Suppression and Repression in Discrepant Self-Other Ratings: Relations with Thought Control and Cardiovascular Reactivity

Karina W. Davidson
Dalhousie University

ABSTRACT Individual differences in self-other disagreement may tap phenomena that have been notoriously difficult to assess. For example, subjects who believe they possess a trait while their acquaintances disagree may be exhibiting suppression. Further, subjects who deny a trait while acquaintances believe it is present may be displaying repression. In the first study, both subjects and their closest friends rated the subject's hostility level. Suppressors and repressors were expected to exhibit enhanced thought control, and indeed these individuals were more able not to think about white bears when instructed to do so than individuals for whom there was high hostility agreement. However, this was also true for those with low hostility agreement. Only suppressors demonstrated blood-pressure hyperreactivity to a hostility-provoking task as expected; this finding was replicated in a second study employing a different, multi-item measure of hostility, as well as a marker of low Agreeableness.

There are many reasons why we might disagree with the way others characterize us. According to Kenny's (1991) model, we might not be known by them sufficiently well (acquaintance), we might have seen

This research was supported by grants from the Heart and Stroke Foundation of Nova Scotia and the Social Sciences and Humanities Research Council of Canada. I would like to thank Kim Calderwood, Melissa Cutler, and Tracy Mason for their assistance in conducting this research, and William F. Chaplin and three anonymous reviewers for their helpful comments on an earlier draft of this article. Requests for reprints should be sent to Karina Davidson, Department of Psychology, Dalhousie University, Halifax, Nova Scotia, Canada B3H 3J5.

ourselves in situations that differ from the ones they have observed (overlap), we might not display the trait behavior consistently (consistency), we may mean something different by our trait characterization than they do by theirs (shared meaning), or, finally, we might not have discussed with them our view of ourselves (communication). Indeed, some of these variables clearly affect self-other ratings (Funder, 1987; Funder & Colvin, 1988; Paunonen, 1989). Yet even when someone knows us very well, has seen us in numerous situations, has observed us acting consistently, defines traits similarly to us, and knows what we believe about ourselves, there are still circumstances or traits for which we fail to share others' assessments of ourselves.

What might cause such a discrepancy? This article discusses two possibilities—suppression and repression. Following a brief review of the conceptualization of and the measurement difficulties inherent in these two constructs, the potential usefulness of self-other disagreements for assessing these tendencies will be presented. Next, traits for which self-other disagreement should predict substantive outcomes will be introduced. Finally, two hypotheses about these defensive tendencies as measured by self-other hostility disagreement will be presented. First, those for whom there is disagreement about hostility should be better able to actively suppress thoughts. Second, only suppressors should show increased blood-pressure reactivity to an interpersonally stressful task.

The Meaning and Measurement of Suppression and Repression

Methods for identifying and distinguishing repression and suppression have both plagued and intrigued researchers and theorists for a long time (Erdelyi & Goldberg, 1979; Holmes, 1974; Horowitz, 1975; Lazarus, 1983; McGranahan, 1940). Although there is still much controversy over the distinction between these two constructs (Singer, 1990), Vaillant (1990, 1992) has suggested operational definitions that are becoming increasingly accepted. Repression, according to Vaillant, involves the “unconsciously motivated forgetting or unawareness of external events or of internal impulses, feelings, thoughts, or wishes. Although the repressed is not recognized consciously, its effects remain” (Vaillant, 1992, p. 276). In contrast, suppression is the “conscious or semi-conscious decision to postpone (but not to avoid) paying attention to a conscious impulse, feeling, or conflict” (p. 277). Thus,
two critical distinctions exist between these two definitions: Repres-
sors are not aware of the feeling or impulse, whereas suppressors are; 
repressors should exhibit effects of the feeling or impulse, whereas 
suppressors should not.

How can one measure such phenomena? Many (predominantly un-
successful) attempts have been made, both through observational and 
self-report techniques (Cramer, 1991; Holmes, 1990). Relying exclu-
sively on direct self-report measures provides at best a weak basis for 
making a distinction between those who do not possess the trait and 
repressors who cannot tell us they possess it. Similarly, exclusive re-
liance upon observation or other-report measures cannot conclusively 
distinguish between those who accurately do not exhibit a trait and 
suppressors who choose not to exhibit it. Rather, as noted by Vaill-
lant (1992), it is the inconsistency between informed biography (other-
report) and autobiography (self-report) that alerts us to the possible 
existence of suppression and repression. To obtain reliable observer 
ratings of defensive tendencies, Vaillant (1977) trained his coders to 
examine self-report and interview data for marked discrepancies. That 
is, defenses were hypothesized to exist when autobiographical data ne-
glected information reported from significant others (repression), or 
when autobiographical data focused predominantly upon information 
neglected in biographical reports (suppression). Indeed, measured in 
this way, both of these, as well as other defensive tendencies, have been 
found to be remarkably stable (G. E. Vaillant & C. O. Vaillant, 1990).

