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Assessing the Factorial Complexity of the Verbal Aggressiveness Scale

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Abstract

This study examined the best-fitting factor structure for the Verbal Aggressiveness Scale (VAS). Infante and Wigley's scale is often scored as unidimensional. However, factor analytic studies have offered evidence that the scale is multidimensional. This study ($N = 185$) adopted a cross-validation approach to factor analysis to ascertain the best-fitting factor structure for the VAS. Half of the data was subjected to exploratory factor analysis and the other half was then validated through confirmatory factor analysis. Results revealed a 15-item, two-factor model, with one factor measuring ego-supportive communication and the other measuring aggression. Theoretical and methodological implications are discussed.

Keywords: Verbal aggressiveness, validity, factor analysis, surveys

Verbal aggressiveness is as a personality trait that predisposes individuals to attack the self-concept of others (Infante & Wigley, 1986). Most verbal aggressiveness research has utilized Infante and Wigley's (1986) Verbal Aggressiveness Scale (VAS; see for example, Anderson & Martin, 1999; Infante, 1987; Infante & Rancer, 1996; Wigley, 1999). This 20-item Likert based scale is intended to measure verbal aggression. Ten of the items are phrased so the high score is the most aggressive response, while the other ten are phrased so the high score is the most nonaggressive response.¹ Various validation studies have helped the scale gain acceptance (Beatty, Rudd, & Valencic, 1999; Blickle, Habasch, & Senft, 1998).

There is confusion about the factorial complexion of the VAS, which arises out of a lack of formal testing of its dimensionality. While previous studies have scored the VAS as unidimensional, other studies have found it to be characterized by a two-factor structure (Beatty et al., 1999; Infante & Wigley, 1986). Beyond the original study conducted by Infante and Wigley (1986), only five known published studies (Beatty et al., 1999; Boster & Levine, 1988; Boster, Levine, & Kazoleas, 1993; Levine et al., 2004; Suzuki & Rancer, 1994) and two unpublished studies (Beatty, Dobos, Valencic, & Rudd, 1998; Mineo & Hamilton, 1999) have tested its factor structure.

Along with a general lack of studies that examine the VAS's dimensionality there is an additional lack of a systematic approach to reporting the results of those tests (especially in terms of how problematic items were dealt with after identified) as well as a lack of a discernable pattern of items that remain problematic (or not) across studies. Beatty et al. (1999) conducted a principle components factor analysis that "indicated the presence of two factors in the data" (p. 14), which they note was consistent with unpublished findings by Beatty et al. (1998). The authors identified five suspect items (10, 12, 17, 19, 20) as a result of their analysis. Boster and Levine (1988) used a confirmatory factor analysis (CFA) to test the dimensionality of the VAS and as a result dropped four items but never stated which four items.

Two known factor analyses studies reported problematic items and omitted them from subsequent analyses (Boster et al., 1993; Suzuki & Rancer, 1994). Specifically, Boster et al. (1993) used a CFA, which resulted in the deletion of nine items (3, 4, 5, 7, 10, 13, 15, 19, 20) (p. 410). Suzuki and Rancer (1994) conducted separate factor analyses of the VAS on U.S. and Japanese college student samples that resulted in a 15-item model for the U.S. sample due to the removal of positively worded items 4 and 18 and negatively worded items 8, 10, and 12 and a 19-item model for the Japanese sample due to the removal of item 18.

After the most extensive dimensionality testing in the literature Levine, et al. (2004) generally argue the VAS is multidimensional with two distinct factors but they also assert an alternative possibility, "that the VAS is unidimensional with some bad items, and that if these problematic items are discarded, then the scale would be unidimensional" (p. 261). The authors point out the discarded items should come from the second factor (the benevolently worded items) and not the first factor (the aggressively worded items).

