DISENTANGLING AGGRESSIVENESS AND ASSERTIVENESS WITHIN THE MMPI-2 PSY-5 AGGRESSIVENESS SCALE

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CHAPTER 1

INTRODUCTION

Review of Literature

Aggression is a complex behavior that has been studied from a wide array of theoretical perspectives including the psychoanalytical theory of Freud (Gross, 1992), the ethological theory of Lorenz (1966), and the social learning theory of Bandura (1963). Additionally, theorists have proposed that aggression exists in many different forms (Berkowitz & Donnerstein, 1982; Buss, 1961; Dodge & Coie, 1987; Moyer, 1976). Consequently, there is disagreement about the most suitable way to define and measure the construct of aggression.

While no single definition of aggression will completely satisfy the whole of the scientific community, most would likely accept the following definition offered by Baron and Richardson (1994) as being representative of the construct: “Aggression is any form of behavior directed toward the goal of harming or injuring another living being who is motivated to avoid such treatment.” Importantly, this definition requires that an aggressive behavior must include both the intent to harm another, from the standpoint of the aggressor, and a living being who desires to avoid the aggressive act. The definition put forth by Baron and Richardson allows for many behaviors to qualify as acts of aggression, as harm toward a living being may include human or animal and may take
any form spanning from physical to emotional injury. Still, most are likely to perceive aggression as involving physical harm directed toward another person, a behavior that more closely approximates violence than aggression per se.

In addition to the fact that aggression may be expressed apart from physical violence, an aggressive act may reflect any number of mediating factors that vary based on the motives and intentions of the aggressor (Tedeschi & Quigley, 1996; Giancola & Chermack, 1998). For example, it is common for competitors in contact sports to express a great deal of respect for one another immediately following a hard-fought match or game. We would clearly fail in our appraisal of these situations if we merely attend to the motivation to cause harm to one’s opponent, yet neglect the impact of other potential motives including financial gain, pursuit of fame or respect, and desire to entertain a crowd. Additionally, such scenarios illustrate the fact that aggression need not always be negatively sanctioned. We need only consider the prize fighter whose demonstration of physical aggression within the boxing ring elicits enthusiastic cheers from a crowd, whereas a lack of physical aggression often arouses protests. Consistent with the recognition that aggression is not always met with social disapproval, Storr (1970) described the existence of a positive facet of aggressive drive, operating at both the personal and professional level, which forms the basis of our intellectual achievement and fosters our striving toward independence and pride in ourselves.

In attempting to appropriately account for the multifaceted nature of aggression, one may be best served by forgoing a “one-size-fits-all” definition and
adopting a broader perspective that recognizes the many nuances of the behavior. Upon considering the many expressions of aggression, Siann (1985) provided the following summational definition of the construct: “Aggression involves the intent to inflict hurt or emerge superior to others, does not necessarily involve physical injury, and may or may not be regarded as being underpinned by different kinds of motives. It is not always negatively sanctioned.”

Siann’s definition expands beyond narrower definitions to reflect a greater appreciation for the role of the situational context on the expression of aggression. In recent years, the appeal of a broader perspective seems to have grown and there is now general consensus within the scientific community that there exist at least two broad categories of aggression: hostile, affective, or retaliatory aggression and instrumental, predatory, or goal-oriented aggression (Berkowitz, 1993; Bushman & Anderson, 2001; McElliskem, 2004; Vitiello, Behar, Hunt, Stoff, & Ricciuti, 1990).

*Aggressiveness and Assertiveness*

Further consideration of the existence of a positive facet of aggression gives rise to questions about whether some behaviors would best be described as aggressive, assertive, or as some combination of the two. Like aggression, assertiveness is a multidimensional construct. Assertion has been described as the act of asking for what one wants, the refusal of that which one does not want, and the expression of positive and negative messages to other people (Booream & Flowers, 1978). These positive and
negative behaviors and emotional expressions must be interpreted within the context of their occurrence (Galassi & Galassi, 1978). Consider a successful salesperson attempting to outperform a coworker in an effort to secure a promotion. We would likely label this as assertive behavior given our understanding that the salesperson has no feelings of ill-will toward her coworker. However, the coworker may perceive the behavior solely as an act of aggression.

Regardless of exactly where the line between assertiveness and aggression is drawn, it is clear that the two constructs are intimately related in at least some situations. In relation to aggression, it could be argued that assertiveness is best understood as moderate aggression that typically involves no intention of harming another, is not negatively sanctioned, and may include attempts to emerge superior to others. In this manner, assertiveness appears to share more in common with instrumental or goal-oriented aggression as opposed to hostile or retaliatory aggression. Given the clear potential for overlap between the constructs of aggression and assertiveness, great care must be taken to ensure they are measured accurately.

Measurement of Aggression

Aggression is typically measured within experimental settings or via use of self-report instruments, and both of these methods have their relative strengths and weaknesses. The measurement of aggression in experimental settings is attractive given the ability of the experimenter to exert greater control over the manner with which
aggression is both expressed and measured. However, behavioral assessment of aggression is often more difficult, expensive and time consuming than alternatives such as pencil-and-paper tests. It is also likely that aggression in the laboratory differs in significant ways from aggression expressed within the “real world” (Tedeschi & Quigley, 1996). While some have argued in support of the external validity of laboratory experiments (Berkowitz & Donnerstein, 1982), the claims against their external validity are numerous.

Individuals responding to laboratory aggression paradigms may feel pressure to comply with authority figures, and such paradigms legitimize aggression because participants are often asked to shock or otherwise aggress against others. Additionally, the lack of nonaggressive response actions decreases confidence that aggression is truly being measured (Tedeschi & Quigley, 1996). For example, the Point Subtraction Aggression Paradigm (PSAP; Cherek, 1991) permits only two responses by the participant. One choice is to gain points for oneself by acting in an independent manner, without interacting with the opponent. The other choice is to gain points for oneself by taking them away from an opponent in a competitive, and presumably aggressive, manner. Because the participant can only interact with the opponent via the aggressive act of taking away points, researchers employing this paradigm are not permitted to explore other, potentially more complex, determinants of a participant’s actions. It may be that a participant would not choose to aggress against their opponent if they were permitted to choose a third option such as gambling with their opponent to acquire points.
By limiting participant responses to a forced choice between an aggressive and nonaggressive action we ignore many alternative responses that are typically available outside the walls of the laboratory.

In general, the more valid that a laboratory expression of aggression appears, the less ethical it is to carry out the experiment. Therefore, researchers seeking to behaviorally assess aggression using human participants are forced to make do with scenarios in which the generalizability of the experiment may become questionable. An example of this is Cantor and colleagues’ (1978) use of the administration of a noxious noise to provoke aggression.

