



Adolescent Psychopathy: Factor Structure and Correspondence with the Millon Adolescent Clinical Inventory (MACI)

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Abstract

We examined the internal and external validity of several different factor models of psychopathy that have been proposed by others (e.g. Cooke & Michie, 2001; Forth et al., 2003; Hare, 2003; Harpur et al., 1989). The sample (N = 227) consisted of adolescent incarcerated offenders and psychiatric inpatients. Results of CFA indicated that both Cooke and Michie's 3-factor model and a 4-factor parceled solution (Neumann, Kosson, & Salekin, in press) using Hare's (2003) four factors provided excellent fit to the data. The original 2-factor model and the 3-and 4-factor models proposed in the PCL:YV manual provided inadequate fit. Correlational analyses to examine external validity of the factor models revealed a pattern of significant relationships between psychopathy factor scores and several factor scores on the Millon Adolescent Clinical Inventory (MACI). Regression analyses indicated that Hare's Antisocial factor (F4) provided incremental validity beyond other psychopathy factors in predicting scores on the MACI Antisocial-Delinquent factor.

Rationale

There is considerable debate about the construct validity of psychopathy in adolescents and therefore a strong need to examine the psychometric properties and external validity of psychopathy measures. There is specific controversy over the most suitable factor structure for the Psychopathy Checklist-Revised (PCL-R), the leading measure of psychopathy. This controversy extends to more recent efforts to adapt the PCL-R for use with adolescents through the newly published PCL:YV (Psychopathy Checklist: Youth Version). Cooke and Michie (2001) and Hare (2003) have proposed 3- and 4-factor models, respectively, to represent the construct of psychopathy in adults. Cooke and Michie's model has been criticized by some researchers for their exclusion of items reflecting antisocial behavior, which many consider to be an essential component of the psychopathy construct. Because factor models should be judged on external as well as psychometric grounds, we correlated the factors generated by each model with the Millon Adolescent Clinical Inventory (MACI), a measure of self-reported psychopathology.

Study Questions

1. Which factor models of psychopathy provide the best fit to our sample?
2. How do the psychopathy factors generated by two rival factor models correlate with a self-report personality measure, the MACI?

Methods

We combined groups of male offenders (N=127) and male and female psychiatric inpatients (N=100), yielding a final sample of 227 (172 boys, 55 girls) adolescents. Self-reported ethnic groups were 54% White, 39% African American, 3% Hispanic, and 1% "Other." Researchers administered the PCL:YV in the offender sample and the PCL-R with modifications suggested by Forth et al. (1990) in the inpatient sample. Preliminary analyses supported combining the two samples. The MACI is a 160-item self-report measure that was administered individually or in small groups in both samples. MACI and psychopathy administrators were blind to the results of the other measure.

Table 1. CFA Results for Psychopathy Models

Index	Original 2-factor	2-factor w/ parcels	PCL:YV 3-factor	PCL:YV 4-factor	Cooke 3-factor w/parcels	Cooke 3-factor	Hare 4-factor	Hare 4-factor w/parcels
χ^2 (df)	422.04 (118)	77.13 (19)	251.15 (87)	279.39 (98)	4.78 (6)	158.52 (62)	355.02 (129)	30.64 (14)
RMSEA	.107	.097	.091	.094	.000	.083	.088	.073
GFI	.80	.91	.87	.85	.99	.90	.83	.97
AGFI	.74	.84	.82	.79	.98	.86	.78	.91
CFI	.73	.90	.81	.79	1.00	.89	.82	.96