Weinberger (1990) has suggested that three conditions must be pres-
ent to conclude that defensive processes exist. First, sources of infor-
mation about internal traits or feelings must disagree with each other. 
In this way, there is discrepant information that either must be recon-
ciled or defended against. For example, believing oneself to be calm 
when one has sweaty palms leads either to the revision of one's opinion 
about one's calmness, or to a (motivated) unawareness of any discom-
fort. Clearly, if no disconfirming evidence exists—as when one believes 
one self to be anxious, and has sweaty palms—then there is no reason to 
defend against any information. Second, the disconfirming information 
must be potentially available to the individual. Specific memories and 
interpretations of behaviors are arguably not easily accessible (Erdelyi, 
1990; Nisbett & Ross, 1980), but we have many reasons to suspect that 
negative emotions are readily available to the subject when others can 
infer them (Buck, 1985, 1988). For example, young children can accu-
rately identify internal distressing emotions, but often become less
accurate as socialization progresses (Malatesta & Haviland, 1982). Further, inaccuracy varies by the appropriateness or social sanctions placed on certain emotions; emotions considered inappropriate for the child to experience (such as anger in girls) show increased inaccuracy relative to emotions such as happiness (Brody, 1985). Thus, we have developmental evidence that the expression or awareness of affect is internally available, and is increasingly lost as inhibitory controls are learned.

Third, a trait or emotion must be in some way aversive, so that it would warrant motivated forgetting or conscious inhibition. Of course, not all aversive information is defended against—only that which contradicts consciously held beliefs (Weinberger, 1990). Thus, repressors may be motivated to maintain self-perceptions of little subjective experience of negative traits or emotions if their self-concept does not include these traits. Similarly, suppressors may be motivated to inhibit the expression of a trait or emotion only if they believe it to reflect negatively upon themselves. Thus, traits or emotions with negative connotations may potentially foster defensive tendencies.

Perhaps self-other trait disagreements can aid in identifying suppressive and repressive individuals. Although self-other personality agreements are at times substantial (Funder & Colvin, 1988; Watson, 1989), there may still be subsets of individuals within a sample for whom disagreements exist. Two subsets of individuals might be expected to demonstrate low self-other trait agreement, albeit for differing defensive tendencies; where the discrepancy is caused by low self-rating and high other rating, repression may be at work, and where the discrepancy is a result of high self-rating and low other rating, suppression may be occurring. If suppression and repression can cause self-other disagreements, then specific hypotheses regarding these constructs should be testable when they are measured by self-other discrepancies. Two hypotheses about these defensive tendencies will be presented, and then data from two studies will be presented that support these operationalizations.

It is likely that some specific traits will be more appropriate than others for tapping defensive tendencies. As mentioned above, negative emotions exhibit the three conditions necessary to allow defensiveness: Negative emotions can demonstrate discrepancies between subjective experience and physiological response or behavioral manifestation; they are considered readily accessible to individuals; and, finally, they are potentially threatening to the individual’s self-concept. Although a number of researchers have focused on anxiety (Davis, 1990; Weinberger, 1990), for a number of reasons I will examine discrepancies
in hostility report. First, hostility suppression and repression have been the subject of conjecture for some time (Siegel, 1992). Second, specific hypotheses about the suppression of hostility have been forwarded (Houston, 1992).

The role that hostility may play in the development of health problems such as coronary heart disease (CHD) has been debated for some time. Unfortunately, empirical results have not yet resolved this issue. For example, high scores on the Cook and Medley Hostility scale (HO; Cook & Medley, 1954) have been found to be both related and unrelated to incidences of CHD (Leon, Finn, Murray, & Bailey, 1988; Shekelle, Gale, Ostfeld, & Paul, 1983), associated and unassociated with blood-pressure reactivity (Hardy & Smith, 1988; Smith & Houston, 1987), and predictive and nonpredictive of total mortality (Barefoot, Dahlstrom, & Williams, 1983; Hearn, Murray, & Luepker, 1989). What might account for these contradictions?