A popular alternative to employing laboratory paradigms is the use of pencil-and-paper tests that rely on self-report to measure aggressive behavior (Buss & Perry, 1992). While not immune to threats to external validity, these measures tend to be faster, less expensive, and easier to administer than behavioral measures of aggression while also raising fewer ethical concerns. Given the multifaceted nature of aggression, many independent self-report instruments exist to assess the construct. Examples include the Buss-Durkee Hostility Inventory (Buss & Durkee, 1957), Test of Negative Social Exchange (Ruehlman & Karoly, 1991), Abusive Behavior Inventory (Shepard & Campbell, 1992), Aggression Questionnaire (AQ; Buss & Perry, 1992), and Reactive-Proactive Aggression Questionnaire (RPQ; Raine et al., 2006). Other aggression scales, such as the Psychological Aggression Scale of the Conflict Tactics Scales (Straus, 1979), are contained within broader measures. Some studies have demonstrated that pencil-and-
paper measures of aggression strongly correlate with behavioral measures of aggression (e.g., r = .77; Carlson, Marcus-Newhall, & Miller, 1989). However, the test-retest reliability of such self-reports is less impressive (Wolfe, Scott, Reitzel-Jaffé, Wekerle, Grasley, & Straatman, 2001; Krahé, Reimer, Scheinberger-olwig, & Fritsche, 1999) which calls into question whether one is assessing an aggressive trait or a more transient aggressive mood.

*Measuring Assertiveness by Self-Report*

Although not nearly as abundant as self-report measures of aggression, some assertiveness self-report measures are available. Examples include the Rathus Assertiveness Schedule (RAS; Rathus, 1973), the College Self Expression Scale (Galassi, DeLo, Galassi, & Bastien, 1974), the Adult Self Expression Scale (Gay, Hollandsworth, & Galassi, 1975), and the Assertiveness Self-Report Inventory (ASRI; Herzberger, Chan, & Katz, 1984). As with the measurement of aggression, the multidimensional nature of assertiveness presents challenges to investigators employing pencil-and-paper self-report measures.

*The PSY-5 Constructs*

The MMPI-2 is a 567 item self-report instrument that measures personality and psychopathology (MMPI-2; Butcher, Ben-Porath, Tellegen, Dahlstrom, & Kaemmer, 2001). Several MMPI-2 scales have been correlated with constructs related to
aggression. The Hostility (Ho) scale and Anger (ANG) Content scale have been found to measure hostility, anger and retaliatory behavior (Smith & Furlong, 1994; Castora, Brewster & Stoloff, 2003). O’Laughlin and Schill (1994) observed that a composite score, consisting of the Anger Content scale, F, 4 (psychopathic deviate) and 9 (hypomania), was related to aggressive behavior. However, while there are several MMPI-2 scales available to measure components or aspects of aggression no scale had yet been specifically developed to measure the construct of aggression more broadly.

Harkness and McNulty (1994) developed the Personality Psychopathology Five (PSY-5) model to represent broad bandwidth personality constructs theorized to exist on continua ranging from normal to abnormal personality functioning. The PSY-5 is a Five Factor Model, yet it differs significantly from traditional Five Factor Models such as The Big Five (John, 1990) and NEO-PI-R (Costa & McCrae, 1992) in that the PSY-5 seeks to assess abnormal personality functioning in addition to explaining normal functioning.

Development of the PSY-5 constructs began by examining the psychological distances between descriptors based on personality disorder criteria from the Diagnostic and Statistical Manual-III-R (DSM-III-R; American Psychiatric Association, 1987), normal personality traits from the Multidimensional Personality Questionnaire (MPQ; Tellegen, 1982), and psychopathy descriptors used by Cleckley (1982). Psychological distances utilizes measurements of the degree of similarity and dissimilarity of pairs of diagnostic criteria and trait descriptions as judged by a group of raters (in this case, college students). Harkness and McNulty (1994) then employed cluster and latent root
analyses to identify five main personality constructs based on the distances between the
descriptors contained within the item pool. These five constructs were subsequently
labeled Aggressiveness, Psychoticism, Constraint, Negative Emotionality/Neuroticism,
and Positive Emotionality/Extraversion.

Harkness and McNulty (1995) described the higher-order trait of Aggressiveness
as a multifaceted construct primarily measuring individual dispositional differences in
instrumental or offensive aggression (Moyer, 1987) rather than defensive or reactive
aggression. The construct also encompasses tendencies of individuals toward power,
interpersonal control and grandiosity, which may contribute to future acts of aggression.

The MMPI-2 PSY-5 Scales

The MMPI-2 PSY-5 Scales were subsequently constructed to measure the PSY-5
constructs through the use of a replicated rational selection procedure (Harkness,
McNulty, & Ben-Porath, 1995). This procedure employed lay persons (college students)
who were trained on the PSY-5 constructs and later asked to identify MMPI-2 items
corresponding to each of the five constructs. All items selected by at least 51% of raters
for a given PSY-5 construct were then used to form preliminary scales that were later
refined by the first two authors using rational and statistical procedures. The resulting
scales were Aggressiveness (AGGR), Psychoticism (PSYC), Disconstraint (DISC),
Negative Emotionality/Neuroticism (NEGE), and Introversion/Low Positive
Emotionality (INTR). Consistent with the Aggressiveness construct, the authors
maintained that the 18-item AGGR scale measures offensive and instrumental aggression rather than defensive or reactive aggression. The factor structure of the final PSY-5 scales was later supported through confirmatory factor analyses conducted by Bagby, Ryder, Ben-Dat, Bacchiochi, and Parker (2002). The authors observed that the PSY-5 model outperformed both a random five-factor model and a one-factor model in their ability to fit the PSY-5 items.

Reliability analyses for each of the PSY-5 scales have demonstrated acceptable internal consistency coefficients (Alpha) in a variety of settings (Harkness, McNulty, Ben-Porath, & Graham, 2002) with the Aggressiveness scale yielding .67 for males and .65 for females in the MMPI-2 normative sample (see Butcher, et al., 2001) and an Alpha of .73 for a clinical sample with combined genders. Test-retest reliability for the combined gender of the normative sample was .82 for a one-week interval.

Studies examining the validity of the AGGR scale have yielded mixed results. With regard to convergent validity, the scale has generally fared well, with AGGR demonstrating strong associations with MPQ Aggression (Harkness et al., 1995) as well as a host of historical indicators of physical aggression, including juvenile offenses, history of violence, hostility, and being physically abusive (Graham, Ben-Porath, & McNulty, 1999; Petroskey, Ben-Porath, & Stafford, 2003). Given that a primary goal in creating the PSY-5 scales was to assist in the diagnosis of personality disorders, it is reasonable to expect that PSY-5 AGGR would relate to a diagnosis of Antisocial Personality Disorder. Wygant et al. (2006) hypothesized that PSY-5 AGGR would add
incrementally to the prediction of the Multiaxial Diagnostic Inventory Antisocial Personality Scale (MDI; Doverspike, 1990) scale beyond that predicted by scale 4 (Pd), scale 9 (Ma), and the ASP content scale. However, while the Antisocial Practices (ASP) and Disconstraint scale (DISC) added significantly to the incremental prediction beyond clinical scales 4 (Psychopathic Deviate) and 9 (Hypomania), AGGR did not add to the prediction of the Antisocial MDI scale beyond scales 4, scale 9, and ASP. This is somewhat surprising given that the original PSY-5 constructs were based, in part, on DSM-III-R personality disorder criteria. The AGGR scale has also been observed to correlate with variables that are not directly related to the construct definition put forth by Harkness and McNulty (1994), including social potency and extraversion (Trull, Useda, Costa, & McCrae, 1995).