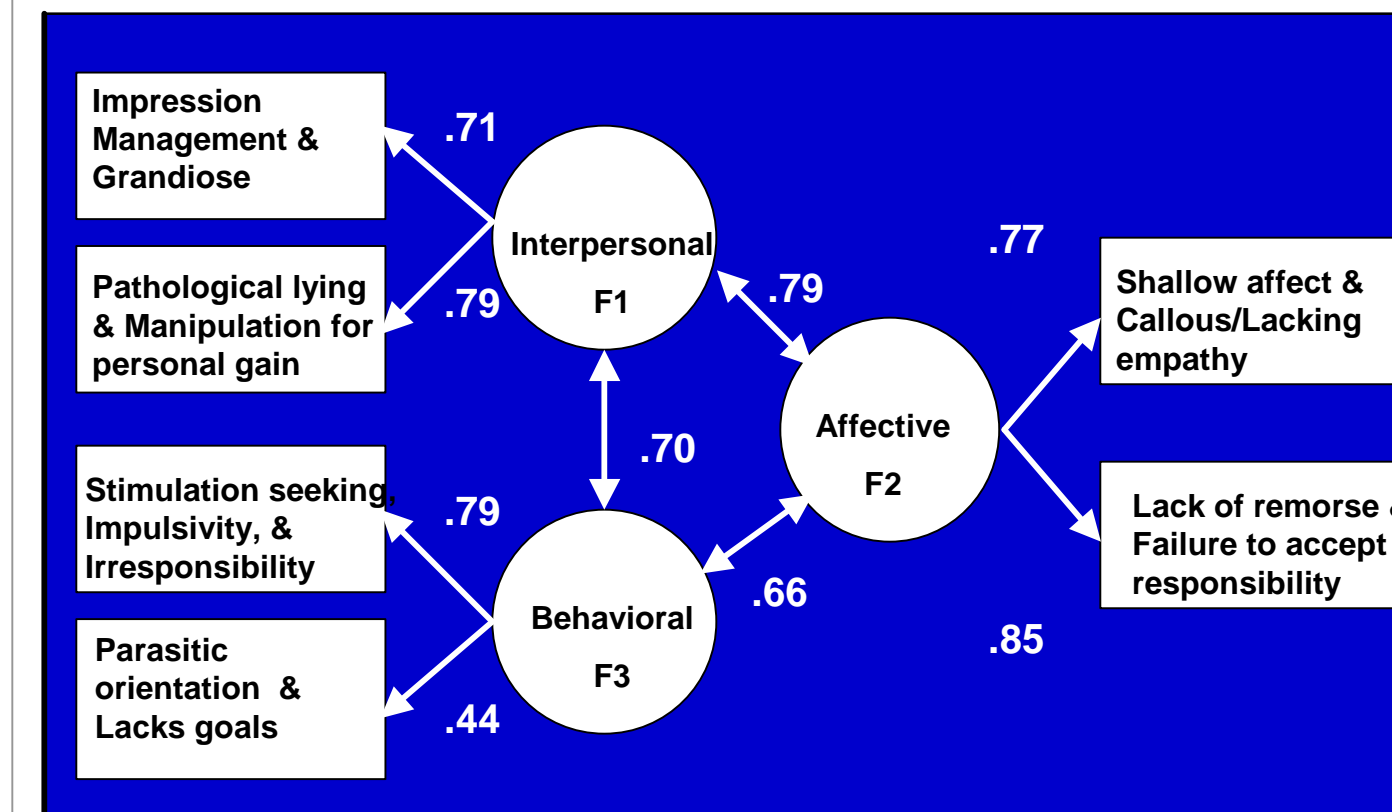
Note: RMSEA = root mean square error of approximation, GFI=goodness of fit index, AGFI = adjusted goodness of fit index, CFI = comparative fit index.

Results

1. Factor Analyses: Each model (Original 2-factor, Cooke 3-factor, Hare 4-factor, PCL:YV manual 3- and 4-factor models) was examined using CFA, both with individual items as indicators and with parcels as indicators. Parcels were derived by summing highly correlated item pairs or triplets. Cooke and Michie's 3-factor model (See Figure 1) with parcels provided excellent fit to the data (CFI=1.00, GFI=.99, AGFI=.98, RMSEA=.000), as did Hare's 4-factor model (See Figure 2) with parcels (CFI=.96, GFI=.96, AGFI=.90, RMSEA=.087). The remaining models provided poor fit to the data (See Table 1). Attempts to specify PCL:YV manual models with parcels produced misspecified models in AMOS 4.0.

