

## **Behavior, Attitudes, and Cognitions of Anger-Prone Individuals**

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*This research explored facets of anger based on a multidimensional-associationistic conceptualization (Berkowitz, 1994) that includes antecedents, behavior, cognitions, and experiential response dimensions. High and low anger-prone individuals responded to six audiotaped situations validated in previous work to be anger provoking. Participants evaluated their own audiotaped responses, as did peer judges. Participants also completed the Social Problem Solving Inventory (SPSI) and the Brief Symptom Inventory (BSI) and they reported on the effect of anger experiences in their lives. Neither self nor peer ratings of the audiotaped responses differentiated the behavior of anger groups. High and low anger-prone individuals, however, differed in the way that they viewed the consequences of their behavior and how anger affected them in general. Furthermore, high anger-prone individuals had elevated levels of pathology on eight of the nine scales of the BSI and scored significantly lower on the SPSI. Results are discussed in terms of assessment of anger proneness, its relationship to psychopathology and implications for future work.*

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**KEY WORDS:** anger; behavior; cognitions; attitudes.

### **INTRODUCTION**

Clients seeking therapy often report angry feelings as part of their clinical picture (Edmondson and Conger, 1996). Although there is no cate-

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gory for “anger disorders” in the *Diagnostic and Statistical Manual—Fourth edition* (DSM-IV) (American Psychiatric Association, 1994), there is a movement afoot to construct a diagnostic category for anger disorders to be included in the next revision (Eckhardt & Deffenbacher, 1995). Currently, angry feelings or problems associated with anger are a feature of some DSM-IV categories such as personality disorders, anxiety disorders, and depression.

Although the emotion of anger has been widely studied as a general phenomena [see Averill (1982) for a classic work and Wyer and Srull (1993) for a more contemporary view], less is known about the role of anger in psychopathology. For the most part, anxiety has been the *sine qua non* of psychopathology since Freud and still plays a major role in our theorizing. Deffenbacher (1993, 1994), as well as others (DiGiuseppe, Tafrate, & Eckhardt, 1994), have suggested that there is a population of individuals who suffer from frequent and intense angry feelings that negatively impact their health, social, and occupational functioning. Deffenbacher (1993) has suggested that these individuals are prone to generalized anger as opposed to situation specific anger or angry defensiveness. Anger-prone individuals are thought to be easily provoked, to be chronically angry, and to respond to many situations with intense and prolonged anger.

Despite the lack of a diagnostic category [see Eckhardt and Deffenbacher (1995) for suggested criteria], researchers have carried out a number of treatment-outcome studies targeting anger problems for intervention. There are several narrative reviews of the effectiveness of various types of interventions (Milan & Kolko, 1985; Sharkin, 1988; Warren & McLellarn, 1982), and more recently, Tafrate (1995) published a meta-analysis of anger treatments, although it focused primarily on only the intensity and frequency of “angry feelings” as an outcome measure. By and large, these reviews indicated positive effects for the treatment of anger problems using relaxation, cognitive, social skills training, and exposure-based treatments. While results are promising, Edmondson and Conger (1996) noted some methodological and theoretical issues that required further clarification. More specifically, they pointed out that each of these treatment methods is predicated on somewhat different assumptions and that many of these techniques (and inherent assumptions) are direct applications from the anxiety literature [see Edmondson and Conger (1996) for a more detailed discussion].

Edmondson and Conger (1996) suggested that research in the assessment and treatment of anger might benefit from a broad, comprehensive conceptualization of anger problems. They suggested a multidimensional-associationistic framework based on Berkowitz (1994), in which major domains to be targeted include anger antecedents as well as the behavioral,

cognitive, physiological, and experiential response dimensions of anger.<sup>3</sup> Briefly, in this framework anger is an emotion that is multidimensional in nature, as it is comprised of components (response elements) from multiple domains (cognitions, physiological responses, etc.) Anger responses are also associative in nature, in that elements in one domain could automatically trigger elements (responses) in other domains through biology and experience (Berkowitz, 1994). In other words, these responses are loosely associated through a memory network such that antecedents can activate cognitive components, which in turn could activate physiological components, or vice versa.