At present, the dimensionality of the VAS is unresolved. The current study attempts to resolve this issue by exploring the best fitting factor structure for the VAS. Unlike previous studies, our sample consists of both student and nonstudent respondents. Moreover, rather than relying on an exploratory factor analysis (EFA) or CFA alone, we combine both techniques to

¹ e.g. "When people do things which are mean or cruel, I attack their character in order to help correct the behavior." and "When people criticize my shortcomings, I take it in good humor and do not try to get back at them."

arrive at a more robust factor solution. Thus, we believe the results from these findings may shed additional light on the inner-workings of the VAS.

Verbal Aggressiveness Defined

Infante and his colleagues (Infante, 1987; Infante & Rancer, 1982; Infante & Wigley, 1986; Rancer & Avtgis, 2006) describe verbal aggressiveness as a relatively stable personality trait, which predisposes individuals to attack the self-concept of others in order to inflict psychological pain rather than, or in addition to, also attacking the other person's position on a topic of discussion. The locus of attack has been used to distinguish verbal aggressiveness from argumentativeness (Infante & Rancer, 1996). Verbal aggressiveness and argumentativeness are considered two traits of a four-part symbolic aggression trait-arrangement developed by Infante (1987), which is based closely on a psychological approach to personality by Costa and McCrae (1980). Symbolic aggression (as opposed to physical aggression) "involves using verbal and nonverbal communication channels in order, minimally, to dominate and perhaps damage or, maximally, to defeat and perhaps destroy another person's position on topics of communication and/or the other person's self-concept" (Infante, 1987, p. 164).

Measurement of Verbal Aggressiveness

The majority of the research conducted on verbal aggressiveness has used the VAS (Infante & Wigley, 1986). The VAS has 20 items, 10-worded negatively/aggressively and 10-worded positively/benevolently. The benevolently worded items were included by Infante and Wigley (1986) as part of a larger effort "to reduce defensiveness in responding to items pertaining to behaviors usually considered socially undesirable" (p. 63). All 20 items use a 5-point Likert-type scale, with 1 = "almost never true" and 5 = "almost always true" (Infante & Wigley, 1986). While the VAS has been used in numerous studies, it has been scrutinized and changed many times; yet, it remains relatively intact despite Infante's suggestion that alternative measurement tools are warranted. Specifically, Infante and Rancer (1996) note, "alternative measurement techniques should be developed so that knowledge is not bound by peculiarities or as-yet-undiscovered measurement errors in the current scales" (p. 325).

Dimensionality of the VAS

A majority of communication studies treat the VAS as unidimensional (Levine, et al., 2004), although there is empirical evidence and conceptual reasoning to treat the scale as multidimensional or two-dimensional (Beatty, et al., 1999; Levine et al., 2004). Part of the confusion over dimensionality is borne out of the initial study that developed/tested the VAS. In the development of the VAS, Infante and Wigley (1986) conducted a factor analysis and from this noted, "a two-factor Varimax solution was obtained with all of the items that loaded on the first factor worded positively and all the second factor items worded negatively" (p. 65). Despite this finding and a second study included in that initial article that produced the same two factors, Infante and Wigley "decided the scale was unidimensional with a latent variable being item wording" (p. 65). Beatty, Levine and others, however, remain unconvinced. They assert the 10 benevolently worded items, which are reverse coded during VAS data analysis, "might be argued to reflect not only a lack of aggression, but also active efforts toward ego-boosting, worth-confirming, confidence communication" (Levine et al., 2004, p. 248). Despite this seemingly valid assertion by Levine and Beatty that the benevolently worded items might measure something other than a mere lack of verbal aggressiveness, the results in both their studies (based largely, but not exclusively, on CFA as means to test the dimensionality of the VAS) remain equivocal and do not point to a clear way to handle the VAS as unidimensional or multidimensional.

Suzuki and Rancer (1994) also used CFA to test the dimensionality of the VAS but did so with a sample made up U.S. college students ($N = 262$) and Japanese college students ($N = 716$). They found support for the VAS as a two-dimensional scale. Perhaps in response to the above confusion involving the VAS's dimensionality, a number of studies have used a 10-item version of the scale made up of only the negatively or aggressively worded items (see Anderson & Martin, 1999; Chesboro & Martin, 2003; Martin & Anderson, 1996; Myers & Johnson, 2003).