It appears that, in addition to the construct of aggression, the AGGR scale may be measuring protective factors within individuals as indicated by positive correlations with scales measuring a lack of psychological discomfort. For example, Harkness, Spiro, Butcher, and Ben-Porath (1995) noted a moderate positive relationship between the AGGR scale and scale F (Happy-go-lucky vs. Sober) on Cattell’s (1970) 16PF and a strong positive correlation between AGGR and the Positive Emotionality scale on the MPQ. Furthermore, strong negative correlations have been observed between the AGGR scale and MMPI-2 Scale 2 - Depression as well as other MMPI-2 scales measuring psychological discomfort (Harkness, et al., 1995). While the reason for these findings remains unclear, the positive facet of aggressive drive described by Storr (1970) may help
to clarify the seemingly paradoxical finding that AGGR correlates with historical indicators of physical aggression, yet also with a lack of psychological discomfort. That is, perhaps it is the act of striving toward independence and asserting oneself, independent of whether or not the behavior is negatively sanctioned, that links these findings. Alternatively, it may be that persons who commit acts of physical aggression simply do not feel as distressed as those who do not commit such acts.

Given the complex interplay between aggression and assertiveness, it is not surprising that, in addition to measuring aggression, the AGGR scale also measures a degree of assertiveness within individuals. Evidence for this can be found in the research of Harkness and colleagues (1995) who examined the construct validity and stability of the PSY-5 scales by correlating them with scores from the 16PF (see Cattell, Eber, & Tatsuoka, 1970) using the Boston VA Normative Aging Sample (NAS); Bossé, Ekerdt, & Silbert, 1984). The authors compared PSY-5 and 16PF correlations calculated for men in the NAS between 1965-1967, and compared these with the correlations for the same men collected 24 to 26 years later in 1991. In this study, PSY-5 AGGR correlated strongest over time with 16PF Scale E, “Assertive vs. Humble” for which the descriptors: “assertive” and “competitive” as well as “aggressive” are provided in the 16PF Manual (IPAT staff, 1986). Additionally, Trull and colleagues (1995) found strong positive associations between PSY-5 AGGR and the NEO-PI-R (Costa & McCrae, 1992) Assertiveness facet of the Extraversion scale. Graham et al. (1999) observed that AGGR was significantly negatively correlated with passivity in relationships for women. PSY-5
AGGR is not the first aggression scale to have been linked with assertiveness. For example, Buss and Perry (1992) found positive relationships between aggression and assertiveness, competitiveness, and impulsiveness.

Because a high level of aggressiveness is generally regarded as a problematic personality trait and assertiveness as a positive, it is particularly important that clinicians have access to the relative impact of client assertiveness on AGGR scale elevations. To the extent that PSY-5 AGGR is sensitive to the presence of client assertiveness, the inability to differentiate this assertiveness may conceal client strengths while overemphasizing the more problematic trait of aggressiveness. The difficulty inherent in distinguishing boundaries between aggressive and assertive behavior underscores the importance of employing measures that uniquely assess each construct or, at the very least, minimize the degree to which a measure of aggression is also measuring assertiveness and vice versa.

*The PSY-5 Aggressiveness (AGGR) Facet Scales*

Arnau, Handel, & Archer (2005) constructed the PSY-5 facet scales to assist in the interpretation of the PSY-5 scales. With the creation of these facets, the relationship between aggressiveness and assertiveness within the AGGR scale became somewhat clearer. To construct the facets scales, the authors randomly drew three samples of 5,000 protocols from a large database of MMPI-2 protocols (from 1989-1999). The samples consisted mostly of protocols from outpatient mental health clients, with inpatients,
general medical patients, and chronic pain patients making up the remainder of the protocols. Principal Components Analysis (PCA) was performed for each of the PSY-5 scales in the first sample. The eigenvalues from these data were then compared to those derived from a random configuration of comparable data. Components with eigenvalues greater than those of the random data were retained and the resulting factor solution was replicated using the second sample. The third sample was used to improve the internal consistency of the scales.

Three facets were identified for the AGGR scale. The first facet, Assertiveness, was described as a measure of social aggression. The second facet, Physical/Instrumental Aggression, measures physical aggression. The final factor, Grandiosity, measures grandiose thinking (Arnau, Handel, Archer, Bisconer, & Gross, 2004). Reliability analyses based on the three samples used in their creation indicated moderate internal consistency for two of the AGGR facets with Alphas ranging from .67-.68 for Assertiveness and .62-.65 for Physical/Instrumental Aggression. The final facet of Grandiosity did not fare as well with Alphas ranging from .49-.50.

Arnau et al. (2004) conducted preliminary analyses to examine facet scale correlates in an adult psychiatric sample by comparing facet scale scores with information contained within the Record Review Form created by Arbisi, Ben-Porath, and McNulty (RRF; 2003). The RRF included standardized data extracted from patient clinical records and charts. The authors observed that criminal justice involvement was significantly related to the Physical/Instrumental Aggression facet but not with the
Assertiveness facet. Interestingly, the AGGR parent scale and Assertiveness facet were both significantly negatively correlated with depression whereas the Physical/Instrumental Aggression facet was not. This would seem to suggest that previously observed relationships between the AGGR parent scale and scales measuring a lack of psychological discomfort (Harkness et al., 1995; Harkness et al., 1995) may have resulted from the presence of a healthy assertiveness component imbedded within the AGGR scale.

In summary, aggression is a complex behavior that has been both defined and categorized in a wide variety of ways. The expression of aggression takes many forms apart from physical violence, is mediated by the motives and intentions of the aggressor, and is not always negatively sanctioned. Numerous reports of significant associations between aggression and a lack of psychological discomfort, consistent with the concept of a positive facet of aggressive drive described by Storr (1970), lend support to claims that aggression functions, in part, as a psychological protective factor. The value obtained from asserting oneself, independent of whether or not the behavior is negatively sanctioned, suggests that the line drawn between the psychological benefits of engaging in aggressive and assertive behaviors is, at best, a blurred one.

The importance of accurately distinguishing between harmful and beneficial aspects of aggression becomes crucial when clinicians seek to gain understanding of a client based on the interpretation of a scale such as AGGR. Because the two constructs of aggressiveness and assertiveness are entangled within the AGGR scale, one cannot be
confident of the reason for the scale’s elevation or of the appropriate interpretation that should follow. A closer look at the items composing the AGGR scale permits a clearer illustration. For men, a minimum endorsement of 13 items, out of the 18 items composing AGGR, is required to obtain a T-Score greater than 65. Recall that Arnau and colleagues (1995) observed that 7 out of these 18 items comprise the Assertiveness facet scale. Therefore, it is possible for men to obtain an elevated AGGR scale even when a majority of endorsed items (7/13) may be primarily measuring assertiveness. The implications are even more striking for women, for whom the endorsement of only 11 items is sufficient to obtain an AGGR T-Score greater than 65. Thus, it is possible for women to elevate their AGGR scale even when up to 64% (7/11) of endorsed items may primarily assess assertiveness. Certainly, if the AGGR scale is to assist in the diagnosis of Antisocial Personality Disorder, the extent to which AGGR measures aggressiveness, assertiveness, or both must be made clear.