This construal shares certain structural features with the framework presented by Eckhardt and Deffenbacher (1995); however, there are differences. Theirs is not an associative model and the present multidimensional–associationistic framework (Edmondson & Conger, 1996) includes an anger behavior component in addition to the cognitive, physiological, and experiential components described, in depth, in the Eckhardt and Deffenbacher (1995) model. Briefly, cognitive components include cognitions, attributions, appraisal, semantic knowledge, information, and self-talk; physiological components include the basic physiological responses such as heart rate, blood pressure, etc., that are involved in anger arousal; and the experiential component includes a description of the person's phenomenological experience including labels and descriptors.<sup>4</sup> The anger behavior component in this model is defined as the behaviors that are the response to an anger-provoking situation. Since the emotion of anger is assumed to be aversive to the individual, the goal of most anger behavioral responses would be to reduce anger or to somehow rectify the source of the anger provocation. One reason for the inclusion of a behavioral component is that the way an individual expresses his or her anger might be an important feature of their difficulties. For example, an individual might have justifiable anger but have a very maladaptive way of expressing it that has serious social consequences. Thus, it would be important to target those behaviors for modification in any intervention. Second, even if the basic problem is distorted or maladaptive cognitions, successful modification of those cognitions would not guarantee

<sup>3</sup>Although the Berkowitz (1994) model provides a good framework for thinking about the major components of anger in terms of structural elements or the architecture of the system, Lang's (1968, 1993) bioinformational processing model of emotion and Foa and Kozak's (1986) extension have much relevance for intervention techniques in terms of the "emotional processing" of a network and have also been influential in our thinking.

<sup>4</sup>We thought it was important to get information on various aspects of the anger experience such as intensity, frequency, and appropriateness for treatment purposes, and thus this was retained as a major domain for assessment and treatment. Technically, frequency and intensity could have been included under anger response dimensions and appropriateness or experiential labels could be included under cognitive response dimensions.

that the person would behave appropriately, as he or she might lack the necessary behavioral repertoire to carry out a functional response to a situation.

A major implication of this point of view is that in order to conceptualize anger problems and determine appropriate goals for treatment, one needs to do a comprehensive assessment of the anger antecedents as well as the four response domains.

There has been relatively little broad-based assessment of anger-prone individuals, although Deffenbacher *et al.* (1996) recently published a series of studies relating the use of the State-Trait Anger Scale (Spielberger, 1991) to state-trait theory. The present study is an exploratory effort to assess some of the response dimensions of anger in terms of the outlined domains. More specifically, cognitive and behavioral responses to anger inducing stimuli (antecedents) were examined in high- and low-anger individuals with a view toward gaining information as to relevant cognitive and behavioral processes that might be implicated in maladaptive patterns of responding. To this end, participants who had been selected as either high or low on trait anger [State-Trait Anger Scale (Spielberger, 1991)]<sup>5</sup> were presented with a series of six, previously validated, anger-inducing audiotaped situations to which they were asked to respond. Their responses were audiotaped and used in two ways. First, the taped responses were played back to the participants in order to have them judge their own behavior as to its effectiveness, appropriateness, and likely consequences. Second, the audiotaped responses were evaluated by peer judges on dimensions of effectiveness, appropriateness, complexity, and response style. One of the relevant cognitive response dimensions discussed by Edmondson and Conger (1996) and others (Eckhardt & Deffenbacher, 1995) is the self-appraisal of one's behavior, particularly in terms of the perceived effectiveness and appropriateness. One way an individual can go astray is by a defective evaluation of their own behavior. That is, an individual's behavior might be effective in terms of meeting an individual's goal, but could be judged as inappropriate by others. The possibility arises that anger-prone individuals misappraise the behavioral strategies they employ and/or the impact (consequences) that their behavior has on others and thus may behave in a socially incompetent fashion, particularly when aroused to anger. The audiotaped responses not only provided a sample of the person's responses that they could self evaluate, but also provided an opportunity for peer judges to

<sup>5</sup>Although individuals were selected by a trait anger scale, we prefer to label them as high or low anger-prone, as the term "trait" has many connotations. We prefer the probabilistic connotation of "proneness," as opposed to the more "fixed" notion of a trait, which has an association with traditional individual differences notions as well as the psychodynamic literature.

evaluate those responses and their impact, as well. Ultimately, the competency or adequacy of a response is a social evaluative judgment made by others (McFall, 1982). Social evaluative judgments not only provide some criterion with which to evaluate behavior, but also provide a standard against which to compare the individual's self evaluation.

A related issue is the degree to which behavioral and related cognitive deficits might extend to other areas. Social skills training is a frequently used treatment method with these individuals (Edmondson & Conger, 1996); however, we have little information on how widely social skills deficits might be implicated in individuals with anger problems. Thus, a treatment package that narrowly defines social skills deficits only in relation to anger-inducing situations might ignore more generalized types of deficits that might be important to target in any comprehensive treatment regimen. Thus, overall and component scores of the Social Problem Solving Inventory (D'Zurilla & Nezu, 1990) were also investigated in high and low anger-prone individuals as a means of obtaining broader information on self-reported social functioning.<sup>6</sup>

Further, it is quite possible that an anger-prone individual might also experience emotional difficulties or problems in other areas as well. That is, a broader range of psychopathology might be implicated that could be significant in terms of both designating any DSM category of anger disorders and impacting the range and type of treatment. Thus, high and low anger-prone individuals' scores were compared on the Brief Symptom Inventory (Derogatis & Spencer, 1982)<sup>7</sup> to ascertain if high anger-prone individuals displayed increased psychopathology in other areas compared to low anger-prone individuals. Consonant with this perspective, individuals were also asked a series of direct questions about their experience with anger in terms of how anger impacted their lives and how they thought their friends and family viewed their anger. Finally, the following were hypothesized.