Perhaps more than the simple self-report of hostility is required to fully explain the link between hostility and health. Indeed, it has been suggested that those who are most hostile may be likely to distort their self-reported hostility level (Barefoot, 1992). Investigators have proposed that suppressing or not expressing experienced hostility may be deleterious to one’s health (Davies, 1971; Greer & Morris, 1975; Harburg et al., 1973; Houston, 1992; McGinn, Harburg, Julius, & McLeod, 1964; Smith, 1992). Thus, a person who experiences but does not express hostility may be at risk for future health problems such as CHD. Briefly, suppressed hostility has been thought to cause hypertension and CHD (Harburg et al., 1973; Siegel, 1992) by the following process. First, an individual avoids or controls thoughts and feelings of hostility during a hostility-provoking situation, but incurs short- and long-term costs for this effort. In the short term, individuals who inhibit thoughts and feelings have been shown to display exaggerated autonomic functioning (Pennebaker, Hughes, & O’Heeron, 1987) and cardiovascular functioning (Harburg et al., 1973). Short-term exaggerated cardiovascular reactivity, in turn, has been associated in some prospective studies with long-term vulnerabilities to hypertension and other related coronary artery disease outcomes (Julius, Weder, & Hinderliter, 1986). However, previous attempts to measure the suppression of hostility have been fraught with difficulties, and have often had to rely upon self-reported measures of such tendencies (Cottington, Matthews, Talbott, & Kuller, 1986; MacDougall, Dembroski, Dimsdale, & Hackett, 1985; Siegel, 1985). Some studies have confirmed
the hostility suppression hypothesis employing self-report data (Mills, Schneider, & Dimsdale, 1989), whereas others have not (Smith & Houston, 1987). Consequently, self-other hostility disagreement may provide an alternative to self-report alone as a measure of suppressed hostility, and may be invaluable in testing this substantive hypothesis. Hostility suppressors are hypothesized to have increased cardiovascular reactivity during the hostility-provoking task when compared to others for whom there was self-other hostility agreement; both studies reported below examined the interactive effects of self-rated and other-rated hostility on cardiovascular reactivity during a hostility-provoking laboratory task, the Structured Interview (Chesney, Eagleston, & Rosenman, 1980). Although repressors are also thought to be at increased CHD risk, the term is often used interchangeably with suppressors to refer to any individual who does not express hostility (Siegel, 1992). However, by following Vaillant’s (1990) definitions, I have suggested that only suppressors do not exhibit hostility, whereas repressors exhibit it, but cannot report experiencing it. Thus, if the hostility suppression hypothesis is correct, only suppressors should demonstrate hyperreactivity to a hostility-provoking task.

Although suppression and repression may manifest themselves very differently, they both may require a superior ability to selectively avoid potentially threatening information. Repression may first involve motivated nonlearning, then motivated nonrehearsal, and finally motivated nonretrieval (Shevrin, 1990). In fact, both Shevrin (1990) and Bower (1990) believe that retrieval failures, or the last stage in this process, constitute the largest component of “motivated forgetting,” or repression. Suppression, in contrast, also involves the active avoidance of threatening material, but when retrieval of this information is necessary or required, the information is available (Vaillant, 1992). Thus, in both cases active avoidance of some material is thought to exist, and differences in conscious control between these two constructs occur predominantly during the retrieval process. To test whether suppressors and repressors are more efficient than others at avoiding thoughts when they are instructed that it is desirable to do so, subjects underwent the White Bear paradigm proposed by Wegner, Schneider, Carter, and White (1987), in which they were instructed to talk and think about anything at all except white bears. Although thoughts of white bears are in general neutral rather than threatening, this paradigm has been employed to assess individual differences in general suppression ability, and has been shown to predict successful suppression of more threaten-
ing material (Wegner, Schneider, Knutson, & McMahon, 1991). Low counts of white bear thoughts then constituted a measure of thought suppression ability, and subjects for whom there was hostility disagreement (suppressors and repressors) were expected to do better on this task than self-other agreeing subjects.

**Study 1**

**METHOD**

**Subjects**

A total of 101 undergraduates (38 males and 63 females) were recruited for participation in the study. Subjects were informed that they would complete personality questionnaires, engage in a cognitive task, and be asked a number of questions about their previous work, superficial habits, and school history. Finally, each subject was asked for the name, the phone number, and permission to speak to their closest, same-sexed, nonromantic friend.