The current study empirically addressed this issue by examining the construct validity of the AGGR parent scale through comparison of three structural models utilizing external measures of aggressiveness and assertiveness. It was hypothesized that a model in which aggressiveness and assertiveness exist as separate constructs would provide a better fit to data reflecting self-reports of aggression and assertiveness, than would a model in which the two constructs were combined.
CHAPTER 2

METHOD

Participants

Participants (n = 395) were recruited from undergraduate psychology courses at a large Midwestern University and received bonus course credit as compensation for completing the questionnaires. MMPI-2 validity exclusion criteria were used to detect invalid self-reports (CNS ≥ 30, TRIN/VRIN ≥ 80, Fp ≥ 99). After removal of all participants who had invalid MMPI-2 protocols (n = 94) or missing data on either of the other two instruments (n = 7), a final sample was obtained (n = 294). Participants were primarily women (68%, n = 201), ranged in age from 18 to 46 years (M = 19, SD = 2.29), and the mean level of self-reported education was 12.45 years (SD = 1.12). Although racial and ethnic information was not recorded in the current study, previous research conducted with this population indicates that the sample was drawn from a group that is approximately 90% Caucasian and approximately 5% African American. Additionally, there were no significant differences in demographic variables, such as ethnicity, age, and gender, between included and excluded participants in their demographic make up.

Measures

The *Minnesota Multiphasic Personality Inventory*-2 (MMPI-2; Butcher et al.,
2001) is a 567-item self-report personality inventory. The MMPI-2 PSY-5 scales (Harkness, et al., 2002) include five scales developed to assess major dimensions of normal and abnormal personality based on a model of personality psychopathology derived from personality and personality disorder descriptors (Harkness & McNulty, 1994). The PSY-5 AGGR scale includes 18 items designed to assess offensive and instrumental aggression (Harkness, et al., 2002). Arnau, Handel, & Archer (2005) created the PSY-5 AGGR facet scales to assist in the interpretation of the AGGR parent scale. The first facet, Assertiveness, includes seven items and was described as a measure of social aggression. The second facet, Physical/Instrumental Aggression, measures physical aggression and includes eight items. The final factor, Grandiosity, measures grandiose thinking and includes 3 items (Arnau et al., 2005).

The 29-item Aggression Questionnaire (AQ; Buss & Perry, 1992) was selected as a measure of aggressiveness. Participants rate the degree to which they believe statements describing aggressive views and actions are characteristic of them on a 5-point Likert scale ranging from 1 to 5 (1 = Extremely uncharacteristic of me, 5 = Extremely characteristic of me). In addition to a total score, the AQ contains four subscales that resulted from a factor analysis of data provided by college students. Buss and Perry employed confirmatory factor analysis to confirm the 4-factor structure. The Physical Aggression (PA) subscale contains nine items, Verbal Aggression (VA) contains five items, Anger (A) contains seven items, and Hostility (H) contains eight items. The 4-factor structure of the AQ was replicated in a study by Harris (1995), using a comparable
sample of college students. The AQ has also demonstrated validity cross culturally (Gerevich, Bácskai, & Czobor 2007). Several studies have linked higher scores on the AQ with greater aggressive use of electric shock and white noise against a false opponent (Bushman, 1995; Cleare & Bond, 1995; Giancola & Zeichner, 1995a, 1995b; Hammock & Richardson, 1992; Knott, 1970; Pihl, Lau, & Assaad, 1997).

The 30-item Rathus Assertiveness Schedule (RAS; Rathus, 1973) was selected as a measure of assertiveness. Participants rate the degree to which they believe statements describing assertive views and actions are characteristic or descriptive of them on a 6-point Likert scale ranging from –3 to 3 (-3 = Very uncharacteristic of me, extremely nondescriptive, 3 = Very characteristic of me, extremely descriptive). Scores on the RAS can vary from -90 to 90, with higher positive scores indicating greater levels of assertiveness. Several studies have supported the high reliability and concurrent and predictive validity of the RAS (Norton & Warnick, 1976; Pearson, 1979; Rathus, 1972), and McCormick (1984) supported the construct validity of the RAS by noting significant correlations with conceptually relevant scales measuring impressions made on others. The RAS has demonstrated evidence of good internal consistency and stability with a split-half reliability of .77 and a test-retest reliability of .78 over eight weeks (Rathus, 1973). The RAS has also demonstrated validity cross culturally and strong concurrent validity with trained raters’ impressions of assertiveness (Suzuki, Kanoya, Katsuki, & Sato, 2007; Voltan, 1980).
Procedure

*Institutional Review Board (IRB) approval was obtained prior to data collection.*

All participants completed the AQ, RAS, and MMPI-2, which yielded scores for the PSY-5 AGGR scale and its facet scales, in counterbalanced order during a single session. At the beginning of the session, all participants were read standardized instructions. All participants received course credit upon the completion of their session.

Data Analysis

*Variables*

Several variables were selected for inclusion as indicators of the constructs in the current study. The construct of aggressiveness was measured with PSY-5 AGGR Facet 2 (Physical/Instrumental Aggression) as well as AQ-PA (Physical Aggression) and AQ-VA (Verbal Aggression), whereas the construct of assertiveness was measured with PSY-5 AGGR Facet 1 (Assertiveness) and the RAS.

*Correlations*

Prior to conducting confirmatory factor analyses (CFA), zero-order correlations were calculated to examine the appropriateness of all indicators. It was expected that indicators measuring aggressiveness (i.e., AGGR2, AQ-PA, and AQ-VA) would correlate more strongly with one another than they would with indicators measuring assertiveness (i.e., AGGR1 and RAS). Similarly, it was expected that indicators measuring
assertiveness would correlate more strongly with one another than they would with indicators measuring aggressiveness.

The correlation between the constructs of aggressiveness and assertiveness is of particular importance in the current study. A weak correlation would suggest the constructs are not meaningfully related and would challenge the value of their inclusion within a common scale. A very strong correlation would suggest the constructs are nearly synonymous with one another and would support their inclusion within a common scale. A moderate correlation may suggest the two constructs are related yet are not so highly overlapping as to indicate that they are synonymous with one another. Thus, although the constructs would be related, the unique measurement of either construct may be obfuscated by the presence of the other within a common scale. Consequently, the reason for an elevation on AGGR becomes uncertain as does the decision of whether to interpret the elevation as aggressiveness, assertiveness, or both. Lastly, a moderate correlation between the two constructs would support either the inclusion of facet scales (e.g., AGGR1 and AGGR2) to inform a parent scale elevation or use of more homogeneous scales for measuring the constructs with greater precision.

**Confirmatory Factor Analysis**

Three confirmatory factor analyses were conducted using structural equation modeling (SEM). SEM is a contemporary approach to estimating causal relationships that is well suited for theory testing. A particular strength of SEM is the ability to model
constructs as latent variables, which are estimated in the model from measured variables thought to tap into the constructs. In the current study, the constructs of aggressiveness and assertiveness were estimated from conceptually relevant scales that had previously demonstrated evidence of validity and reliability in the assessment of each of these constructs.