2. Correlational Analyses: An EFA conducted by McConville (2004) yielded seven MACI factors that were used for these analyses. Results are presented for the two models (Cooke 3-factor and Hare 4-factor) that had good fit. The critical difference between models is that Hare's model includes an antisocial factor and Cooke's model does not. Factor 1, Factor 2, and Factor 3 for each model had significant correlations with the Antisocial-Delinquent, Aggressive, and Interpersonal Problems MACI factors (See Table 2), as did Hare's Antisocial factor. Follow-up stepwise regression analyses indicated that Hare's Antisocial factor had incremental validity (semi-partial correlation=.15, $p < .05$) beyond the other factors in the model in predicting scores on the MACI Antisocial-Delinquent factor.

Figure 1. Path Diagram for Cooke & Michie 3-Factor Model with Parcels

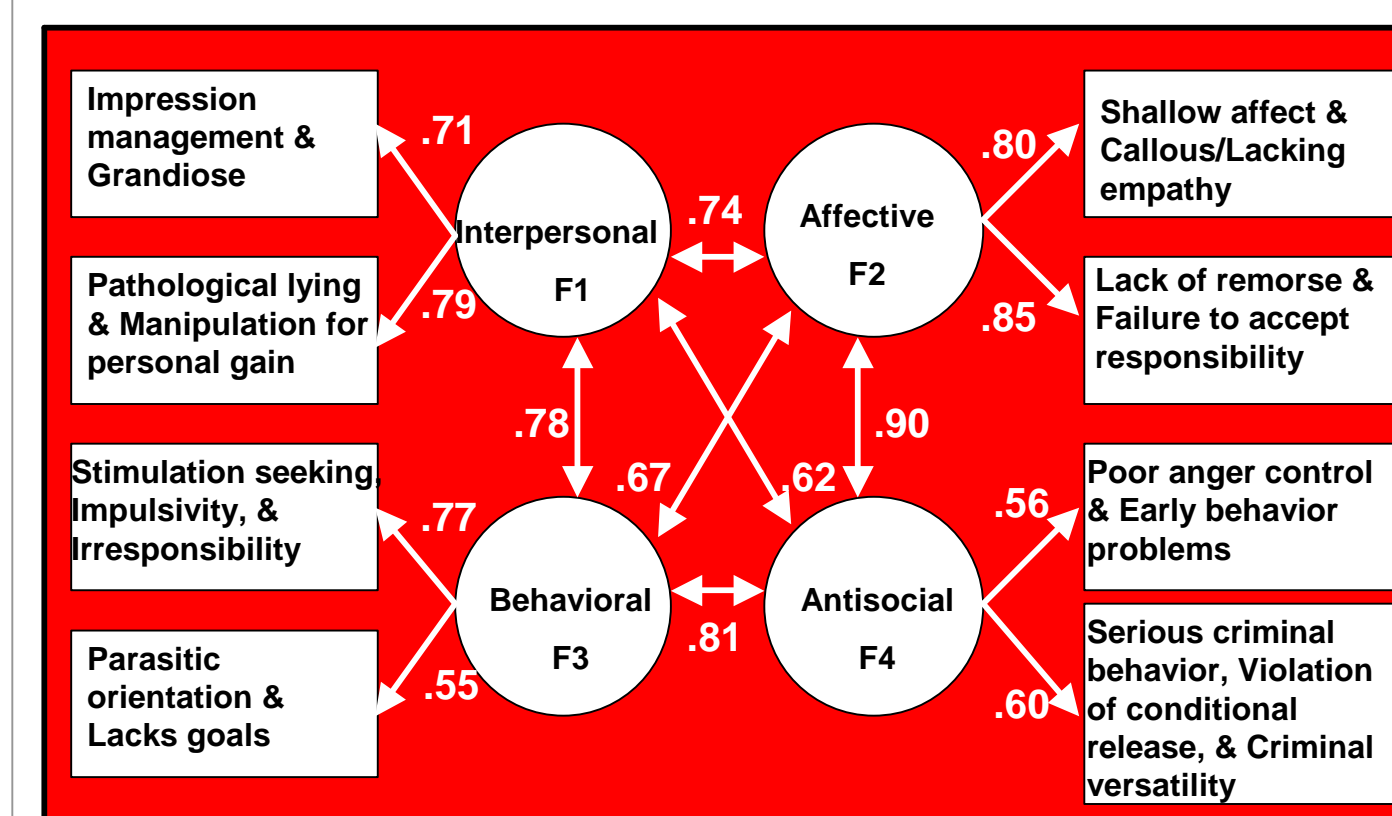


Note. Values are standardized estimates derived from CFA. Rectangles represent item parcels. Parcels are the sum of the scores on two or three items that are highly correlated. Arrows connecting factors are intercorrelations.