**Procedure**

Subjects were required to have refrained from drinking caffeine, smoking, or exercising for 3 hours prior to testing. Upon reporting to the laboratory, subjects rated themselves for hostility on a 5-point scale from not at all hostile (1) to very hostile (5), and then completed the Edwards Social Desirability Scale (ESDS; Edwards, 1957), which consists of 39 items and employs a true-false format. These items are derived from the Minnesota Multiphasic Personality Inventory (MMPI) to assess a social desirability response set, defined as "the tendency of subjects to attribute to themselves, in self-description, personality statements with socially desirable scale values and to reject those socially undesirable scale values" (p. vi).

Using the White Bear paradigm (Wegner et al., 1987), each subject then verbalized into a tape recorder everything that went through their mind while alone for a warm-up period of 5 minutes. A researcher next reentered the room and instructed each subject to repeat this exercise while attempting not to think about white bears. However, in the event that they should think of a white bear, they were instructed to tap the microphone of the tape recorder with the pencil provided. The subject was once more left alone in the room for 5 minutes to complete this task. Audiotapes were then coded for number of taps during the second 5-minute period.

Finally, subjects entered a third room, were seated in a comfortable chair, and had the blood-pressure recording apparatus attached to their nondominant arms. Because initial blood-pressure readings may be unstable and unpredic-
tive of later readings (Carey et al., 1976), subjects had three initial (unused) blood-pressure measures taken to acclimatize subjects to the blood-pressure cuff. Thereafter subjects rested for 10 to 15 minutes. At the end of this adaptation period, a fourth blood-pressure reading was taken and this served as the resting (baseline) measure. Third and fourth readings were highly correlated \((r = .91)\), suggesting that acclimatization had occurred. Systolic blood pressure (SBP) was recorded with an automated blood-pressure monitor (Spacelabs Model 90202).

A 12-minute Structured Interview was administered that evokes a stressful response in the subjects (Chesney et al., 1980). Subjects were informed that they would be asked a number of questions about their previous work and school history. As the interviewer asks questions about competitiveness and work relationships, the pace is quickened, until the subject is barely given enough time to respond to one question before the next is posed. Additionally, at a certain point in the interview, the interviewer increasingly appears uninterested in the subject. The interview is thus designed to behaviorally assess the subject's response to a number of standardized hostile interactions. Blood-pressure measures were taken at the end of the interview (arousal phase) and 6 minutes after its completion, to ensure that subjects had returned to baseline levels of SBP. After the final resting period of 6 minutes, subjects were thanked for their participation and presented with the purpose of the study.

Closest friends were then telephoned, informed about the reason for the call and the prior consent of the subject, and assured of confidentiality. They were then asked their age and gender, and then to rate the subject on a 5-point scale from not at all (1) to very much (5) for (a) hostility; and (b) level of closeness felt toward the subject.

**RESULTS**

**Descriptive Data**

Subjects were on average 22 years old \((SD = 3\) years), as were their closest friends \((SD = 4\) years). Subjects and friends had known each other on average for 5 years \((SD = 2\) years), and subjects rated friends to be very close \((M = 4.6\) on a 5-point scale, \(SD = .6\)). Similarly, friends rated subjects also to be very close \((M = 4.5, \ SD = .6\)). The friend rating of hostility \((M = 2.3, \ SD = 1.2\) was independent of the self-rating of hostility \((M = 2.1, \ SD = 1.1, \ r = .06\), and no significant difference was found between the mean level of these ratings. Further, the means and standard deviations of males and females separately were similar, and no significant sex differences were noted in any of the analyses. Thus, all analyses combined males and females.
Thought Control

Self-other disagreeing subjects were expected to demonstrate superior thought control when compared to subjects with self-other hostility agreement; hence, an interaction was predicted between self- and other hostility ratings, of a specific form. To test for the effect on thought control of the predicted interaction between the self- and friend rating of hostility, a hierarchical multiple regression was conducted in which the number of unwanted white bear thoughts was employed as the dependent measure. Both (centered) self- and friend ratings were entered simultaneously with the cross-product of the two ratings. Neither the self-rating of hostility, $F(1, 97) = 1.9, b = .27$, nor the friend rating, $F(1, 97) = .5, b = .14$, was significantly related to white bear thoughts. The cross product between these variables added significantly (4% of variance) to the prediction of white bear thoughts when subjects were instructed to purposely avoid such thoughts, $F(1, 97) = 4.1, b = .34$.

