and eighteen offenders participated in the study. Offenders who tested positive for at least one controlled substance were purposely selected for this study, however random selection was used to select the offenders who refrained from drug use. Presentencing reports were used to collect data regarding participant characteristics.

The majority of the participants were male (81%) and were African Americans (64%; White 35%, other 1%). The primary drugs used at the time of sentencing were marijuana (43%), cocaine (25%), amphetamines (4%), and opiates (3%). Twenty-five percent of the offenders reported no drug use at the time of sentencing. Specific age categories were set for this study: ages 18 to 25 (11%), ages 26 to 30 (24%), ages 31 to 35 (19%) and over 36 years of age (45%).

Data were collected from the offenders using the Stress in My Life Survey. This survey assesses five dimensions of stress: (a) family, (b) financial, (c) employment, (d) peer, and (e) social stress. Participants responded to each of the 22 items using a Likert-type scale ranging from 1 (definitely disagree) to 5 (definitely agree), with higher responses indicating greater agreement that the item was a source of perceived stress in the past six months.

Offenders who used drugs reported higher levels of family stress ($M = 10.80$, $SD = 4.69$) compared to offenders who did not use drugs ($M = 8.57$, $SD = 3.89$). Higher levels of financial stress were reported by drug users ($M = 11.73$, $SD = 4.84$) than by offenders who refrained from drug use ($M = 8.17$, $SD = 3.77$). Offenders who used drugs perceived more employment-related stressors ($M = 11.03$, $SD = 4.60$) than did those offenders who did not test positive while under supervision ($M = 8.71$, $SD = 3.47$). Peer-related stressors were more evident in drug-using offenders ($M = 10.16$, $SD = 4.33$) than in those who did not use drugs ($M = 7.87$, $SD = 3.49$). Social stressors were perceived as more evident in the lives of drug-using offenders ($M = 9.75$, $SD = 4.12$) than in the lives of offenders who refrained from drug use while under supervision ($M = 7.89$, $SD = 4.00$).

Multivariate analysis of variance was used to analyze the data. Due to missing data, six cases were removed. The MANOVA indicated overall significant differences between the refrain from drugs and drug user groups (Wilks Lambda = .857, $F(5, 106) = 4.15$, $p < .05$). Univariate analyses demonstrated that offenders who refrained from drugs differed significantly from drug users on all five dimensions of stress. Offenders who used drugs (as compared to offenders who refrained from drugs) reported: higher levels of family stress ($M = 10.80$, $SD = 4.69$ vs. $M = 8.57$, $SD = 3.89$, $F = 7.51$, $p < .01$); higher levels of financial stress ($M = 11.73$, $SD = 4.84$ vs. $M = 8.17$, $SD = 3.77$; $F = 18.76$, $p < .01$); more employment-related stressors ($M = 11.03$, $SD = 4.60$ vs. $M = 8.71$, $SD = 3.47$; $F = 9.09$, $p < .01$); more peer-related stress ($M = 10.16$, $SD = 4.33$ vs. $M = 7.87$, $SD = 3.49$; $F = 9.45$, $p < .01$) and more social stressors ($M = 9.75$, $SD = 4.12$ vs. $M = 7.89$, $SD = 4.00$; $F = 5.86$, $p < .01$).

3. Silver, E., & Teasdale, B. (2005). Mental disorder and violence: An examination of stressful life events and impaired social support. *Social Problems*, 52, 62-78.

→Community Violence

* Article also appears under item R3

This study addressed the question of whether stressful life events and impaired social support contribute to the association between mental disorder and violence. General population data from the Durham site of the National Institute of Mental Health's Epidemiological Catchment Area Surveys ($N = 3,438$). The authors found that when stressful life events and impaired social

support are controlled, the association between mental disorder and violence was reduced substantially.

Five items from the ECA survey instrument were used to measure the following types of violent behavior within the past year: physical altercations with someone other than an intimate partner, weapon use, physical fighting while drinking, throwing objects at an intimate partner, or spanking a child sufficiently hard so as to leave bruises or require medical attention. Given the considerable overlap of the items, violence was coded dichotomously where '1' includes subjects who committed at least one violent act in the past year and '0' includes those who did not commit any violent act in the past year. In addition, the violence measure provided people in romantic relationships an additional opportunity to score as violent, therefore all of the analyses were conducted controlling for relationship status.