Reliability of the VAS

There is another reason communication researchers have not developed another scale to measure verbal aggressiveness (except for an adolescent version of the VAS, see, Anderson, Raptis, Lin, & Clark, 2000), and that is, the reliability and validity data available on the VAS. Results show the VAS to be a reliable and valid way to measure trait verbal aggressiveness.

Twenty-eight articles that used the original 20-item or the abbreviated 10-item version of the VAS as a self-report measure were examined here for reliability results.² All of the 28 studies examined report reliability coefficient alphas at an acceptable level. The range was .72 (Avtgis & Rancer, 2002) to .90 (Infante & Gorden, 1989), and most appear to be in the low to mid .80s. The VAS also appears to be stable and reliable across time. Infante and Wigley (1986) reported acceptable test-retest correlation scores ($r = .82, p < .001$) for a 4-week interval and Blickle and his colleagues (1998) reported slightly lower but still acceptable test-retest correlation scores ($r = .72, p < .05$) for an 8-week interval.

A review of the predictive and construct validity tests applied to the VAS suggests the scale indeed measures what it intends to measure (Infante, Rancer, & Wigley, 2011). Infante and Wigley (1986) reported that high scores on the VAS correlated with a preference for six verbally aggressive messages. Similarly, Infante and Rancer (1993) found, "persons high in trait verbal aggressiveness reported the most extensive use of the ten types of verbally aggressive messages" (p. 422). Infante and his colleagues (1992) also found "that high verbal aggressives perceived six of the ten types of verbal aggression as significantly less hurtful when compared to how low verbal aggressives perceived the messages" (p. 124). Furthermore, Infante et al. (1992) and Blickle et al. (1998) both offer strong evidence for the discriminant validity of the VAS. It seems however, when the 10 benevolently worded items and the 10 aggressively worded items are separated out in the analysis process the results are once again muddied. Chorry-Assad (2002) found the 10-item benevolence component of the VAS predicted actual verbal aggressiveness at a statistically significant level while the 10-item aggression component did not.

Meanwhile, Levine and colleagues reported contradictory findings (2004). Levine et al. showed the 10 aggressively worded items were significant predictors of both verbally aggressive message selection and verbally aggressive message generation, while the 10 benevolently worded items were not statistically significant predictors of verbally aggressive message selection or generation. It seems fair to conclude, as Blickle et al. (1998) did after their own validity testing: "Considering all of this evidence, it may be justified to consider verbal aggressiveness as a personality trait, and the VAS a valid tool of measurement" (p. 297).

² Anderson & Martin, 1999; Avtgis & Rancer, 1997; Avtgis & Rancer, 2002; Avtgis, Rancer, & Amato, 1998; Beatty et al., 1999; Blickle et al., 1998; Boster & Levine, 1988; Chesboro & Martin, 2003; Chorry-Assad, 2002; Hamilton & Mineo, 2002; Harman, Klopff, & Ishii, 1990; Infante & Rancer, 1993; Infante et al., 1992; Infante & Wigley, 1986; Kotowski, Levine, Baker, & Bolt, 2009; Lim, 1990; Martin & Anderson, 1996; Myers & Johnson, 2003; Payne & Sabourin, 1990; Rancer, Baukus, & Amato, 1986; Rancer et al., 1992; Rogan & La France, 2003; Sanders, Gass, Wiseman, & Brusckke, 1992; Suzuki & Rancer, 1994; Wigley, 1999; Wigley, Pohl, & Watt, 1989; Worthington, 2005.

Based on mixed findings regarding the dimensionality and the reliability of the VAS, we investigated the factor structure of the scale more fully. Specifically, we explored whether a one-vs. a two-factor structure for the VAS is more appropriate. Therefore, we pose the following:

RQ: What is the best-fitting factor structure for the Verbal Aggressiveness Scale?