Selection of Indicators

In order to facilitate the creation of models that accurately represented the constructs of aggressiveness and assertiveness, the selection of appropriate indicator variables for these latent constructs was necessary. The inclusion of at least three indicators for each construct was required to ensure that each model was overidentified. To meet this statistical requirement, the RAS was divided into two equal 15-item halves (“RAS Half 1” = items 1-15; “RAS Half 2” = items 16-30) and treated as two individual indicators. Thus, the three indicators representing the construct of assertiveness included RAS Half 1, RAS Half 2, and AGGR facet 1 (assertiveness). The three indicators representing the construct of aggression included AGGR facet 2 (physical/instrumental aggression), AQ PA, and AQ VA. The remaining two AQ subscales were excluded from the current analyses because the emphasis was on manifestations of aggression, such as physical and verbal, rather than the antecedent psychological or emotional states represented by anger and hostility.
Models

Analyses were computed using the AMOS 6.0 program (Arbuckle, 1999). To test the hypothesis that a model containing two separate constructs of aggressiveness and assertiveness would fit data reflecting self-reports of aggression and assertiveness better than a model in which the two constructs were combined, three non-nested confirmatory factor analyses were examined to compare model fit of the proposed and alternative models (Anderson & Gerbing, 1988; Hayduk, 1987).

Model 1 was created to examine model fit wherein the two constructs of aggression and assertiveness are represented as a mixed construct with all six indicators loading on the common construct. Model 1 is most similar to the AGGR parent scale because AGGR has been previously shown to include items reflecting both aggressiveness and assertiveness.

Model 2 was created to examine model fit wherein the two constructs of aggression and assertiveness are represented as separate constructs with three conceptually relevant indicators loading on each of these latent variables. For the construct of assertiveness, the criterion was a latent construct with three indicators, AGGR Facet 1, RAS Half 1, and RAS Half 2. For aggression, the criterion was a latent construct with three indicators, AGGR Facet 2, AQ PA, and AQ VA.

Hayduk (1987) demonstrated that inclusion of an additional model may further assist in model comparison. Because it was hypothesized that Model 2 would be a better fit for the data than Model 1, the data were also fit to a final structural model (Model 3) to
ensure that any improvement of fit was the result of a deliberate attempt to separate the constructs of aggression and assertiveness and not simply an artifact of the process of adding an additional construct to the model. Therefore, Model 3 was created to examine model fit wherein the two constructs of aggression and assertiveness were represented as two randomly mixed constructs, each with three indicators reflecting a combination of aggressiveness and assertiveness variables. The first mixed construct (Mixed Aggressiveness & Assertiveness 1) included the indicators AGGR Facet 1, AQ PA, and AQ VA, and the second (Mixed Aggressiveness & Assertiveness 2) included the indicators AGGR Facet 2, RAS Half 1, and RAS Half 2.

AMOS 6.0 provides a variety of measures for assessing model fit. The fit indices included within the current analyses were selected due to their appropriateness for comparison of non-nested models. Whereas nested models are created such that a simpler model may be obtained from a more complex model simply by eliminating one or more parameters from the more complex model, non-nested models do not follow this structure and analyses instead depend on a variety of fit indices. Model fit was determined by examining the chi-square statistic, Bentler’s Comparative Fit Index (CFI; Bentler, 1990), the root mean square error of approximation (RMSEA; Steiger & Lind, 1980), the Akaike Information Criterion (AIC; Akaike, 1973) and the Bayesian Information Criterion (BIC).

The chi-square index is considered a measure of exact model fit. Because the chi-square statistic tests whether there is a significant difference between the model and the
data, this value should, ideally, be non-significant. Additionally, models with a lower chi-square represent a better fit to the data. However, chi square is very sensitive to sample size such that, in larger samples, it may be sensitive to even trivial discrepancies between the data and the expected data (Joreskog and Sorbom 1993; Rayko 1998).

CFI provides a baseline comparison based on the ratio of the model chi-square to that of a null model which assumes the latent variables in the model are uncorrelated. By convention, values close to 1 indicate a very good fit and those and those greater than 0.9 or close to .95 indicate good fit. Models with CFI below .90 do not show a good fit to the data (Bentler, 1990; Bentler & Bonett, 1980). Importantly, CFI has been found to be generally unaffected by sample size (Bentler, 1990).

The RMSEA is often considered to be an index of badness of fit. RMSEA provides an index of model parsimony and compares a model’s lack of fit to a perfect model. A RMSEA of .08 is indicative of a reasonable error of approximation whereas RMSEA values above .1 suggest a poor fit (Browne & Cudeck, 1993). However, one limitation of RMSEA is that it ignores the complexity of the model.

Both the AIC and BIC are considered absolute fit indexes because they assess how closely an a priori model reproduces the sample data. The AIC accounts for the relationship between model complexity and the number of parameters such that the model with the smallest AIC is preferred. Bentler (1995) suggested that the model with a smaller AIC may fit the data better than a model with a larger AIC value. Because AIC reflects the relative fit of the data to each model, it is of particular value when
determining the preferred model among several available models. Compared to AIC, the BIC favors parsimonious models with fewer parameters. BIC is recommended for larger sample sizes and models with few parameters. Models with lower BIC values are more likely to accurately describe the sample data.
CHAPTER 3

RESULTS

Zero-order correlations generally supported the appropriateness of the indicator variables included within the current study. Table 1 reports the correlation matrix for these data as well as means, standard deviations, and internal consistencies. Correlations between aggressiveness indicators ranged from $r=.44$ (AGGR2 and AQ-VA) to $r=.60$ (AGGR2 and AQ-PA). While these correlations were greater than those between aggressiveness and assertiveness indicators, the correlation between AQ-VA (an indicator of aggressiveness) and RAS (an indicator of assertiveness), yielded a larger than expected value of $r=.43$. As expected, the correlation between the two assertiveness indicators of AGGR1 and RAS ($r=.51$) was greater than all correlations between assertiveness and aggressiveness indicators. Also to be expected, the strongest correlations obtained were within measures, AGGR1 and AGGR2 with the aggression parent scale (.70 and .72), AQ-PA and AQ-VA with the AQ full scale (.77 and .82) and RAS1 and RAS2 with the RAS full scale (.91 and .92). It is likely that item overlap contributed greatly to the strength of these correlations. Of note is the set of correlations for the AGGR scale with all other scales (moderate from .42 to .46) except RAS1 (.37), evidence of the mixed nature of the scale.

All scales and subscales demonstrated acceptable internal consistency with alphas ranging from .58 to .91. Subscales with fewer items (AGGR1 with 7 items and AGGR2
with 8 items) have the lower alphas and full scales (RAS with 30 items and AQ with 29 items) exhibit greater alphas.

Figures 1a, 1b, and 1c depict Models 1, 2, and 3 respectively. Model 2 contains the two separate constructs of aggressiveness and assertiveness, each of which is measured by scales appropriate to each construct. A moderate correlation \( (r = .45) \) was observed between the two constructs of aggressiveness and assertiveness in Model 2. Although this finding suggests that aggressiveness and assertiveness are related constructs, overlap between the two is not great enough to suggest that the constructs are synonymous with one another.

Model 3 contains two separate constructs, each represented as a randomly mixed construct of aggressiveness and assertiveness variables. The strong correlation \( (r = .73) \) between these two constructs is to be expected and reflects the fact that both constructs in this model were similarly assigned random aggressiveness and assertiveness scales, though the scales themselves differed.