The Diagnostic Interview Schedule was the core interview used in the ECA project to assess for DSM-III diagnoses. Respondents were considered to have a major mental disorder if they met the lifetime criteria for a given disorder and if they reported that symptoms of the disorder were present during the one-year period preceding the research interview. Individuals were assigned to one of two categories: (1) *major mental disorder only*, including schizophrenia or major affective disorders, who did not also have a substance abuse disorder ($n = 97$, 2.8% of the total sample); and (2) *substance abuse disorder*, regardless of whether they also had a major mental disorder ($n = 193$, 5.6% of total sample). Cases also were identified with *less severe disorders*, including phobias and somatic, panic, and eating disorders. A total of 461 cases (13.4% of the sample) scored as having at least one of these less severe forms of mental illness.

The occurrence of stressful life events that may have occurred during the year prior to the interview was assessed using a 19-item questionnaire. Respondents also were asked to judge whether each event had a positive, negative, or neutral effect on their lives. The stressful life events measure used in the present study consists of a sum of the number of life events that respondents experienced as negative. The distribution of the stressful life events data was skewed with almost two-thirds reporting no stressful life events and 22.3% reported only a single event. Therefore, this measure was recoded so that subjects reporting four or more events were given a value of '4.'

Social support was assessed with the 35-item Duke Social Support Scale. This measure is interpreted as an indicator of *impaired social support*.

Bivariate analyses showed that individuals with mental disorders were significantly more likely to have experienced stressful life events in the past year than those with no mental disorders (with mental disorder: 28.9%; no mental disorder: 11.3%, $p < .001$). A chi-square analysis ($df = 3$) demonstrated that individuals with mental disorders also were significantly more likely to have experienced impaired social support, $p < .001$.

Multivariate analyses showed that violence was significantly related to mental disorder; the odds of engaging in violence was 4.41 times greater for people with major mental disorder than for those without, and the odds of engaging in violence was 11.6 times greater for people with any substance abuse disorder than for individuals without mental disorder. Demographic

characteristics reduced the odds ratio for major mental disorder by 18 percent (from 4.41 to 3.63), and reduced the odds ratio for substance abuse disorder by 34 percent (from 11.16 to 7.35). When stressful life events were added to the model, results showed they were positively associated with violence (OR = 1.49, $p < .01$). There was an 18 percent reduction in the odds ratio for major mental disorder (from 3.63 to 2.97) and a 21 percent reduction in the odds ratio for substance abuse disorder (from 7.35 to 5.81) was observed when stressful life events were added to the equation. Next, stressful life events were removed from the model and impaired social support was entered. Impaired social support was positively associated with violence (OR = 1.86, $p < .01$). In addition, entering impaired support to the equation resulted in a 20% reduction in the odds ratios for major mental disorder, from 3.63 to 2.92, and a 20% reduction in the odds ratio for substance abuse disorder, from 7.35 to 5.87. **When both stressful life events and impaired social support were controlled for, there was a 32 percent total reduction in the odds ratios for major mental disorder, from 3.63 to 2.48, and a 35 percent total reduction in the odds ratio for substance abuse disorder, from 7.35 to 4.76. Also as a result of both stressful life events and impaired social support being included in the model, the odds ratio for SES was rendered non-significant.** Of course, given that the present analyses were based on cross-sectional data, and lacking any longitudinal data, it is not possible to make an empirical distinction between alternative causal orderings that may exist in the independent measures (mental disorder, stressful life events, and impaired social support).

4. Williams, J.H., Van Dorn, R.A., Hawkins, J.D., Abbott, R., & Catalano, R.F. (2001). Correlates contributing to involvement in violent behaviors among young adults. *Violence & Victims, 16*, 371-388.

