

Multiple dimensions of low self-control in the Clientele Study

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According to the general theory of crime, key factors responsible for explaining crime throughout life are behavioral and attitudinal predispositions developed during early childhood (Gottfredson & Hirschi, 1990). Children's behavior and attitudes are, according to the theory, shaped by parental monitoring and discipline. When parents fail to monitor their child or fail to discipline poor behavior, children are likely to develop low self-control.

In early tests of low self-control, six components of low self-control were identified (Grasmick et al., 1993). They were: impulsivity, a preference for simple (non-cognitively taxing) tasks, risk seeking, a preference for physical activity, a lack of empathy or tendency towards selfishness, and aggression. This conceptualization of the scale and these components, in some form or another, have appeared in studies across time using measures of analogous behavior or attitudes (Pratt & Cullen, 2000). Studies of these six components have found support for unidimensional versions of low self-control (where the components measure a single factor) and multidimensional versions of low self-control (where the components measure many factors) (see, e.g., Burt et al., 2014 for a review).

The Clientele study was done in during the 1960s and used multiple reporters. Given the nature of these data, it was important to establish whether there were one or more dimensions of low self-control in the Clientele data. Factor analysis was used to determine whether low self-control was uni- or multidimensional.

The first step in the analysis was locating theorized measures of low self-control. A search was conducted for ordinal measures that were theorized to measure low self-control. Measures of analogous behavior (delinquent behaviors such as drinking and smoking) and self-reported behavioral measures were avoided due to issues with validity and possible tautology (Akers, 1991; Wright et al., 1999). Instead, this analysis sought behavioral measures provided by other reporters as well as attitudinal measures reported by the participants and other reporters. Sixteen potential measures that could be described as tapping into components of low self-control were found. The measures and their theorized mapping onto the components of low self-control are described in Table 1. With the exception of the component "risk seeking", two or more measures were associated with each component.

It was uncertain whether low self-control would emerge as a uni- or multidimensional result from the factor analysis. Thus, an exploratory factor analysis was first performed on

roughly half of the Clientele study members who had complete information on all measures (N = 101). The results of the analysis indicated that a five-factor solution was the best fit to the data. All eigenvalues of the five factors were greater than 1. The results of the exploratory analysis are shown in Table 2. A few measures (judgement and self-criticism, parent-rated concentration difficulties, and lying/fabulation) loaded onto two or more factors.

Following the exploratory factor analysis, a confirmatory factor analysis was performed on the remaining half of the participants with non-missing values (N = 106). Due to some measures loading on multiple factors, various iterations were tested. These iterations were aimed at maximizing factor loadings while retaining theoretical coherence. The final adjustments indicated that 12 measures represented a multi-dimensional construct of low self-control. The multiple dimensions were captured through five factors: (1) school-based problem behavior, (2) parent-rated problem behavior, (3) hyperactivity/motor activity, (4) antisocial attitude, and (5) immaturity. Interestingly, rather than clustering within our presumed construct, measures tended to cluster by rater. Some evidence indicates that parents and teachers differ in their ratings (Rescorla et al., 2014; Verhulst & Akkerhuis, 1989) and that teacher ratings may be better predictors of childhood problem behavior (Verhulst et al., 1994).

In the full sample, the fit statistics for the 5-factor solution were (common reference value for good fit in parenthesis):

Comparative Fit Index (CFI) = 0.941 (> 0.90)

Tucker-Lewis Index (TLI) = 0.912 (> 0.95)

Root mean square error of approximation (RMSEA) = 0.070 (< 0.08)

Table 1. Description of theorized dimensions of low self-control and associated measures and their mapping onto factors following exploratory and confirmatory factor analysis. Five factors, assessed through 12 measures, were found: school-based problem behavior, parent-rated problem behavior, hyperactivity/motor activity, antisocial attitude, and immaturity.

