Thinking Clearly About Violent Cognitions: Exploratory Factor Analysis of Scales Designed to Measure Attitudes Towards Violence

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INTRODUCTION

- *Attitudes* are typically defined as summary evaluations (e.g., positive vs. negative) of psychological objects (e.g., Ajzen, 2001; Eagly & Chaiken, 1993; Fazio, 2007).
- However, in theory, research, and measurement, "attitude" is often used to refer to a wide range of cognitions that seem to extend beyond evaluation of violence, such as neutralizations, rationalizations, social norms, and intentions.
- As a result, the extent to which most scales designed to measure attitudes towards violence actually do so is unclear (Polaschek et al., 2004).
- Two main research questions were addressed in the current study:
  1. Do self-report scales designed to measure attitudes towards violence actually measure attitudes towards violence (i.e., evaluation of violence)?
  2. If these scales are measuring something distinct from evaluation of violence, do the distinctions matter? That is, do the different constructs provide complementary information relevant to violent behavior?

METHOD

Participants

- 591 undergraduate students (74.3% female) completed an anonymous online survey.

Measures

Evaluation of Violence
- 7 self-report items (see Table 2) averaged for total score. Scores can range from 1 to 7. Higher scores indicate more positive evaluation of violence.

Evaluation of Violent People
- 7 self-report items (see Table 2) averaged for total score. Scores can range from 1 to 7. Higher scores indicate more positive evaluation of violent people.

Identification of Self as Violent
- 2 self-report items (see Table 2) averaged for total score. Scores can range from 1 to 7. Higher scores indicate greater identification of self as violent.

Violence Scale of the Revised Measures of Criminal Attitudes and Associates (VS MCAA-R; Mills & Kroner, 2007)
- 10 self-report items (see Table 2) summed for total score. Scores can range from 10 to 40. Higher scores indicate greater support for or tolerance of violence.

Criminal Attitudes to Violence Scale (CAVS; Polaschek et al., 2004)
- 20 self-report items (see Table 2) summed for total score. Scores can range from 20 to 80. Higher scores indicate greater support for or tolerance of violence.

Violent Behaviour Scale (VBS)
- 8 self-report items (e.g., "From when you were 16 years old to today, how many times have you started a physical fight with someone?") summed for total score. Scores can range from 0 to 72. Higher scores indicate more violent behavior.

RESULTS

Table 1 *Intercorrelations, Descriptives, and Internal Consistency*

	1	2	3	4	5	*M*	*SD*	α
1. Evaluation of violence						1.67	0.81	.94
2. Evaluation of violent people	.61*					2.08	0.87	.93
3. ID of self as violent	.47*	.42*				2.54	1.15	.84
4. VS MCAA-R	.49*	.34*	.40*			18.32	5.36	.80
5. CAVS	.56*	.38*	.47*	.76*		40.05	13.36	.93
6. VBS	.37*	.23*	.46*	.37*	.43*	5.11	7.42	.75

* $p < .05$.

- Two exploratory factor analyses (EFA) were conducted using polychoric correlations with MPlus version 6.0 (Muthén & Muthén, 2010). Factors were extracted using the Weighted Least Square (WLSMV) method (Schmitt, 2011) and rotated using an oblique rotation method (Geomin).

Table 2 *Exploratory Factor Analyses (EFA) of Scale Items*

		Rotated Factor Loading	
		EFA with the VS MCAA-R	EFA with the CAVS
Factor 1: Evaluation of Violence	**Eigenvalue (Proportion of variance)**	**10.99 (43.96%)**	**15.54 (44.40%)**
Violence is very positive (vs. very negative)		.79	.80
Violence is extremely fun (vs. extremely not fun)		.92	.89
Violence is very pleasant (vs. very unpleasant)		.98	.94
Violence is very right (vs. very wrong)		.86	.85
Violence is very good (vs. very bad) (excluded from EFAs due to multicollinearity)		-	-
Violence is very enjoyable (vs. very unenjoyable)		.80	.77
Violence is very moral (vs. very immoral)		.76	.77
Factor 2: Evaluation of Violent People	**Eigenvalue (Proportion of variance)**	**3.22 (12.88%)**	**4.55 (13.00%)**
Violent people are very positive (vs. very negative)		.81	.83
Violent people are extremely fun (vs. extremely not fun)		.86	.84
Violent people are very pleasant (vs. very unpleasant)		.92	.90
Violent people are very right (vs. very wrong)		.77	.82
Violent people are very good (vs. very bad)		.82	.88
Violent people are very enjoyable (vs. very unenjoyable)		.80	.80
Violent people are very moral (vs. very immoral)		.72	.77
Factor 3: VS MCAA-R / CAVS	**Eigenvalue (Proportion of variance)**	**1.57 (6.28%)**	**1.51 (4.31%)**
VS MCAA-R: It's none of my business if I saw someone being robbed		.35	
VS MCAA-R: It's understandable to hit someone who insults you		.69	
VS MCAA-R: Sometimes a person may have to carry a weapon to protect themselves		.43	
VS MCAA-R: Sometimes you have to fight to keep your self-respect		.78	
VS MCAA-R: It is reasonable to expect a fight from someone you cheated		.61	
VS MCAA-R: Ignoring a store being robbed is not wrong		.35	
VS MCAA-R: There is nothing wrong with beating up a child molester		.44	
VS MCAA-R: It's not wrong to fight to save face		.74	
VS MCAA-R: Someone who makes you very angry deserves to be hit		.81	
VS MCAA-R: It's all right to fight someone if they stole from you		.78	
CAVS: If somebody insults me or my family I feel better if I beat them up			.62
CAVS: Lots of people are out to get you so you have to be violent			.72
CAVS: When I get violent, what I want most is to teach the other person a lesson			.65
CAVS: Men should be allowed to sort their differences out by fighting			.54
CAVS: If somebody puts me down, I feel like I have to fight them to get back my pride			.80
CAVS: The best thing about being violent is that it gets my anger out of my system			.62
CAVS: Fighting between men is normal			.53
CAVS: After a fight I feel happy if I won and depressed if I lost			.68
CAVS: Some people have to be treated roughly because they lack feelings that can be hurt			.80
CAVS: My loyalty to my friends or gang is more important than avoiding violence			.58
CAVS: I am more likely to be violent when another person shows me up in public			.69
CAVS: The best lesson a man can teach his son is how to fight			.65
CAVS: It is important to fight when your gang's honour is threatened			.79
CAVS: I believe that you have to use violence to get through to some people			.84
CAVS: The best thing about being violent is that it makes the other person get into line			.90
CAVS: When your main business is crime, being violent is just part of the job			.55
CAVS: It's necessary to carry a gun or a knife if you live in a rough neighbourhood			.64
CAVS: If a person hits you, you have to hit them back			.53
CAVS: If I assault or rob someone, chances are I'll get away with it			.69
CAVS: Violence is an important part of my culture, even if it is against the law			.65
Factor 4: Identification of Self as Violent	**Eigenvalue (Proportion of variance)**	**1.32 (5.28%)**	**1.33 (3.80%)**
I am very violent (vs. very peaceful)		.81	.79
I am very aggressive (vs. very gentle)		.89	.75