The remaining values in the figures are beta weights. These represent the extent to which each indicator loads on a particular construct. Although beta weights offer a relative understanding of the impact of variables within the construct, they cannot be compared across structural models and, thus, offer little with regard to model comparison.
Table 1. *Intercorrelations, Means, Standard Deviations, and Cronbach’s α Reliabilities for Variables (N = 294)*

<table>
<thead>
<tr>
<th></th>
<th>AGGR</th>
<th>AGGR1</th>
<th>AGGR2</th>
<th>AQ</th>
<th>AQ-PA</th>
<th>AQ-VA</th>
<th>RAS</th>
<th>RAS1</th>
<th>Mean</th>
<th>SD</th>
<th>α</th>
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<tr>
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<td>14.60</td>
<td>1.52</td>
<td>1.93</td>
<td>-1.93</td>
<td>12.22</td>
<td>.66</td>
</tr>
<tr>
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<td>.70</td>
<td>.70</td>
<td>.72</td>
<td>.42</td>
<td>.46</td>
<td>.42</td>
<td>.44</td>
<td>.37</td>
<td>.43</td>
<td>.32</td>
<td>.85</td>
</tr>
<tr>
<td>AGGR2</td>
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<td>.11</td>
<td>.10</td>
<td>.72</td>
<td>.60</td>
<td>.44</td>
<td>.18</td>
<td>.47</td>
<td>.26</td>
<td>.24</td>
<td>.81</td>
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<tr>
<td>AQ</td>
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<td>.01</td>
<td>.62</td>
<td>.72</td>
<td>.77</td>
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<tr>
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<td>.60</td>
<td>.82</td>
<td>.32</td>
<td>.43</td>
<td>14.60</td>
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<tr>
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<td>.44</td>
<td>.77</td>
<td>.54</td>
<td>.91</td>
<td>14.60</td>
<td>14.60</td>
<td>1.52</td>
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<td>.74</td>
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<tr>
<td>RAS</td>
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<td>.20</td>
<td>.20</td>
<td>.32</td>
<td>.91</td>
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<td>14.60</td>
<td>1.52</td>
<td>22.02</td>
<td>.74</td>
</tr>
<tr>
<td>RAS1</td>
<td>.37</td>
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<td>.21</td>
<td>.10</td>
<td>.24</td>
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<td>.46</td>
<td>.92</td>
<td>.68</td>
<td>-1.93</td>
<td>12.22</td>
<td>.70</td>
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*Note.* AGGR = PSY-5 Aggressiveness, AGGR1 = PSY-5 Aggressiveness Facet 1 - Assertiveness, AGGR2 = PSY-5 Aggressiveness Facet 2 - Physical/Instrumental Aggression, AQ = Aggression Questionnaire, AQ-PA = Aggression Questionnaire - Physical Aggression subscale, AQ-VA = Aggression Questionnaire - Verbal Aggression subscale, RAS = Rathus Assertiveness Schedule, RAS1 = Rathus Assertiveness Schedule Half1, RAS = Rathus Assertiveness Schedule Half2

Correlations in bold are significant at .01 level.
Fig. 1a. Model 1. Aggressiveness and Assertiveness Indicators Loading on One Dimension

Fig. 1b. Model 2. Aggressiveness and Assertiveness Indicators Loading on Two Separate Dimensions
Table 2. *Goodness-of-Fit Indices for Nested Measurement Models (N = 294)*

<table>
<thead>
<tr>
<th>Model</th>
<th>df</th>
<th>$\chi^2$</th>
<th>CFI</th>
<th>RMSEA</th>
<th>AIC</th>
<th>BIC</th>
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<tr>
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<td>.68</td>
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<td>272.00</td>
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<td>8</td>
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<td>.11</td>
<td>76.79</td>
<td>108.61</td>
</tr>
<tr>
<td>3</td>
<td>8</td>
<td>183.32</td>
<td>.68</td>
<td>.28</td>
<td>227.32</td>
<td>253.14</td>
</tr>
</tbody>
</table>

*Note.* CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation, AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion. Model 1 = AGGR Facet 1, AGGR Facet 2, RAS Half 1, RAS Half 2, AQ PA, and AQ VA loading on 1 dimension (as in Figure 1a), Model 2 = AGGR Facet 1, RAS Half 1, and RAS Half 2 on the assertiveness construct and AGGR Facet 2, AQ PA, and AQ VA on the aggressiveness construct (as in Figure 1b), Model 3 = AGGR Facet 1, AQ PA, and AQ VA, on the first mixed dimension of aggressiveness and assertiveness and AGGR Facet 2, RAS Half 1, and RAS Half 2 on the second (as in Figure 1c).
Results of the analyses of fit indices are presented in Table 2. Consistent with the hypothesis, the majority of the goodness of fit indices supported the utility of Model 2 in which aggressiveness and assertiveness were represented as separate constructs. The chi square statistic was significant (p<.001) for each of the three models. Although chi square should, ideally, be non-significant, chi square is widely recognized to be very sensitive to sample size. Because model chi-square is so conservative, (prone to Type II error), the significance of the chi square for each model may be discounted if other meaningful differences in fit indices are observed. Models with a lower chi-square statistic represent a closer fit to the data. The chi-square for Model 2 (χ² = 38.79) was lower than the chi-square for Model 1 (χ² = 193.45).

The models were also compared by CFI, a fit index that is relatively unaffected by sample size. Models with CFI values greater than 0.9 or close to .95 indicate good fit and those with CFI values below .90 do not show a good fit to the data. Model 2 demonstrated a good fit to the data (CFI = .95) whereas Model 1 lacked good fit (CFI = .68).

RMSEA compares a model’s lack of fit to a perfect model. A RMSEA of .08 is indicative of a reasonable error of approximation whereas RMSEA values above .1 suggest a poor fit. The values for both Models 1 (RMSEA = .26) and Model 2 (RMSEA = .11) suggested poor fit, however the value for Model 2 was only slightly beyond the acceptable range for reasonable fit. As noted earlier, one limitation of RMSEA is that it
ignores the complexity of the model. Thus, AIC and BIC should be compared to determine the absolute fit of the models.

AIC takes into account model complexity such that the model with the smallest AIC is preferred. The AIC for Model 2 (AIC = 76.79) was lower than that of Model 1 (AIC = 229.44). BIC is recommended for larger sample sizes and models with few parameters. A model with a lower BIC value is more likely to accurately fit the sample data. The value for Model 2 (BIC = 108.61) was lower than the BIC of Model 1 (BIC = 272.0). Taken together, the fit indices overwhelmingly supported the fit of Model 2 over that of Model 1.