Components of low self-control and theorized measures	Rater/Source	Brief description	Construct derived from factor analysis (factor number; standardized factor loading) N/A = not a measure of a factor
<i>Impulsivity</i>			
Maturity	Adolescent Apperception test (AAT)	Social maturity – including impulsivity, future outlook, empathy	Immaturity (Factor 5; loading: 0.665)
Judgement and self-criticism	Child psychiatrist assessment	Five rating options ranging from <i>good judgment and self-criticism</i> to <i>poor judgment and lack of concern about achievements</i> .	Antisocial attitude (Factor 4; loading: 0.703)
<i>Preference for simple tasks</i>			
Carelessness (lacking a sense of order)	Teacher survey	Five response options ranging from <i>distinct sense of order, almost pedantic</i> to <i>extremely careless</i> .	School-based problem behavior (Factor 1; loading: 0.674)

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Attention and concentration difficulties	Teacher survey	Five response options ranging from <i>always attentive to the task and never distracted</i> to <i>very inattentive and easily distracted</i> .	School-based problem behavior (Factor 1; loading: 0.656)
Concentration difficulties	Parent	Was boy perceived as suffering from difficulties concentrating on a binary scale (no/yes).	N/A
<i>Risk seeking</i>			
Preference for violence	Child interview	Child's self-rated preference for violent films on a scale from 1 (none) to 5 (strong).	N/A
<i>Preference for physical activity</i>			
Psychomotor activity	Teacher survey	Five response options ranging from <i>extreme passivity, sluggish, sluggish, slow, never running</i> to <i>constant extreme psychomotor activity and restlessness</i> .	Hyperactivity/motor activity (Factor 3; loading: 0.436)
Overactivity	Parent/child interview (anamnesis)	Medical history reported symptom count of the following: motor anxiety while growing up, destructiveness, aggression, truancy, idle wandering, running away, increased emotional mood, excessive self-confidence, and tough attitude.	Parent-rated problem behavior (Factor 2; loading: 1.014)

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Motor anxiety	Multi-source	Symptom count of general motor anxiety (from medical history), anxiety during sleep (from medical history), restlessness (from anamnesis) and flutter (from anamnesis).	N/A
<i>Lack of empathy/tendency toward selfishness</i>			
Lying/fabulation	Teacher survey	Five response options ranging from <i>never lies</i> to <i>compulsive lying</i> .	School-based problem behavior (Factor 1; loading: 0.444)
Destructiveness	Teacher survey	Five response options ranging from <i>excessive care and caution in relation to handled objects</i> to <i>destroying own and other's things</i> .	School-based problem behavior (Factor 1; loading: 0.424)
Pro-criminal attitude	Child psychiatrist assessment	Five rating options ranging <i>anti-criminal/pro-justice</i> to <i>pro-criminal/little regret reason to regret crime</i> .	Antisocial attitude (Factor 4; loading: 0.396)
Immorality/amorality	AAT	Scale of 1-12, where 1 is excessively more and 12 is amoral and immoral. A combination of scales of excessive morality, morality, immorality, and amorality.	Immaturity (Factor 5; loading: 1.141)

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Indifference	Teacher survey	Five response options ranging from <i>hypersensitive to others</i> to <i>does not care what others think or feel</i> .	N/A
<i>Aggression</i>			
Aggression	Parent/child interview (anamnesis)	Symptom count of the following: aggressive behavior, destructive behavior, outbursts of affect, excessive confidence, toughness, unaffected by wrongdoing.	Parent-rated problem behavior (Factor 2; loading: 0.682)
Aggression	Teacher survey	Seven response options ranging from <i>almost never any outbursts of anger or despair</i> to <i>reckless outbursts due to everyday situations</i> .	Hyperactivity/motor activity (Factor 3; loading: 0.791)

Table 2. Results of exploratory factor analysis. Extraction of five factors.

Measure	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Maturity	0.458				
Judgement and self-criticism	0.309			0.366	0.515
Carelessness (lacking a sense of order)	0.796				
Attention and concentration difficulties (teacher)	0.620				
Concentration difficulties (parent)		0.452			0.312
Preference for violence					
Psychomotor activity					0.527
Overactivity		0.992			
Motor anxiety			0.861		
Lying/fabulation	0.444		0.320		
Destructiveness	0.638				
Pro-criminal attitude				0.999	
Immorality/amorality	0.300				
Indifference					
Aggression (parent)		0.665			
Aggression (teacher)			0.578		

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