Those who are able to inhibit either awareness or expression of hostility were expected to have fewer white bear thoughts than those individuals for whom there was agreement about their hostility level. To ensure that the significant interaction was of the form hypothesized, the interaction is displayed by three simple regression lines; one standard deviation above, one standard deviation below, and one at the mean for friends’ ratings (see Figure 1). Although the regression lines are in the predicted direction (white bear thoughts decrease as disagreements increase), clearly the most striking finding is that as both friend and self-ratings of hostility increase, so too do unwanted white bear thoughts. These data suggest that subjects with self-friend disagreements were better able to avoid thoughts when instructed to do so, but low hostility agreement subjects were also able to avoid these thoughts.

Hostility Suppression and Blood-Pressure Hyperreactivity

Next, suppressors were expected to exhibit increased blood-pressure reactivity when placed in a hostility-provoking situation. A hierarchical regression was performed, and this time the arousal phase SBP served as the dependent measure. First, the centered baseline SBP was entered as a covariate, as blood-pressure reactivity was of interest here, $F(1, 98) = 169.9$, and this covariate accounted for 63% of the variance. Again, centered self- and friend hostility ratings were entered simultaneously with their cross product on the second step. Self-rating
of hostility was significant, $F(1, 95) = 3.8, b = 1.9$, although the friend rating was not, $F(1, 95) = 1.7, b = -0.97$. The cross product of the two ratings was significant, accounting for 3% of the variance in blood-pressure reactivity, $F(1, 95) = 7.2, b = -2.2$. Finally, the cross products between self- and friend ratings of hostility and baseline SBP were entered in a third step, to check the assumption of homogeneity
of regression coefficients (J. Cohen & P. Cohen, 1983); this assumption was met.

Once again, to ensure that the interaction conformed to the hypothesized form, the interaction is depicted as three simple regression lines (see Figure 2). It appears that only suppressors showed the expected cardiovascular hyperreactivity to an interpersonally stressful task, as had been hypothesized.
Although these results are promising, there are two concerns about the present design that may limit the interpretation of these results. First, the lack of even a minimal relation between hostility ratings may be of concern, as others have found higher relations for similar single items (e.g., "has hostility towards others," $r = .33$; Funder, 1980). There are a few methodological reasons that might explain the independence of the self- and friend rating of hostility. There could have been a restriction of range for either rating; however, an examination of scatterplots, the standard deviations, and the range of ratings for friends and subjects suggested that no such restriction occurred. Also, it could be that social desirability is suppressing (by which I mean statistically, and not psychodynamically) the relation between the two ratings. As might be expected, social desirability was significantly related to the self-rating of hostility ($r = .23$, $p < .05$), but not to the friend rating ($r = .13$). Importantly, partialling out the ESDS score from the self-rating of hostility did not substantially change its relation to the friend rating ($r = .03$). Finally, curvilinearity could have compromised the relation between these two variables; again an examination of scatterplots did not reveal such a pattern.

The second limitation to this study is that only a single item was used to assess hostility; thus the unreliability inherent in single-item measures may have compromised these findings. To both replicate and extend the results reported for the first study, a second study was conducted in which the Cook and Medley HO scale was completed by friends and subjects, rather than the single hostility item.

It has been shown that hostility measures (including the HO scale) combine to varying degrees low Agreeableness and high Neuroticism—two of the five enduring factors of personality—whereas others only tap low Agreeableness (Smith & Williams, 1992). Perhaps hostility measures such as the HO scale vary in the strength of their prediction of CHD as they vary in their blend of these two major personality traits. Low Agreeableness alone has been proposed as the critical coronary-prone component of hostility (Costa, McCrae, & Dembroski, 1989), whereas Neuroticism is considered a nuisance factor within hostility (Costa & McCrae, 1987). For this reason, a marker of low Agreeableness (or high Antagonism) and Neuroticism from a five-factor personality scale (John, Donahue, & Kentle, 1992) was also completed by subjects and friends. If speculations about the relation between hostility, Agreeableness, and Neuroticism are correct, then low Agreeableness should act similarly to hostility, but Neuroticism should not.
Study 2

METHOD

All procedures were identical to those of Study 1, with the following two exceptions. The White Bear paradigm was not included in this study, and in place of the single hostility item, the Cook and Medley HO scale and the low Agreeableness (or high Antagonism) and Neuroticism scales (John et al., 1992) were substituted.

The HO scale is a 50-item true-false list of sentences extracted from the MMPI that was originally designed to differentiate unpopular teachers from the more popular ones (Cook & Medley, 1954). Many have now noted the multi-dimensionality of the HO items (Costa, Zonderman, McCrae, & Williams, 1986) and Barefoot and his colleagues have offered conceptually derived subscales that demonstrate differential predictive power for CHD survival (Barefoot, Dodge, Peterson, Dahlstrom, & Williams, 1989); the 27 items that tap hostile emotions, thoughts, and behaviors—as opposed to social avoidance, paranoia, or unknown—and that predict CHD survival were employed here.