Methods

Participants and Procedures

In total, 197 people completed the survey. After eliminating missing data, we had 185 participants. The participants consist of 49.7% (98) males and 50.3% (99) females, with a mean age of 28.57 ($SD = 12.45$). Upon completion of Human Subjects Review, data for this study were collected through standardized self-administered questionnaires in 2008. Individuals were recruited from communication courses and from social networks in northwest Ohio and western Texas. In some cases, a snowball sampling of participants took place, while in other cases individuals were contacted at social gatherings. Participants received no incentive or payment for participation.

Analytic Strategy

For ease of interpretation of the factor analyses, all 20 items were directionally aligned so that the most nonaggressive response was the highest score. Following the recommendation of Bollen (1989), we adopted a cross-validation approach for the factor analysis. In particular, we randomly split our 185 respondents into two samples of roughly equal size. The exploratory sample ($n = 88$) was used to perform an EFA on the items. The resulting model was then re-estimated as a CFA to establish benchmarks for goodness of fit. That is, the model that was “discovered” in the exploratory sample should exhibit a good fit to the same data. Fit indices from this procedure therefore provide a benchmark for goodness of fit with a fresh sample. The model was then validated by fitting it to the validation sample ($n = 97$) via CFA.

Initial EFA was accomplished using the method of principal axes, along with varimax rotation of the resulting solution. Squared multiple correlations between each item and all other items were used as initial communalities. Three criteria were used for determining the number of factors. We employed the eigenvalue rule and the scree plot, which are probably the best-known criteria for determining the number of factors (Gorsuch, 1983), along with the parallel analysis technique, which is less well-known but appears to be the most accurate (Allen & Hubbard, 1986; Longman, Cota, Holden, & Fekken, 1989). The correlations among the salient variables for the resulting factors were then examined and, if sufficiently large, an oblique rotation was then performed using promax rotation (Gorsuch).

Confirmatory factor analyses (CFAs) were estimated via the method of maximum likelihood (ML). While ML assumes the data come from a multivariate normal distribution, the technique has been shown to be fairly robust to violations of multivariate normality, provided the disturbance terms are uncorrelated with the predictors in an equation (Hu, Bentler, & Kano, 1992). We have no reason to suspect otherwise for the current models. As Bollen (1989) recommended, a variety of fit measures are reported for the CFAs: chi-squared, chi-squared/ df , RMSEA, Δ_1 , ρ_1 , Δ_2 , ρ_2 , and CFI. However, a Monte Carlo evaluation of these and other fit indices found the two most suitable indexes to be CFI and Δ_2 (Gerbing & Anderson, 1993).

Results

The initial EFA is shown in Table 1. The eigenvalue rule suggested a three-factor model, while the scree plot and parallel analysis criteria both pointed to a two-factor version. As overfactoring is preferred to underfactoring (Gorsuch, 1983), we opted for a three-factor

solution. Table 1 shows the varimax-rotated factor pattern with the dominant loading for each item underlined. Clearly, there are problematic items. Items 18 and 6, the last two items with dominant loadings on factor 1, as well as items 14 and 20, the last two items with dominant loadings on factor 2, have loadings with the wrong sign. As the items are directionally aligned, they should all have positive loadings on their dominant factor. However, these four items have negative loadings. Moreover, the very last item, item 9, loads on a separate factor that is ill defined, since only one item has a dominant loading on it. These results seemed to suggest we were overfactoring. Therefore, we re-ran the factor analysis after eliminating the five problematic items, and requested a two-factor solution.

Table 1. Factor Pattern Based on Orthogonal (Varimax) Rotation of Three-Factor Model for 20 Verbal Aggression Items