- The EFA with the VS MCAA-R indicated 4 factors. Factor retention: parallel analysis = 7 factors; MAP Test = 3 factors; Scree Plot = 5 factors. 4-factor model fit indices: RMSEA (ideal < .06) = .08, 90%CI [.07, .08]; CFI (ideal > 0.95) = 0.97; SRMR (ideal < .08) = .04.

- The EFA with the CAVS also indicated 4 factors. Factor retention: parallel analysis = 8 factors; MAP Test = 3 factors; Scree Plot = 4 factors. 4-factor model fit indices: RMSEA = .06, 90%CI [.05, .06]; CFI = 0.97; SRMR = .03.

Table 3 *Sequential Multiple Regressions Predicting Violent Behavior (VBS)*

Regression with the VS MCAA-R	*R*	R^2	Adjusted R^2	ΔR^2	*B*	*B* SE	β
Step 1	.37	.14	.14	.14*			
VS MCAA-R					0.52*	0.05	.37
Step 2	.43	.19	.18	.05*			
VS MCAA-R					0.35*	0.06	.25
Evaluation of violence					2.26*	0.40	.25
Step 3	.43	.19	.18	.00			
VS MCAA-R					0.35*	0.06	.25
Evaluation of violence					2.29*	0.48	.25
Evaluation of violent people					-0.05	0.41	-.006
Step 4	.52	.27	.26	.08*			
VS MCAA-R					0.25*	0.06	.18
Evaluation of violence					1.55*	0.46	.17
Evaluation of violent people					-0.63	0.40	-.07
ID of self as violent					2.17*	0.28	.34
Regression with the CAVS							
Step 1	.43	.18	.18	.18*			
CAVS					0.24*	0.02	.43
Step 2	.46	.21	.20	.03*			
CAVS					0.18*	0.03	.32
Evaluation of violence					1.75*	0.42	.19
Step 3	.46	.21	.20	.00			
CAVS					0.18*	0.03	.32
Evaluation of violence					1.78*	0.49	.19
Evaluation of violent people					-0.06	0.40	-.007
Step 4	.52	.27	.27	.07*			
CAVS					0.13*	0.03	.23
Evaluation of violence					1.27*	0.47	.14
Evaluation of violent people					-0.59	0.39	-.07
ID of self as violent					2.02*	0.28	.31

DISCUSSION

- The VS MCAA-R and CAVS were distinct from evaluation of violence, evaluation of violent people, and identification of self as violent. These results suggest that neither the VS MCAA-R nor the CAVS are measuring attitudes towards violence.
- Evaluation of violence, identification of self as violent, and the VS MCAA-R / CAVS were independently related to self-reported violent behavior and provided complementary information such that together they were more strongly associated with violent behavior than alone.
- Although it remains unclear what is being measured by the VS MCAA-R and CAVS, the current and past results suggest these scales are relevant to understanding and predicting violent behavior as evidenced by their observed association with violent behavior (Mills et al., 2004; Polaschek et al., 2004).
- Limitations of the current study include reliance on self-report measures, a student sample, and the inability to examine gender differences because of an insufficient number of male participants. Future research should examine other indicators of violent behavior, implicit cognition, community and correctional samples, and gender.
- The current study indicates that greater precision and clarity in conceptualizations and measurement of violent cognitions is needed and suggests that such considerations can advance understanding of the cognitive underpinnings of violence.