The Agreeableness subscale of the Big Five Inventory (Version 54) is a 9-item marker of Agreeableness that employs a 5-point Likert scale. Since hypotheses have concerned low Agreeableness or high Antagonism, scores from subjects and friends were reversed, and renamed Antagonism scores, to ease interpretation. The internal consistency estimate is .81 for this scale, and it correlates .82 with its equivalent on the NEO Personality Inventory (NEO-PI; Costa & McCrae, 1985). Similarly, the Neuroticism subscale contains eight items, has an internal consistency estimate of .86, and correlates .82 with its NEO-PI counterpart (John et al., 1992).

RESULTS

Descriptive Data

Ninety-two subjects (31 males, 61 females) participated in the study. Subjects were on average 22 years old (SD = 4 years), and their friends were on average 23 years old (SD = 6 years). Subjects and friends had known each other for 4½ years (SD = 3 years), and both subjects and friends stated they were very close to each other (M = 4.3 on a 5-point scale, SD = .7 for subjects; M = 4.2, SD = .5 for friends). The means, standard deviations, intercorrelations, and Cronbach alphas for both the friends’ and subjects’ personality scores can be found in Table 1.

The friend rating of hostility as measured by the HO scale was again independent of the self-rating of hostility (r = .08), and this time a significant difference was found between the mean level of these ratings
Table 1
Sample Statistics and Intercorrelations among Variables in Study 2

<table>
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<tr>
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<th>1</th>
<th>2</th>
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<th>4</th>
<th>5</th>
<th>6</th>
<th>M</th>
<th>SD</th>
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<tbody>
<tr>
<td>1. HO scale</td>
<td>(.72)</td>
<td>.45</td>
<td>.33</td>
<td>.08</td>
<td>.45</td>
<td>.11</td>
<td>11.0</td>
<td>3.9</td>
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<tr>
<td>2. Antagonism</td>
<td>(.80)</td>
<td>.34</td>
<td>.12</td>
<td>.25</td>
<td>.22</td>
<td>10.4</td>
<td>5.5</td>
<td></td>
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<tr>
<td>3. Neuroticism</td>
<td>(.79)</td>
<td>-.12</td>
<td>.09</td>
<td>.13</td>
<td>23.5</td>
<td>5.7</td>
<td></td>
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<tr>
<td>4. Friend HO scale</td>
<td>(.90)</td>
<td>.64</td>
<td>.59</td>
<td>13.4</td>
<td>6.9</td>
<td></td>
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<tr>
<td>5. Friend Antagonism</td>
<td>(.91)</td>
<td>.54</td>
<td>13.8</td>
<td>6.5</td>
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<td></td>
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<tr>
<td>6. Friend Neuroticism</td>
<td>(.79)</td>
<td>20.5</td>
<td>3.9</td>
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Note. N = 92 (61 females, 31 males); HO scale = subject’s Cook-Medley Hostility Scale (revised) score; Antagonism = subject’s Antagonism score; Neuroticism = subject’s Neuroticism score; Friend HO scale = HO scale by friend for subject; Friend Antagonism = Antagonism score by friend for subject; Friend Neuroticism = Neuroticism score by friend for subject. Cronbach alphas are shown on the diagonal; correlations in bold are significant at the .05 level, two-tailed test.

(t = 3.0, p < .01). Consistent with other findings, the self-friend agreement correlation for Antagonism was significant (r = .25), although the Neuroticism agreement correlation (r = .13) was somewhat below that found by others (Watson, 1989). Intercorrelations among the HO scale and markers of Antagonism and Neuroticism were as expected (Smith & Williams, 1992).

**Suppression and Blood-Pressure Hyperreactivity**

A hierarchical regression was performed, and again the arousal-phase SBP served as the dependent measure. First, the centered baseline SBP was entered as a covariate, F(1, 90) = 99.6, and this covariate accounted for 53% of the variance. Again, centered self- and friend hostility ratings and their cross product were entered simultaneously on the second step. This time neither the self-rating of hostility, F(1, 87) = 2.2, b = .35, nor the friend rating of hostility, F(1, 87) = 2.9, b = -.22, was significant. Once again, the cross product of the two ratings was significant and accounted for 3% of the variance in blood-pressure reactivity, F(1, 87) = 5.0, b = -.08. Finally, the assumption of homogeneity of regression coefficients (J. Cohen & P. Cohen, 1983)
was met. This interaction again conformed to the hypothesized form, and replicated that shown for Study 1 in Figure 2. As in Study 1 and as hypothesized, only suppressors showed the expected cardiovascular hyperreactivity to an interpersonally stressful task.