#	Verbal Aggression Item	Factor 1	Factor 2	Factor 3
10	When people criticize my shortcomings, I take it in good humor and do not try to get back at them	<u>.703</u>	.138	.357
5	When others do things I regard as stupid, I try to be extremely gentle with them	<u>.702</u>	.380	.272
17	I refuse to participate in arguments when they involve personal attacks	<u>.700</u>	.236	.192
8	I try to make people feel good about themselves even when their ideas are stupid	<u>.656</u>	.186	.432
1	I am extremely careful to avoid attacking individuals' intelligence when I attack their ideas	<u>.652</u>	.317	-.010
15	When I try to influence people, I make a great effort not to offend them	<u>.618</u>	.251	.262
3	I try very hard to avoid having other people feel bad about themselves when I try to influence them	<u>.612</u>	.271	-.037
12	When I dislike individuals greatly, I try not to show it in what I say or in how I say it	<u>.534</u>	.238	.418
18	When nothing seems to work in trying to influence others, I yell and scream in order to get some movement from them	<u>-.739</u>	-.137	.136

6	If individuals I am trying to influence really deserve it, I attack their character	<u>-.785</u>	-.141	-.324
11	When individuals insult me, I get a lot of pleasure out of really telling them off	.230	<u>.749</u>	-.005
2	When individuals are very stubborn, I use insults to soften the stubbornness	.294	<u>.717</u>	.267
19	When I am not able to refute others' positions, I try to make them feel defensive in order to weaken their positions	.027	<u>.675</u>	.126
4	When people refuse to do a task I know is important, without good reason, I tell them they are unreasonable	.316	<u>.674</u>	.089
13	I like poking fun at people who do things which are very stupid in order to stimulate their intelligence	.283	<u>.647</u>	-.048
16	When people do things that are mean or cruel, I attack their character in order to help correct their behavior	.083	<u>.644</u>	.069
7	When people behave in ways that are in very poor taste, I insult them to shock them into proper behavior	.405	<u>.564</u>	.257
14	When I attack persons' ideas, I try not to damage their self-concepts	-.319	<u>-.586</u>	-.377
20	When an argument shifts to personal attacks, I try very hard to change the subject	-.286	<u>-.639</u>	-.288
9	When people simply will not budge on a matter of importance I lose my temper and say rather strong things to them	.078	.087	<u>.424</u>

Note: $N = 88$. Dominant loadings are underlined.

The two-factor solution produced a clean parsing of the variables into the positively vs. negatively worded items. Following the lead of Levine et al. (2004), we named the factor representing the positively worded items "Ego-Enhancement." The items loading on this factor appear to tap a dimension of argumentation related to "ego-supportive communication" (p. 246). We named the other factor representing verbal aggressiveness "Non-Aggression," since these

items were reverse-coded from the original scoring. The three highest-loading ego-enhancement items were then correlated with the three highest-loading non-aggression items to assess whether an oblique rotation would be preferable (Gorsuch, 1983). As seven of the nine correlations were significant, we performed an oblique rotation using promax with a power of 2. Table 2 shows the resulting factor solution. All loadings are above .4. The most reliable indicators of each factor are “I try to make people feel good about themselves even when their ideas are stupid” for ego-enhancement, and “When I am not able to refute others’ positions, I try to make them feel defensive in order to weaken their positions” for non-aggression. The interfactor correlation is estimated to be .403.

Table 2. Factor Pattern Based on Oblique (Promax) Rotation of Two-Factor Model of 15 Retained Verbal Aggression Items.

#	Verbal Aggression Item	Ego-Enhancement	Non-Aggression
8	I try to make people feel good about themselves even when their ideas are stupid	<u>.836</u>	-.046
10	When individuals criticize my shortcomings, I take it in good humor and do not try to get back at them	<u>.764</u>	-.018
17	I refuse to participate in arguments when they involve personal attacks	<u>.745</u>	.042
5	When others do things I regard as stupid, I try to be extremely gentle with them	<u>.727</u>	.225
12	When I dislike individuals greatly, I try not to show it in what I say or in how I say it	<u>.687</u>	.061
15	When I try to influence people, I make a great effort not to offend them	<u>.667</u>	.106
1	I am extremely careful to avoid attacking individuals’ intelligence when I attack their ideas	<u>.587</u>	.181
3	I try very hard to avoid having other people feel bad about themselves when I try to influence them	<u>.522</u>	.179
19	When I am not able to refute others’ positions, I try to make them feel defensive in order to weaken their positions	-.065	<u>.746</u>