Conclusions

We compared 5 different structural models of psychopathy in terms of internal and external validity. Two factor models – Cooke's 3-factor model and Hare's 4-factor model (both using parcels as indicators) had excellent fit to the sample according to multiple fit indices. The use of parcels led to substantial improvements in model fit (See Table 1). A critical issue is whether to restrict the concept of psychopathy to Cooke and Michie's three factors by omitting five items concerned with antisocial behavior, or to include those items in a fourth factor, as in the Hare 4-factor model. A series of correlational analyses indicated that Cooke/Hare F3 (Behavioral) and Hare F4 (Antisocial) demonstrated similar patterns of correlations with external criteria (e.g. Antisocial Delinquent, Aggressive, and Interpersonal Problems MACI factors).

Figure 2. Path Diagram for Hare 4-Factor Model with Parcels



Note. Values are standardized estimates derived from CFA. Rectangles represent item parcels. Parcels are the sum of the scores on two or three items that are highly correlated. Arrows connecting factors are intercorrelations.

F3 demonstrated a unique correlation with the Self-Defeating MACI factor. Stepwise regression analyses indicated that the Antisocial factor (F4) contributed incremental validity in predicting problematic behaviors such as substance abuse, impulsivity, and delinquency (i.e. MACI Antisocial-delinquent factor), beyond the other factors in the model. In other words, the exclusion of antisocial items from the model reduced its power in predicting scores on the Antisocial-Delinquent factor. Therefore, there is support for retaining the items making up F4. Future studies should also examine the extent to which the Behavioral (F3) and Antisocial (F4) factors represent distinct constructs. Despite the fact that there are gaps in our current knowledge of psychopathy, particularly as it pertains to juveniles, there is a great deal of research supporting the recently published PCL:YV. Seagrave and Grisso (2002) predict that juvenile psychopathy instruments will inevitably be introduced into forensic clinical practice. For this reason, and because the PCL:YV is now widely available to clinicians, it is particularly important to gain a better understanding of the factor structure of the PCL:YV and to identify the juvenile populations and domains of behavior for which it does or does not demonstrate validity.

Table 2. Correlations between PCL:YV and MACI Factors

FACTORS	Antisocial-Delinquent	Depressed Mood	Aggressive	Attention Seeking	Self-Defeating	Poor Self-Concept	Inter-Personal
Hare F1	.28	-.15	.24	.09	-.10	-.07	.23
Hare F2	.45	-.04	.39	.05	.13	.04	.35
Cooke F1	.26	-.06	.22	.09	-.04	-.00	.23
Cooke F2	.24	-.20	.22	.08	-.13	-.12	.19
Cooke F3	.46	.11	.46	.01	.21	.12	.43
Hare F1	.26	-.06	.22	.09	-.04	-.00	.23
Hare F2	.24	-.20	.22	.08	-.13	-.12	.19
Hare F3	.46	.11	.46	.01	.21	.12	.43
Hare F4	.36	-.13	.23	.10	.01	-.07	.21
PCL:YV F1	.29	-.06	.30	.03	.00	.01	.25
PCL:YV F2	.39	-.20	.25	.16	-.05	-.14	.26
PCL:YV F3	.19	-.13	.12	.09	-.11	-.06	.14
PCL:YV F4	.35	-.18	.20	.14	-.22	-.12	.20
PCL:YV F2	.19	-.11	.20	.06	-.07	-.07	.15
PCL:YV F3	.19	-.13	.12	.09	-.11	-.06	.14
PCL:YV F4	.44	.04	.41	.03	.14	.06	.36

Note. Correlations in red are statistically significant ($p < .05$).

References

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