The Assessment of Dating Aggression: Empirical Evaluation of the Conflict Tactics Scale

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Two studies were conducted to examine the component structure of response patterns on the Conflict Tactics Scale in dating samples. In Study 1, CTS responses for 268 male and 399 female unmarried college students were subjected to principal components analyses. For both sexes, these analyses revealed a 4-component solution (Reasoning, Verbal Aggression/Coercion, Physical Aggression/Threat, and Severe Aggression). In Study 2, the component solution was replicated with a combined-sex sample of 288 (116 men, 172 women) unmarried college students. The component solution found in these samples was consistent with those found in earlier studies of the CTS with married samples. Differences between the empirically supported component structure and the rationally derived aggression indices for the CTS may have implications for understanding the underlying dimensions tapped by the CTS.

The Assessment of Dating Aggression

Empirical Evaluation of the Conflict Tactics Scale

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Prevalence estimates of physical aggression within the dating relationships of college students range from 20% to 60% (Bernard & Bernard, 1983; Makepeace, 1981; Riggs, O'Leary, & Breslin, 1990; Sigelman, Berry, & Wiles, 1984). Studies of dating aggression typically have used the Conflict Tactics Scale (CTS; Straus, 1979) or instruments modeled on the CTS to assess aggressive behaviors between dating partners (e.g., Lane & Gwartney-Gibbs, 1985; Makepeace, 1981; Riggs et al., 1990). The present studies empirically examine the use of the CTS to assess dating aggression.

When using the CTS or adaptations of the CTS to assess dating aggression, there is some question as to how the items should be divided into verbal/psychological aggression and physical aggression indices. The most common solution has been to follow the guidelines established for assessing marital aggression (Straus, 1979). The results of factor analytic studies of CTS responses of married couples have supported the division of the items into different forms of aggression; however, these studies have not supported the division of items as Straus (1979) suggested. Schumm, Bollman, Jurich, and Martin (1982) and Barling, O'Leary, Jouriles, Vivian, and MacEwen (1987)

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found that the items "Threatened to throw something at the person" and "Threw, smashed, hit or kicked something" loaded with the "physically aggressive" items rather than with the "verbal/psychological" items as initially proposed. Also, Hornung, McCullough, and Sugimoto (1981) and Straus (1979) found support for a second physical aggression factor consisting of only the most severe items.

The results of one factor analysis of CTS responses of unmarried subjects raises questions about generalizing the empirically derived factor solutions from studies of marital aggression to dating samples (Murphy, Riggs, Smith, & O'Leary, 1988). Specifically, four items, two usually categorized as physically aggressive ("Pushed, grabbed, or shoved your partner" and "Slapped your partner") and two items usually designated as verbally aggressive ("Threatened to hit partner" and "Threw, smashed, hit or kicked something") loaded equally well on both physical and verbal aggression factors. However, several issues limit the conclusions that may be made from these findings. First, Murphy et al. included five additional items hypothesized to assess rational, problem-solving strategies. Second, rational, problem-solving items were rated on a different scale than were the aggressive items. The impact of these alterations of the CTS on the factor solution are unclear. Also, the factor structure found by Murphy et al. has not been replicated on an independent sample, and therefore it is not known how sample-specific it may be.

This article presents two studies that examined the component structure of the CTS in unmarried college student samples. In the first study, we examined subjects' self-reports of conflict tactics used with their dating partners and compared the component structures of the data for male and female subjects. The second study demonstrates the replicability of the obtained component structure. We expected the component structure in these studies to follow the general pattern of previous factor analyses of the CTS and to reveal a Verbal/Psychological Aggression factor and a Physical Aggression factor. Based on earlier studies with married community samples (Barling et al., 1987; Hornung et al., 1981), we expected the severe violence items to load on a component separate from other physical aggression items. In addition, we expected low-level physical aggression items (e.g., slapping and pushing) to show dual loadings similar to those reported by Murphy et al., (1988). Based on previous results (Barling et al., 1987; Schumm et al., 1982; Straus, 1979), we also expected the items "Threw, smashed, hit or kicked something" and "Threatened to hit or throw something at your partner" would load on the Physical Aggression component. Finally, we expected the component structure for men's and women's aggression to be highly similar.

STUDY 1

Method

Subjects

Subjects were 667 undergraduate students (268 male, 399 female) enrolled in an introductory psychology course. Participation in the study counted toward fulfillment of a course research requirement. Demographic data for the sample are presented in Table 1.

Instruments

The present study used an adaptation of Straus's (1979) Conflict Tactics Scale. This version contains 17 items, presented in Table 2. Three items on Straus's original version of the CTS ("Choked," "Used a knife or gun," and "Hit or threatened to hit partner with something") were not included in the present instrument. In addition, one item, "Threatened to break up with partner," was added to the present version. Because the length of dating relationships in college students often does not meet the 6-month or 12-month criterion commonly used in studies of married persons, we asked the subjects to indicate on a 7-point scale (0 = *never*; 6 = *20 or more times*) how often they engaged in each behavior over the entire length of their current dating relationship.