11	When individuals insult me, I get a lot of pleasure out of really telling them off	.086	<u>.744</u>
16	When people do things which are mean or cruel, I attack their character in order to help correct their behavior	-.030	<u>.714</u>
2	When individuals are very stubborn, I use insults to soften the stubbornness	.307	<u>.596</u>
4	When people refuse to do a task I know is important, without good reason, I tell them they are unreasonable	.259	<u>.588</u>
13	I like poking fun at people who do things which are very stupid in order to stimulate their intelligence	.158	<u>.585</u>
7	When people behave in ways that are in very poor taste I insult them to shock them into proper behavior	.398	<u>.452</u>
Interfactor Correlation		.403	

Note: $N = 88$. Dominant loadings are underlined.

The next step involved fitting this model to the validation sample using CFA. But first we fit it to the exploratory sample to establish a benchmark for comparison. Table 3 shows the benchmark and the validating CFAs for this factor model. Chi-squared statistics for benchmark and validating results, at 89 *df*, are significant, at $p < .001$. Thus, by a formal test of fit, both models fail. However this test is generally eschewed because of its stringent null hypothesis that the model has an exact fit to the data. More realistic is the notion the model demonstrates a close fit to the data (Browne & Cudeck, 1993). The test of close fit also flatly rejects the model for the benchmark CFA ($p < .001$), but is only just significant ($p = .044$) in the validation CFA. The fit of the model to the validating sample appears to be better than the benchmark. This conclusion is also reflected in the various fit indices, which are all superior in the validating analysis, compared to the benchmark analysis. Moreover, RMSEA values under .08 indicate an adequate fit of the model to the data (Browne & Cudeck, 1993). Thus, RMSEA for the validation sample, at .077, suggests an acceptable fit. This conclusion is reinforced by considering Δ_2 and CFI, the two measures favored by Gerbing and Anderson (1993). Both are above the cutoff of .9 deemed the criterion for a good-fitting model (Bollen, 1989). The interfactor correlation for the validating analysis, at .767, is substantially higher than that suggested by the EFA. In fact, one might question whether a two-factor model is necessary, given such a high interfactor correlation. We therefore tested whether a significant loss in fit would be incurred by forcing all 15 items to load on just one factor (not shown). However, the chi-squared difference statistic

was 59.022 with 1 *df*, which was significant ($p < .0001$). Thus, a one-factor model does not fit these verbal aggressiveness items.

Table 3. Benchmark and Validating Confirmatory Factor Analyses of 15 Retained Verbal Aggression Items.

#	Verbal Aggression Item	Benchmark ^a		Validating ^b	
		Ego Enhancement	Non- Aggression	Ego Enhancement	Non- Aggression
8	I try to make people feel good about themselves even when their ideas are stupid	.775		.727	
10	When people criticize my shortcomings, I take it in good humor and do not try to get back at them	.760		.741	
17	I refuse to participate in arguments when they involve personal attacks	.743		.592	
5	When others do things I regard as stupid, I try to be extremely gentle with them	.858		.810	
12	When I dislike individuals greatly, I try not to show it in what I say or in how I say it	.706		.789	
15	When I try to influence people, I make a great effort not to offend them	.699		.740	
1	I am extremely careful to avoid attacking individuals' intelligence when I attack their ideas	.704		.790	
3	I try very hard to avoid having other people feel bad about themselves when I try to influence them	.617		.484	

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19	When I am not able to refute others' positions, I try to make them feel defensive in order to weaken their positions	.640	.667
11	When individuals insult me, I get a lot of pleasure out of really telling them off	.768	.707
16	When people do things which are mean or cruel, I attack their character in order to help correct their behavior	.621	.486
2	When individuals are very stubborn, I use insults to soften the stubbornness	.796	.682
4	When people refuse to do a task I know is important, without good reason, I tell them they are unreasonable	.744	.728
13	I like poking fun at people who do things which are very stupid in order to stimulate their intelligence	.677	.564
7	When people behave in ways that are in very poor taste, I insult them to shock them into proper behavior	.706	.828
Interfactor Correlation		.685	.767
Chi-Squared		166.239	139.451
Chi-Squared/df		1.868	1.567
RMSEA		.100	.077
Δ_1		.794	.823
ρ_1		.757	.791
Δ_2		.892	.928
ρ_2		.870	.913
CFI		.890	.926

^a $N = 88$.