To ensure that the superior fit of Model 2 over Model 1 was not an artifact of the process of adding an additional construct to the model, the fit of Model 2 was next compared to that of Model 3. Model 2 ($\chi^2 = 38.79; \text{CFI} = .95; \text{RMSEA} = .11; \text{AIC} = 76.79; \text{BIC} = 108.61$) demonstrated superior fit over Model 3 ($\chi^2 = 183.82; \text{CFI} = .68; \text{RMSEA} = .28; \text{AIC} = 227.32; \text{BIC} = 253.14$). Overall, the fit of Model 3 was very similar to that of Model 1.
CHAPTER 4

DISCUSSION

The results of the study revealed that separation of AGGR items, into their corresponding constructs of aggressiveness and assertiveness, improved overall model fit of data reflecting self-reported aggressive and assertive behaviors. These results challenge the structure of the PSY-5 AGGR parent scale, in which the constructs of aggressiveness and assertiveness coexist within a common scale, by providing greater support for a model that utilizes separate constructs of aggressiveness and assertiveness. While the statistical procedures differ greatly, a conceptual comparison may be made between the current study’s attempt to more clearly assess aggression and the creation of the MMPI-2 RC scales (Tellegen, Ben-Porath, McNulty, Arbisi, Graham, & Kraemmer, 2003) in order to more clearly assess the core constructs of the MMPI-2 Clinical Scales. Rather than extracting items from Clinical Scales that were saturated with the construct of demoralization, the current study extracted items from the AGGR scale that are confounded by the construct of assertiveness. By separating the items into their corresponding constructs, heterogeneity within each of these constructs was reduced.

The findings of the current study are consistent with the work of Arnau and colleagues (2005) who demonstrated, using exploratory factor analysis, that AGGR assesses both aggressive and assertive behavior. Although EFA is necessary to explore
the underlying factor structure of AGGR, it is the implementation of CFA that permits actual testing of theoretically grounded hypotheses. The current study was guided by theory grounded in the research of individuals, including Storr (1970) and Siann (1985), who explored the expression of aggressive behavior in a manner that addresses both the influence of one’s situational context and the potential existence of a positive facets of aggression. While exploration of the internal structure of the AGGR scale provided the first evidence for the coexistence of assertiveness within the scale (Arnau et al., 2004), these analyses relied on a Record Review Form, composed of data extracted from patient clinical records and charts, whereas the current study employed measures specifically created for the assessment of assertiveness and aggression. Because the PSY-5 scales were developed to assess personality traits relevant to both normal and abnormal personality functioning, the relative dearth of research on AGGR in normal populations was an important determinant in choosing a college sample for the current study. Of equal importance, the use of a non-clinical sample permitted analyses of a wider range of reported aggression and assertiveness than would be available within a more homogenous clinical sample. Thus, the current study fills a void in the PSY-5 literature by following Arnau’s (2007) recommendation that future research on the PSY-5 Scales examine external correlates and different populations.
**Implications for AGGR Scale**

Results support the position that attempts to uniquely assess aggression using the AGGR parent scale may be problematic given the shared presence of assertiveness within the scale. The PSY-5 scales were developed to assess personality traits relevant to both normal and abnormal personality functioning. As such, one purpose for creating the PSY-5 scales was to assist in the diagnosis of personality disorders. However, the utility of the scale for this purpose was not supported by Wygant and colleagues (2006) as they observed that AGGR was unable to add significantly to the incremental prediction of the Multiaxial Diagnostic Inventory Antisocial Personality Scale beyond clinical scales 4 (Psychopathic Deviate) and 9 (Hypomania), despite the ability of the Antisocial Practices (ASP) and Disconstraint scale (DISC) to do so. In light of the results of the current study, it is possible that the ability of AGGR to add incrementally may have been diminished as a result of heterogeneity introduced by items assessing assertiveness.

Just as the inclusion of items assessing assertiveness may hamper the ability of the AGGR scale to assess aggression, the presence of these items may also explain why AGGR has been correlated in the past with variables that are not directly related to the construct definition put forth by Harkness and McNulty. Of perhaps greatest importance, the findings of this study may help to clarify findings that AGGR may measure protective factors within individuals as indicated by positive correlations with scales measuring a lack of psychological discomfort. Examples of this relationship include the moderate positive relationship between the AGGR scale and scale F (Happy-go-lucky vs. Sober) on
Cattell’s (1970) 16PF and a strong positive correlation between AGGR and the Positive Emotionality scale on the MPQ noted by Harkness and colleagues (1995). AGGR also demonstrated strong negative correlations with MMPI-2 Scale 2 (Depression) and other MMPI-2 scales measuring psychological discomfort (Harkness et al., 1995). It may be more accurate to view these findings as reflecting a positive impact of assertive behavior on psychological well-being, rather than to attribute them to a protective factor of aggression per se. A strong case could also be made that the assertiveness component of AGGR largely accounts for positive correlations between AGGR and social potency and extraversion (Trull, Useda, Costa, & McCrae, 1995). This explanation makes sense conceptually because it is probable that individuals who are more socially potent and extraverted than their peers are also likely to assert themselves more than others. Thus, the emergence of a preferred model fit for the assessment of aggressiveness and assertiveness as separate constructs may help to elucidate a number of otherwise perplexing past findings with the AGGR scale.

The MMPI-2 is used in a wide variety of settings including mental health inpatient and outpatient, substance abuse treatment, criminal court proceedings, evaluations for personal injury and disability, as well as a host of non-clinical settings such as it’s routine use in the selection of law enforcement officers. Therefore, the implications of the current results for use of the AGGR scale are abundant and vary by setting. In treatment settings, a client’s ability to be assertive may be seen as a strength, and could potentially indicate that the client will be an active participant in therapy
sessions. Conversely, an aggressive client may be more likely to be combative and resistant to change. The ability to distinguish between each of these clients may inform one’s therapeutic approach with the client as well as impact the likelihood of their success in treatment. Because child custody hearings often center around a parent or guardian’s ability to provide for the best care of a child, the ability to infer the disposition of potential caretakers is vital. For example, evidence in support of a parent’s ability to behave assertively may strengthen the case that they are a good match for a child in need of a structured environment. However, if that same parent is mistakenly identified as being particularly aggressive, or even antisocial, it may be less likely that custody will be granted to this parent. In both the setting of the therapy client and that of the parent seeking custody of a child, the MMPI-2 is but one of several methods for assessing the individual, and AGGR is one of many scales that may be examined, yet the scale should be as accurate as possible given the potential consequences of it’s misinterpretation in either setting. The MMPI-2 is commonly utilized in the selection of individuals for positions in law enforcement and the ability to accurately distinguish between assertiveness and aggressiveness is of clear importance. An assertive police officer may depend on this trait on a daily basis, whereas a particularly aggressive individual endowed with a badge and gun may be a significant liability. In prison settings, an accurate determination of the appropriate level of security for each prisoner is essential. An inaccurate assessment of the potential for aggressive behavior may result in a low-risk prisoner being unnecessarily housed in a high security facility, often of limited capacity.
Implications for Aggressiveness Construct

The current study was largely driven by theory grounded in the research of individuals such as Storr (1970) and Siann (1985) who sought not to confine aggression to a narrow range of behavioral expression, but to instead explore the blurry boundaries of the construct by addressing such factors as situational context and the existence of a positive facet of aggression. Therefore, the implications for the results of this study are not limited to the AGGR scale, but they also inform our understanding of the construct of aggressiveness itself. The results of the current study support the notion that while aggressiveness and assertiveness are related constructs, they are far from completely overlapping. Whereas the similarity of the constructs would appear to support the view that aggressiveness may have both positive and negative qualities, the differences between the constructs are less clear. For example, assertive behavior may merely be the expression of a form of socially condoned aggression. Taken together, the findings suggest that attempts to assess an individual’s aggressiveness via self report would likely benefit from a consideration of the potential impact of assertiveness on scale elevations. In the case of the AGGR scale, items comprising the Assertiveness facet scale appear to be recognizable as such given the face validity of these items. Other self-report measures of aggression may be similarly examined for face validity as an initial screener for items that may inadvertently assess assertiveness rather than aggressiveness per se. Depending on the particular phrasing of items that comprise a measure of aggression, test administrators may routinely neglect to control for the influence of assertiveness thereby
increasing the probability of falsely identifying a person as aggressive. What may have been an individual’s strength may be tragically mistaken to be a fault.