Procedure

Prior to the principal components analysis, the data were examined to insure that all items had been endorsed and Kaiser's Measure of Sampling Adequacy (MSA) was calculated for the overall scale and for the individual items. For all analyses, a principal components solution using an oblique rotation was computed. Components with an eigenvalue greater than 1 were retained. Items with loadings greater than .40 were considered to contribute significantly to a component.

Results

Men's Conflict Tactics

Initial examination showed that the CTS data for the male subjects were appropriate for principal components analysis. The overall MSA was .86, and

TABLE 1: Demographic Characteristics of the Sample for Studies 1 and 2 (in percentages)

	Study 1		*Study 2*	
Variable	*Men*[a]	*Women*[b]	*Men*[c]	*Women*[d]
Age (years)				
17	5.8	10.3	4.3	5.2
18	46.9	56.9	61.7	82.6
19	24.6	18.7	33.9	12.2
20-21	16.6	10.2	0.0	0.0
Over 21	6.3	3.9	0.0	0.0
Ethnic background				
Asian-American	10.7	9.0	2.7	1.7
African-American	3.8	10.2	3.5	2.9
Hispanic	5.0	7.2	1.8	1.2
White (non-Hispanic)	77.9	72.1	91.2	92.4
Other	2.7	1.3	0.9	1.7
Religion				
Catholic	50.6	54.3	37.7	48.3
Jewish	13.2	12.4	15.8	18.6
Protestant	8.6	13.2	21.1	18.0
Other	9.7	8.3	16.7	9.3
None	16.7	11.1	8.8	5.8
Time dating partner				
0-1 months	14.4	12.7	21.7	18.6
1-3 months	23.6	16.5	19.1	18.6
3-6 months	17.1	14.9	22.6	14.5
6-12 months	23.7	19.5	17.4	13.4
12-18 months	7.1	14.1	7.0	16.9
18-24 months	7.9	8.2	8.7	7.6
More than 24 months	6.6	13.9	3.5	10.5

a. $n = 268$.
b. $n = 399$.
c. $n = 117$.
d. $n = 172$.

the item MSAs ranged from .59 to .94. The results of the principal components analysis are presented in Table 2 along with the MSA values and the percentage endorsement for each item.

The first component accounted for 34.8% of the variance. Items 10 through 15 loaded significantly on this component, which we labeled Physical Aggression and Threat. The second component accounted for an additional 16.0% of the variance. Items 4 through 9 loaded significantly on this component, which was designated Verbal Aggression and Coercion. The

TABLE 2: Component Structure of Men's and Women's CTS Responses—Study 1

	Component Loading											
	Physical Aggression/ Threat		*Verbal Aggression/ Coercion*		*Reasoning*		*Severe Aggression*		*Percentage Endorsed*		*MSA*[a]	
Item	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*
Discussed an issue calmly					.85	.83			98.5	99.0	.59	.53
Got information to back up your side					.82	.83			89.6	93.3	.66	.68
Brought in someone to help settle things					.52				45.2	46.3	.88	.85
Insulted/swore at partner			.72	.66					60.3	72.6	.88	.91
Sulked/refused to talk to partner			.61	.84					73.3	82.4	.90	.88
Stomped out of room/house			.70	.80					49.0	61.9	.90	.89
Cried			.45	.69					44.7	82.4	.86	.86
Did or said something spiteful to partner			.86	.77					57.3	69.0	.86	.91
Threatened to break-up with partner			.77	.55					38.9	47.1	.89	.94
Threatened to hit or throw something at partner	.72	.85							15.6	22.0	.94	.89
Threw, hit, or kicked something	.60	.69							43.1	29.0	.91	.92
Threw something at partner	.71	.82							6.9	14.6	.91	.90
Pushed/grabbed/shoved partner	.66	.80							19.8	29.2	.89	.92
Slapped partner	.87	.81							7.3	19.2	.86	.92
Kicked, bit, or hit partner with a fist	.73	.76							3.1	13.0	.91	.89
Beat up partner							.78	.85	1.9	2.3	.76	.76
Threatened partner with a knife or gun							.83	.87	2.3	1.8	.76	.73
Eigenvalue	5.91	5.94	2.73	2.29	1.43	1.23	1.03	1.12				
Percentage variance accounted for	34.8	35.0	16.0	13.5	8.4	7.2	6.0	6.6				

NOTE: Only component loadings greater than .40 are shown. These data are based on responses of 268 men and 399 women.
a. Kaiser's Measure of Sampling Adequacy.

third component accounted for 8.4% of the variance. Items 1, 2, and 3 contributed meaningfully to this component, and therefore it was labeled Reasoning. The final component, which we named Severe Aggression, accounted for an additional 6.0% of the variance, with only Items 16 and 17 loading significantly.