→ Community Violence

* Article summary also appears under Item C2

This study examined the extent to which gender, personality attributes, household, community, and environmental factors are associated with violent behavior in young adulthood. Data from the Seattle Social Development Project (SSDP) were reanalyzed. The sample comprised 765 ($n = 382$ women, $n = 383$ men) individuals who participated in a face-to-face interview during the winter and spring of 1996. The mean age of the participants at the time of the survey was 21 years. The following variables/constructs were measured (Cronbach's alpha): rebelliousness ($\alpha = .80$; measure noncompliant attitudes toward societal norms), sensation seeking ($\alpha = .64$), opportunities for antisocial involvement ($\alpha = .71$), social acceptability of antisocial behaviors ($\alpha = .60$), stressful life events ($\alpha = .54$), victimization ($\alpha = .62$), antisocial home environment ($\alpha = .71$), violent home environment, and community disorganization ($\alpha = .72$).

An index of the respondent's involvement in violent behavior was developed by averaging his/her responses to six questions (e.g., "Did you threaten someone with a weapon?")

Men reported a 21.4% rate of involvement in violence, as compared to women who reported a 9.4% rate ($\chi^2 = 21.061$, $p < .001$). Odds ratios for violence as a function of each variable were calculated for men and for women separately. Of relevance to HCR-20 item C2, among men, both rebelliousness (OR = 2.16) and social acceptability of antisocial behaviors (OR = 2.11)

significantly increased the risk for violence. However, for women, only rebelliousness significantly raised the risk for violence (OR = 2.63).

Hierarchical logistic regression was used to examine the independent association of gender (entered on step 1), rebelliousness (entered on step 2), sensation seeking (entered on step 2), opportunities for antisocial involvement (entered on step 3), social acceptability of antisocial behaviors (entered on step 3), stressful life events (entered on step 4), victimization (entered on step 4), antisocial home environment (entered on step 5), violent home environment (entered on step 5), and community disorganization with violent behavior (entered on step 6). Interactions between gender and the nine correlates were entered next (on step 7). Although gender initially was significant, after rebelliousness and sensation seeking were entered in Step 2 ($\chi^2 = 60.39$, $df = 2$, $p < .001$), gender no longer had a significant effect. Social acceptability of antisocial behaviors was entered in step 3 together with opportunities for antisocial involvement; doing so improved the overall fit of the model ($\chi^2 = 35.09$, $df = 2$, $p < .001$) and each correlate was significant. This suggests that social acceptability of antisocial behaviors, in concert with rebelliousness, sensation seeking, and opportunities, are associated with violent behaviors and account for the majority of the gender effect. **After entering stressful life events and victimization in step 4, attitudes and opportunities remained significant and no improvement in the model was seen after this step.**

Additional Relevant Sources Supportive of R5 – Abstracts Provided

1. Paschall, M. J., & Hubbard, M. L. (1998). Effects of neighborhood and family stressors on African American male adolescents' self-worth and propensity for violent behavior. *Journal of Consulting & Clinical Psychology, 66*, 825-831.

Multilevel data were used to examine the effects of neighborhood poverty on family stress and conflict, African American male adolescents' self-worth, and their propensity for violent behavior. Block group-level census data were linked with survey data from 188 African American male adolescents and their mothers. Path analyses indicated that neighborhood poverty did not directly affect adolescents' propensity for violent behavior but may have had an indirect effect through family stress and conflict and adolescents' self-worth. Subgroup analyses revealed that adolescents who had lived in their neighborhoods for more than 5 years were more susceptible to the potentially detrimental effects of neighborhood-level poverty and family stress and conflict. Implications for future research and prevention programming are discussed.

2. Silver, E. (2001). Neighborhood social disorganization as a cofactor in violence among people with mental disorders. *International Journal of Offender Therapy & Comparative Criminology, 45*(4), 403-406.

Argues that an important, although often ignored, cofactor in the violent behavior of people with mental disorders (MDO) is the neighborhood context in which they live. This editorial summarizes the results of a series of recent studies that examined the effects of neighborhood social disorganization on violence among a sample of discharged psychiatric patients (E. Silver, 2000a, 2000b, 2001; E. Silver, E. P. Mulvey, and J. Monahan, 1999). The basic premise of these studies is that neighborhood characteristics account for variation in the violent behavior of people with MDO that is not explained by their individual-level characteristics.