Finally, two further multiple regression analyses were conducted to examine first Antagonism and then Neuroticism. First, centered self- and friend Antagonism scores were substituted for the self- and friend HO scores as described above. SBP reactivity scores once more served as the dependent measure. The baseline SBP covariate on the first step accounted for 53% of the variance, as would be expected. When self- and friend Antagonism scores and their cross product were entered on the second step, the self-rating of Antagonism was not significant, $F(1, 87) = .1$, but friend Antagonism was, $F(1, 87) = 5.7$. The cross product accounted for a nearly significant amount of variance in blood-pressure reactivity (2%), $F(1, 87) = 3.6, b = -.05$, and again replicated that shown for Study 1 in Figure 2.

For the final regression analysis, centered self- and friend Neuroticism scores were substituted for the HO scores, and SBP reactivity was the dependent measure. Although baseline SBP again accounted for 53% of the variance on the first step, neither self- nor friend Neuroticism scores nor their interaction were significant. As suggested by Costa et al. (1989), low Agreeableness or Antagonism appears to be the component within hostility that predicts cardiovascular reactivity, whereas high Neuroticism does not.

**DISCUSSION**

Researchers often consider consensus or self-other agreement in terms of convergent validity, and thus treat the self-other correlation as a validity coefficient. For example, in discussing the results of the Norman and Goldberg (1966) study, Watson (1989) points out that well-acquainted peers demonstrated better *validity* (the averaged other ratings correlated highly with the self-ratings) than less-acquainted peers, and so concluded that acquaintanceship may have compromised validity in some of the previous studies in the area. Others have suggested that behavioral prediction is a criterion of interest in self-other trait agreement (Funder, 1987), and that interpersonal behavior is the criterion of interest to personality (Block, 1977).

Each criterion for personality traits leads to a different interpretation of self-other disagreements, and thus different possible sources of
error. A construct validity perspective opens up four major areas to be explored for understanding self-other disagreements. These four areas do not appear as method error or nuisance variables, but can be viewed as variables that are themselves intriguing. First, there may be "other" variables (e.g., shared meaning or unique impressions)—some quality or trait unique to the second rater that distorts their rating ability. Second, relationship variables may affect agreement; the self and other may not have been exposed to behavior from the same situations (overlap), may not have known each other for a long time (acquaintanceship), or may not have known each other well. Third, there are trait variables to consider; some traits are socially desirable, others are easily observable, still others are concretely operationalized. Finally, there may be subject variables, or characteristics unique to the individual, that may impact upon self-other agreement. This research sought to explore the last variable—individual differences in subject characteristics—that might cause self-other disagreements.

These two studies have demonstrated that suppressors have SBP hyperreactivity to a stressful interpersonal task when compared to all others. This result was found with a single-item measure of hostility, a traditional measure of hostility, and a marker of Antagonism, the suspected critical component of hostility. These results are consistent with the long-held hypothesis that suppressed hostility has an impact on cardiovascular functioning (Harburg et al., 1973; Siegel, 1992).

Why do suppressors hyperreact to hostility-provoking tasks? Discharge theory (Jones, 1950) holds that emotional expression and autonomic arousal are inversely related because of their common role in tension reduction. Although this theory clearly implies within-subject covariation, data typically employed as support for this theory demonstrate between-subject covariation; individuals who exhibit little emotional expression (internalizers) show enhanced autonomic arousal, whereas individuals who express emotion freely (externalizers) show no abnormal internal or physiological arousal (Buck, 1979). Cacioppo et al. (1992) have suggested that this theory can be conceptualized as involving differential gains in two separate systems. Externalizers may display a large gain in the expressive system and only a small gain in a physiological system in reaction to emotional stimuli. By contrast, internalizers show small gains in expressiveness and large gains in their physiological system. This conceptualization does not necessarily lead to a hydraulic, causal relation between emotion and physiology; it merely suggests that stable large gains in one system may relate to
smaller gains in another system. In the current context, suppressors (those who do not express emotion freely, but instead internalize these emotions) should show enhanced autonomic arousal, such as cardiovascular reactivity. All others studied here either express their emotions (although for the repressors not necessarily knowingly) or do not experience the emotion and thus do not express it. Thus, only suppressors should show a larger gain in the cardiovascular system when compared to others, and this is the pattern of results found here.