Women's Conflict Tactics

Initial examination showed that the CTS data for the female subjects were appropriate for this statistical approach. The overall MSA was .88, and the item MSAs ranged from .53 to .94. Results of the principal components analysis, the item MSA values, and the percentage endorsement for each item are presented in Table 2.

The first component accounted for 35.0% of the variance. The items that loaded on this component were identical to those on the first component found for the men's data, and it was also named Physical Aggression and Threat. The second component accounted for an additional 13.5% of the variance and paralleled the second component found for the men's self-reports; this component was labeled Verbal Aggression and Coercion. The third component accounted for 7.2% of the variance. Only Items 1 and 2 loaded meaningfully on this component, which is designated as Reasoning. Item 3 failed to load on any component in the analysis of the women's data. The fourth component to emerge accounted for an additional 6.6% of the variance; Items 16 and 17 loaded on this component, which was labeled Severe Aggression.

Comparison of the Structures of Men's and Women's Aggression

The above results suggest that the component structures of men's and women's conflict tactics within dating relationships are quite similar. To test the similarity of the component structures found in the present study, we calculated the Root Mean Square statistic (RMS; Levine, 1977). Values for RMS range between 0 (indicating an exact match in pattern and magnitude) and 2 (indicating that all loadings are equivalent to unity, but the signs are reversed). The sampling distribution of RMS is not known, so it is not possible to calculate the significance of the obtained scores. However, Levine (1977) suggested that RMS values below .25 indicate acceptable factor similarity. Results of the RMS computations indicated that the pattern and magnitude of the item loadings were quite similar for the two sexes on all four components: Physical Aggression/Threat, RMS = .14; Verbal Aggression/Coercion, RMS = .12, Reasoning, RMS = .11; and Severe Aggression, RMS = .15.

STUDY 2

Method

Subjects were 289 undergraduate students (117 male, 172 female) enrolled in an introductory psychology course (see Table 1 for demographics). Participation in the study counted toward a course research requirement. The instruments and procedures were identical to those in Study 1.

Results

Because of the similarity of the components found for males and females in Study 1, data for all subjects were analyzed together in Study 2. The overall measure of sampling adequacy was high (.88), with the item MSAs ranging from .51 to .95. The component structure, item MSA values, and item endorsement rates are presented in Table 3.

The first component accounted for 36.4% of the variance. Items 3 through 9 loaded most heavily on this component. This was similar to the Verbal Aggression and Coercion component described in Study 1, the exception being the significant loadings of Item 3. The second component accounted for 12.2% of the variance, with Items 10 through 15 loading significantly. This component was identical to the Physical Aggression and Threat component found in Study 1. The third component accounted for 7.0% of the variance and was identical to the Reasoning component for the women's data in Study 1. The fourth component accounted for an additional 6.6% of the variance and replicated the Severe Aggression component found in Study 1.

DISCUSSION

The current results support the use of the CTS to assess dating aggression among college students. The component structure of the CTS studies reported here is virtually identical to that reported by Barling et al. (1987) in a community sample of young married couples, as well as those found in Straus's (1979) original factor analysis. The present data also replicate earlier findings that the component structure of CTS responses is essentially identical for men and women.

These findings are inconsistent with the only previous factor analysis of CTS data for dating couples (Murphy et al., 1988). The dual loadings of several items found in the Murphy et al. analysis were not replicated here. In addition, the present study found support for a severe aggression component

TABLE 3: Component Structure of CTS Responses From Study 2

Item	Component Loading: Verbal Aggression/ Coercion	Physical Aggression/ Threat	Reasoning	Severe Aggression	Percentage Endorsed	MSA[a]
Discussed an issue calmly			.91		98.6	.70
Got information to back up your side			.81		86.4	.80
Brought in someone to help settle things	.49				48.4	.92
Insulted/swore at partner	.79				67.9	.92
Sulked/refused to talk to partner	.79				71.8	.93
Stomped out of room/house	.82				52.6	.92
Cried	.52				66.6	.95
Did or said something spiteful to partner	.85				70.0	.92
Threatened to break-up with partner	.64				48.1	.94
Threatened to hit or throw something at your partner		.76			17.1	.90
Threw, hit, or kicked something		.47			30.0	.92
Threw something at partner		.74			10.8	.87
Pushed/grabbed/shoved partner		.71			15.1	.91
Slapped partner		.67			11.8	.84
Kicked, bit, or hit partner with a fist		.75			9.8	.86
Beat up partner				.70	1.4	.78
Threatened partner with a knife or gun				.94	0.7	.51
Eigenvalue	6.19	2.07	1.18	1.12		
Percentage variance accounted for	36.4	12.2	7.0	6.6		

NOTE: Only component loadings greater than .40 are shown. These data are based on responses of 117 men and 172 women.
a. Kaiser's Measure of Sampling Adequacy.

that was not present in the earlier study. These discrepancies are likely due to the dramatic alterations in the CTS made by Murphy et al.