Limitations

Several limitations must be considered when interpreting the results of the current study. In order to achieve adequate sample size for the SEM analyses, genders were combined prior to all analyses. It is possible that men and women may differ with regard to their endorsement of assertive and aggressive items. Future studies may be able to identify potential gender differences through the use of larger samples that contain a sufficient number of both men and women to allow for separate analyses by gender. However, when men and women in this study were separated, and correlations were calculated between all indicators, a very similar pattern of correlations emerged for both men and women.

While the use of a non-clinical sample is a strength of the current study, the lack of a clinical or forensic sample, for comparison, is a weakness. Although the use of a normal sample helps to fill a void in the PSY-5 AGGR literature, it is unclear whether similar CFA results would emerge in the presence of the more extreme scores typical of clinical and forensic populations.
Future Directions

When Arnau and colleagues (2004) set out to identify the PSY-5 Aggressiveness facet scales, their analyses relied on the relationships between the PSY-5 Scales and a record review form composed of data extracted from patient clinical records and charts. The current study adds to our understanding of the AGGR scale by utilizing measures specifically created for the assessment of assertiveness and aggression in order to support the hypothesis that the construct of aggressiveness is better assessed when the expression of assertiveness is controlled for. This study also employed a normal population wherein a wider array of responses were available to permit a more appropriate CFA of the hypothesized model. Future studies are needed to replicate the results of the current study in other populations. Additionally, studies may employ alternative external measures of assertiveness and aggressiveness. Along with self-report measures, like the AQ and RAS, researchers should consider the addition of familiar (e.g., family or peers) and professional (e.g., therapist) ratings of aggressiveness and assertiveness. Studies of this nature would help to minimize potential under-reporting of aggressive behavior and may provide additional support for the separate assessment of the constructs of aggressiveness and assertiveness.

The results of the current study lend support to two potential remedies for the challenges posed by the presence of both aggressiveness and assertiveness within the AGGR scale: greater use of the PSY-5 facet scales or the creation of new scales that assess each construct with greater independence. In either situation, a greater awareness
of the relationship between the constructs of aggressiveness and assertiveness facilitates the more accurate interpretation of aggressiveness.
REFERENCES


APPENDIX A

AGGRESSION QUESTIONNAIRE
INSTRUCTIONS: Using the 5 point scale shown below, indicate how uncharacteristic or characteristic each of the following statements is in describing you. Rate each of the items by filling in the bubbles on the answer sheet for:

1 = extremely uncharacteristic of me
2 = somewhat uncharacteristic of me
3 = neither uncharacteristic nor characteristic of me
4 = somewhat characteristic of me
5 = extremely characteristic of me

1. Some of my friends think I am a hothead
2. If I have to resort to violence to protect my rights, I will.
3. When people are especially nice to me, I wonder what they want.
4. I tell my friends openly when I disagree with them.
5. I have become so mad that I have broken things.
6. I can’t help getting into arguments when people disagree with me.
7. I wonder why sometimes I feel so bitter about things.
8. Once in a while, I can’t control the urge to strike another person.
9. I am an even-tempered person.
10. I am suspicious of overly friendly strangers.
11. I have threatened people I know.
12. I flare up quickly but get over it quickly.
13. Given enough provocation, I may hit another person.
14. When people annoy me, I may tell them what I think of them.
15. I am sometimes eaten up with jealousy.
16. I can think of no good reason for ever hitting a person.
17. At times I feel I have gotten a raw deal out of life.
18. I have trouble controlling my temper.
19. When frustrated, I let my irritation show.
20. I sometimes feel that people are laughing at me behind my back.
21. I often find myself disagreeing with people.
22. If somebody hits me, I hit back.
23. I sometimes feel like a powder keg ready to explode.
24. Other people always seem to get the breaks.
25. There are people who pushed me so far that we came to blows.
26. I know that “friends” talk about me behind my back.
27. My friends say that I’m somewhat argumentative.
28. Sometimes I fly off the handle for no good reason.
29. I get into fights a little more than the average person.
APPENDIX B

RATHUS ASSERTIVENESS SCHEDULE
RAS

Indicate how characteristic or descriptive each of the following statements is of you by using the code given below.

+3 = Very characteristic of me, extremely descriptive
+2 = Rather characteristic of me, quite descriptive
+1 = Somewhat characteristic of me, slightly descriptive
-1 = Somewhat uncharacteristic of me, slightly nondescriptive
-2 = Rather uncharacteristic of me, quite nondescriptive
-3 = Very uncharacteristic of me, extremely nondescriptive

1. Most people seem to be more aggressive and assertive than I am. *
2. I have hesitated to make or accept dates because of “shyness.” *
3. When the food served at a restaurant is not done to my satisfaction, I complain about it to the waiter or waitess.
4. I am careful to avoid hurting other people’s feelings, even when I feel that I have been injured. *
5. If a salesman has gone to considerable trouble to show me merchandise that is not quite suitable, I have a difficult time saying “No.” *
6. When I am asked to do something, I insist upon knowing why.
7. There are times when I look for a good, vigorous argument.
8. I strive to get ahead as well as most people in my position.
9. To be honest, people often take advantage of me. *
10. I enjoy starting conversations with new acquaintances and strangers.
11. I often don’t know what to say to attractive persons of the opposite sex. *
12. I will hesitate to make phone calls to business establishments and institutions. *
13. I would rather apply for a job or for admission to a college by writing letters than by going through with personal interviews. *
14. I find it embarrassing to return merchandise. *
15. If a close and respected relative were annoying me, I would smother my feelings rather than express my annoyance. *
16. I have avoided asking questions for fear of sounding stupid. *
17. During an argument I am sometimes afraid that I will get so upset that I will shake all over. *
18. If a famed and respected lecturer makes a statement which I think is incorrect, I will have the audience hear my point of view as well.
19. I avoid arguing over prices with clerks and salesmen. *
20. When I have done something important or worthwhile, I manage to let others know about it.
21. I am open and frank about my feelings.
22. If someone has been spreading false and bad stories about me, I see him/her as soon as possible to “have a talk” about it.
23. I often have a hard time saying “No.” *
24. I tend to bottle up my emotions rather than make a scene. *
25. I complain about poor service in a restaurant and elsewhere.
26. When I am given a compliment, I sometimes just don’t know what to say. *
27. If a couple near me in a theater or at a lecture were conversing rather loudly, I would ask them to be quiet or to take their conversation elsewhere.
28. Anyone attempting to push ahead of me in a line is in for a good battle.
29. I am quick to express an opinion.
30. There are times when I just can’t say anything. *

* Reverse coded