1. High anger-prone individuals would evaluate their audiotaped responses as more effective and less appropriate than low anger-prone individuals. (The reasoning here is that high anger-prone individuals misappraise or overestimate the effectiveness of their behavior,

<sup>6</sup>We had included the Social Skills Inventory (SSI; Riggio, 1989) as an exploratory measure of social skills, as this device had not been widely examined in conjunction with psychopathological problems and we wondered about its merit. Correlational and principal components analysis on a full-range sample ( $N = 743$ ) indicated that the SSI had almost no relationship with any of the self-report measures that were administered (all  $r$ 's  $< .10$ ). Thus, we decided to drop the SSI from any further consideration.

<sup>7</sup>This study used the 1982 BSI manual, however, there were no substantial changes in the measure and the norms in the 1993 manual, for nonpatients, outpatients, and inpatients are the same according to the author (L. R. Derogatis, December 1996, personal communication).

which may serve as justification for that behavior. Feedback from the environment likely informs them that, at times, their behavior is inappropriate and they might well have awareness of this to some degree).

2. Judges would evaluate the responses of high anger-prone individuals as less effective and less appropriate than those of low anger-prone individuals.
3. High anger-prone individuals would manifest more maladaptive responding on items measuring cognitions, attitudes, and attributions about anger and its consequences than would low anger-prone individuals.
4. High anger-prone individuals would manifest higher pathology on the BSI and lower social problem-solving ability on the SPSI than low anger-prone individuals.

This research is presented in three phases: screening and selection of the participants, obtaining audiotaped responses to six anger-provoking situations and evaluation of those responses by high and low anger-prone participants, and peer judgments of the participants' responses to those situations.<sup>8</sup>

## **PHASE I: SCREENING STUDY FOR SELECTION OF ANGER-PRONE PARTICIPANTS**

### **Method**

#### *Participants*

Seven hundred sixty-five men (53%) and women (47%) were administered a screening battery in order to select high and low anger-prone individuals. Participants for this experiment were students enrolled in an Introductory Psychology course and received course credit for their participation. The participants were mostly Caucasian (87%), with African-American (3%), Asian-American (4%), Hispanic (2%), and other (3%) participants as well. They had a mean age of 19.63 (SD = 2.33) and a mean number of years in school of 1.82 (SD = 0.94). In addition to the measure used for selection, there were other measures included in the battery relevant to this investigation (see below).

<sup>8</sup>See Tescher (1996) for a description of the development and evaluation of the six situations which served as stimuli or "anger antecedents" for this research.

### Measures

*State-Trait Anger Expression Inventory (STAXI)*. The STAXI (Spielberger, 1991) is a 44-item self-report inventory that measures trait and state anger as well as anger expression styles such as anger-in, anger-out, and anger-control. Participants were selected on the basis of their score on the trait scale, which has a reported internal consistency range of 0.73–0.85 (Spielberger, 1991) and a test–retest estimate ranging from 0.62 to 0.81 for 395 undergraduates over a 2-week interval (Jacobs, Latham, & Brown, 1988). The trait scale is comprised of items that measure trait anger temperament and trait anger reaction. Individuals scoring high on the scale are likely to be anger-prone, whereas individuals scoring low are not as likely to be prone to anger. The validity of the STAXI is supported by its relationship with a variety of other measures such as the Buss–Durkee (1957) Hostility Scale, the MMPI Hostility Scale (Cook & Medley, 1954), and the Eysenck Personality (Eysenck & Eysenck, 1975) as reported in Spielberger (1991).

*Anger Inventory (AI)*. The Anger Inventory (Novaco, 1975) is a 90-item measure (with no subscales) that was administered as it is often used in anger research and provides a validity estimate in terms of its relationship to the STAXI. Novaco reported an internal consistency ranging from 0.94 to 0.96 for the AI. However, the test–retest estimate reported was 0.17 (Biaggio, Supplee, & Curtis, 1981).