Alternatively, some type of prolonged thought intrusion or “rebound” (Wegner et al., 1987) may have occurred in suppressors to cause their heightened SBP reactivity. However, we know that both repressors and suppressors are able to successfully avoid thoughts when instructed to do so, such as was found with the white bear task. Thus, one would think that both might be equally vulnerable to later thought intrusion or rebound, and so both should demonstrate SBP reactivity. But the critical difference that distinguishes suppressors and repressors is the expression of these unwanted thoughts or feelings. Suppressors are able both to avoid unwanted thoughts and their expression, whereas repressors are successful at the avoidance of a thought, but not its expression. Thus, there is reason to believe that suppressors and repressors differ not in their thought avoidance abilities, but in their expression avoidance abilities. That is, by purposefully avoiding the expression of hostile feelings during the Structured Interview, suppressors may have continued to feel hostile at the time of the SBP reactivity reading (after the hostile situation was over). Repressors, on the other hand, although able to avoid thoughts such as white bears, may be less able to avoid the expression of certain feelings, such that they may have less emotion rebound when the Structured Interview is over.

Such conjectures could be tested in two ways. First, process measures of hostile feelings/thoughts and the expression of these feelings could be added to the Structured Interview. During the interview suppressors and repressors should not necessarily differ in their number of hostile thoughts, but should differ dramatically in the expression of these thoughts. Second, the White Bear paradigm could again be employed, but this time a third period of free expression of white bear thoughts could be added to test the differential rebound hypothesis outlined above. Further, suppression and then expression of less neutral material, such as negative emotions, could be substituted for the white bear stimulus.

Self-other disagreements also predicted individual differences in
avoidance of unwanted thoughts. Although suppressors and repressors both demonstrated below-average white bear thoughts, so too did the low hostility self-friend agreement individuals. Further investigations of this finding, including a multi-item measure of hostility and substituting unwanted affect-laden thoughts for white bear thoughts, are warranted.

Perhaps variables other than subject variables account for the current findings. If this were the case, however, an alternative variable would need to cause self-friend disagreement, individual differences in thought suppression, and SBP reactivity. As an example, some individuals may have stricter standards (or lower criteria) for labeling themselves as hostile, and this would clearly affect the degree of self-friend hostility disagreement. Thus, the individuals labeled as suppressors here could have obtained the rating disagreement because a certain subset of individuals have more self-critical standards than others. However, for such a factor to account for the present findings, stricter hostility self-standards would also have to cause hyperreactivity and efficient thought control. Is this plausible?

Although debates about the motivation for engaging in a defensive process have raged for some time, Weinberger (1990) persuasively argues that individuals are motivated to be self-defensive when information contradicts strongly held beliefs about the self. Freud initiated this line of thought by suggesting that defense “proceeds from self-respect of the ego. The very impressions, experiences, impulses and desires that one man indulges . . . will be rejected with the utmost indignation by another . . .” (cited in Weinberger, 1990, p. 343). Thus, even those within the psychodynamic tradition believe that differential self-standards (overactive superegos, in psychoanalytic parlance) cause suppression and repression, and thus could cause blood-pressure hyperreactivity and the ability to avoid unwanted thoughts. The differential self-standard hypothesis can clearly be empirically tested: Suppressors should overestimate hostility levels in standardized stimuli, or should rate hostile material as relatively more hostile when told to attribute the material to themselves versus others. However, conceptual controversy will remain over the substantive versus methodological interpretation of self-other disagreements.

This study examined only the trait hostility, because it was this trait that was thought to cause increased SBP reactivity. It would be useful to investigate other traits, such as anxiety, and properties of a trait, such as personal aversiveness, that lead to both self-friend disagreements
and substantive outcomes. Future studies could also examine the limits of a relationship variable, such as intimacy, to see if this variable affects the relation between self-friend disagreement and SBP reactivity. For example, one would expect that the disagreement of more intimate partners would better predict SBP reactivity than the disagreements of less intimate ones.

The main finding of this article is that self-other disagreements can be useful for measuring other constructs and testing hypotheses about these constructs. Although two subject variables have been the focus of this line of research, trait, other, and relationship variables that would both cause self-other disagreements and are recalcitrant to operationalization may now be explored.

REFERENCES


*Manuscript received October 3, 1992; revised April 6, 1993.*
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