^b $N = 97$.

Discussion

Due to disagreement regarding the dimensionality of the VAS, we re-investigated its factor structure. We found five items with problematic loadings that were dropped from further consideration. These were items 6, 9, 14, 18, and 20. Finding items 18 and 20 problematic is consistent with prior factor-analytic work on this scale (Beatty et al., 1999; Boster et al., 1993; Suzuki & Rancer, 1994). Finding items 6, 9, and 14 to be troublesome is unique to our analysis. There does not appear to be any systematic pattern in the loadings of these five items that suggests why they do not fit with the others. If items 18 and 6 were reverse-coded, they would load on the Ego-Enhancement factor. Similarly, if items 14 and 20 were reverse-coded, they would load on the Non-Aggression factor. However, either scenario makes little sense, since the items in question, should load with similarly worded counterparts on the *other* factor. Hence, we suggest omitting these five items until their factor structure can be ascertained in future studies.

The remaining 15 items showed a clear two-factor structure according to a cross-validation approach involving EFA and CFA. The final factor model exhibited an acceptable fit to the data. In sum, similar to previous factor-analytic research on the VAS, the results of this study verify a two-factor solution to the VAS (Levine et al., 2004). We identify a factor consisting of eight positively worded items as “ego-enhancement,” and a factor consisting of seven items that tap aggressiveness as “non-aggression.” The two-factor solution proved to be a better fit than the one-factor solution, according to the chi-squared difference statistic. The 15 items in our final factor model could be employed as a single scale tapping verbal aggressiveness or as separate subscales tapping the two subdimensions of aggressiveness. This study adds further evidence to the assertion that scoring Infante and Wigley’s (1986) 20-item VAS as a unidimensional factor is creating a “unidimensional-model with bad items” (Levine et al, p. 261). The overall scale had a reliability of .92, while the Ego-Enhancement subscale’s reliability was .90 and the Non-Aggression subscale’s reliability was .87. Whether scored as a unidimensional scale or as separate subscales, the items in our final factor model exhibit high reliability.

This study has two limitations. Like all verbal aggressiveness research, this study relies on a convenience and not a random sample. Hence, the resulting factor structure cannot be assumed to characterize a known population. However, as these results are consistent with several other analyses of the VAS utilizing similar samples (e.g. Anderson & Martin, 1999; Avtgis & Rancer, 1997; Infante & Wigley, 1986; Wigley, 1999), it is likely the factor structure we discovered is robust. The second limitation of this study pertains to the integrity of the two subdimensions of the VAS found in this study. Although both subdimensions exhibit acceptable reliability, there is no guarantee they are also valid measures of the constructs of interest: non-aggression and ego-enhancement, respectively.

Future research should continue to explore the factor structure of the VAS. As studies have examined the VAS and discovered divergent structures and recommended differing models, it is prudent to pursue further investigations in different cultural settings (Suzuki & Rancer, 1994) and among non-students. This type of research may generate more accurate understanding of not only the structure of the VAS, but also of verbal aggression. Perhaps, this type of validity testing of the VAS represents a need for further conceptual and measurement refinement of “verbal aggression.” This definition of this term may need to be reconsidered (Chory-Assad, 2002).

This study sought to clear up confusion over the factorial complexion of the Verbal Aggressiveness Scale by exploring the scale’s dimensionality. Data were consistent with a two-

factor model with a “Non-Aggression” and an “Ego-Enhancement” factor. Ultimately, the results of exploratory and confirmatory factor analyses reveal this final 15-item factor model can be used as a single scale or as separate scales tapping two subdimensions of aggressiveness.

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