The present results suggest that the aggression indices developed for assessing marital aggression are appropriate for use in unmarried samples. These results, however, raise some questions about what items to include on indices derived from the CTS. The present study found that Items 11 ("Threatened to throw something at the partner") and 12 ("Threw, smashed, or hit something") loaded most heavily on the Physical Aggression/Threat component rather than the Verbal Aggression/Coercion component. These results are consistent with those of other factor analyses of the CTS but inconsistent with typical scoring indices (Barling et al., 1987; Schumm et al., 1982; Straus, 1979).

Given the results of previous studies, why have researchers not included these two items on the Physical Aggression index? Barling et al. (1987) argued against the inclusion of these items because they do not assess physically aggressive actions toward the partner and previous research has not included them. Although these arguments may be persuasive when the goal is to assess physical aggression within relationships, the growing body of research associating Items 11 and 12 with more obvious physically aggressive items merits attention from researchers. It is possible that the Physical Aggression/Threat component described here and elsewhere taps a more basic structure than physical aggression, such as intimidation. Threats of increased aggression and physical attacks on objects and property may serve to intimidate one's partner as effectively as physical assaults on the person. In contrast, the items found to load most heavily on the Verbal Aggression/Coercion component reflect coercive acts without the element of intimidation based on the threat or presence of physical assault. We do not suggest that researchers abandon the use of Straus's Physical and Verbal Aggression indices because these provide a necessary link between past and future research. Instead, we suggest that they should expand their examination beyond the stage of evaluating only the behavior and begin to investigate the function of the aggression. The Physical Aggression/Threat and Verbal Aggression/Coercion indices described here may provide a means for this expansion.

Consistent with previous factor analyses (Barling et al., 1987; Straus, 1979), the current results suggest that Items 16 and 17 should be scored on a separate Severe Aggression index. However, the utility of computing an index of severe aggression is difficult to determine. Given the low rates of these behaviors, summing the responses to these two items is likely to produce an index score with a highly skewed distribution of limited utility. The inclusion of Items 16 and 17 on the Physical Aggression and Physical

Aggression/Threat indices is unlikely to have a significant impact on the overall index scores. As an alternative, researchers might classify individuals based on their responses to these items into categories of severely aggressive and not severely aggressive rather than summing the scores. Thus little useful information is lost, and researchers may investigate possible distinctions between people who report severe aggression and those who do not.

REFERENCES

Barling, J., O'Leary, K. D., Jouriles, E. N., Vivian, D., & MacEwen, K. E. (1987). Factor similarity of the Conflict Tactics Scale across samples, spouse, and sites: Issues and implications. *Journal of Family Violence, 2*, 37-54.

Bernard, M. L., & Bernard, J. L. (1983). Violent intimacy: The family as a model for love relationships. *Family Relations, 32*, 283-286.

Hornung, C. A., McCullough, B. C., & Sugimoto, T. (1981). Status relationships in marriage: Risk factors in spouse abuse. *Journal of Marriage and the Family, 43*, 675-692.

Lane, K. E., & Gwartney-Gibbs, P. A. (1985). Violence in the context of dating and sex. *Journal of Family Issues, 6*, 45-59.

Levine, M. S. (1977). *Canonical analysis and factor comparison*. Beverly Hills, CA: Sage.

Makepeace, J. M. (1981). Courtship violence among college students. *Family Relations, 30*, 97-102.

Murphy, C. M., Riggs, D. S., Smith, D. A., & O'Leary, K. D. (1988, November). *Reasoning, psychological aggression, and physical aggression in intimate relationships*. Paper presented at the 22nd annual convention of the Association for the Advancement of Behavior Therapy, New York.

Riggs, D. S., O'Leary, K. D., & Breslin, F. C. (1990). Multiple predictors of physical aggression in dating couples. *Journal of Interpersonal Violence, 5*, 61-73.

Schumm, W. R., Bollman, S. R., Jurich, A. P., & Martin, M. J. (1982). Adolescent perspectives on family violence. *Journal of Social Psychology, 117*, 153-154.

Sigelman, C. K., Berry, C. J., & Wiles, K. A. (1984). Violence in college students' dating relationships. *Journal of Applied Social Psychology, 5*, 530-548.

Straus, M. A. (1979). Measuring intrafamily conflict and violence: The Conflict Tactic (CT) Scales. *Journal of Marriage and the Family, 41*, 75-86.

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