*Social Problem Solving Inventory (SPSI)*. The SPSI (D’Zurilla & Nezu, 1990) is a 70-item measure that assesses social problem-solving abilities. It is considered a social problem-solving measure because it refers to problem solving in real-life social environments based on social learning processes and social skills. The test–retest reliabilities for the two major scales (problem orientation scale and problem solving skills scale) and the total scale are 0.87, 0.83, and 0.88, respectively. The problem orientation scale assesses the motivational component of problem solving based on an individual’s cognitive–affective–behavioral response set. The problem solving skills scale assesses four goal direction skills (problem definition, solution generation, decision making, and solution implementation). The internal consistency of the scales is 0.94, 0.94, and 0.92, respectively.

*Brief Symptom Inventory (BSI)*. The BSI (Derogatis & Spencer, 1982) is a 53-item measure that assesses psychological distress or psychopathology. There are nine subscales, each assessing specific pathology (see Table I for the subscales), that have test–retest reliabilities ranging from 0.68 to 0.91. Internal consistencies range from 0.71 to 0.85. There are also scales indicating general severity of psychopathology and positive symptom distress.

Additionally, participants were asked a series of questions about their experience of anger and what consequences it might have. These included

how often anger got in the way of achieving goals, how much individuals felt that anger was a problem, the amount of anger their friends would say the individuals displayed, the amount of anger their family would say they displayed, how much they estimated that they experienced anger, and whether they would consider seeking help for an anger problem. These questions were rated on a 9- point scale from 1 (not at all, or an appropriate descriptor indicating a strong negative response) to 9 (very much, or an appropriate descriptor indicating a strong positive response).

### *Procedure*

Multiple sessions were run of between 1 and 20 participants, which lasted about 1.5 hr. A research assistant conducted each session. An informed consent form was administered before administration of the battery. A total of 228 individuals exceeded the desired score cutoffs on the STAXI and constituted the pool of participants who were contacted by telephone for study (see below).

### **Results**

Of the participants contacted, 41 high and 43 low anger-prone individuals (total = 84) agreed to participate in a further study (Phase II). Cutoff scores for selection were plus or minus one standard deviation of the mean ( $M = 20$ ,  $SD = 5$ ) on the trait anger subscale of the STAXI. Table I includes the scores of the 84 participants on the BSI, SPSI, AI, and STAXI.

Most of the questionnaires yielded significant effects for anger status, except for one BSI subscale and one SPSI subscale. On the two anger measures (STAXI and AI), the high anger-prone group obtained greater mean scores (indicating more anger) than the low anger-prone group on all subscales except controlled expression of anger (higher scores on this scale indicate greater control of anger), as would be expected. As predicted, the total SPSI score indicated that high anger-prone individuals had poorer social problem solving skills than low anger-prone individuals, primarily on the Problem Orientation scale, which is very likely to be influenced by emotional factors such as anger.

Further, the high anger-prone participants scored significantly higher on eight of the nine scales of the BSI. In addition, the derivative scores based on the nine scales indicated that the high anger-prone group scored in the range of psychiatric adult outpatients and inpatients rather than in



**Table I.** Anger-Prone Participants' Scores on the Screening Battery: BSI, SPSI, AI, and STAXI

Inventory	High anger ( <i>n</i> = 41)		Low anger ( <i>n</i> = 43)		<i>F</i> value
	M	SD	M	SD	
<b>BSI</b>					
Somatization	1.14	.96	.55	.73	10.4**
Obsessive compulsive	1.72	.89	.88	.72	22.3***
Interpersonal sensitivity	1.58	1.13	.85	.77	12.1***
Depression	1.54	1.17	.75	.85	12.6***
Anxiety	1.35	.94	.71	.71	12.7***
Hostility	1.69	1.04	.64	.86	25.3***
Phobic anxiety	.54	.73	.35	.60	1.8
Paranoid	1.70	1.09	.69	.72	25.1***
Psychoticism	1.51	1.13	.79	.84	10.8**
Global severity index	1.41	.83	.94	1.22	4.3*
Positive symptom total	32.54	12.15	22.28	14.21	12.6***
Positive symptom distress index	2.17	.69	1.44	.47	32.7***
<b>SPSI</b>					
Problem orientation scale	67.93	23.32	85.35	19.39	13.9***
Problem solving skills scale	84.24	26.28	91.38	23.94	1.7
Social problem solving skills	152.17	44.71	176.72	40.00	7.1**
AI total	348.1	36.4	281.7	47.1	52.3***
<b>STAXI</b>					
State anger	15.9	7.0	10.7	1.6	22.2***
Trait anger	27.6	2.8	13.7	1.3	840.9***
Anger in	19.7	4.1	15.9	3.6	21.1***
Anger out	19.7	3.7	13.4	2.6	81.1***
Anger control	19.1	4.0	27.7	4.4	89.2***

*Note.* BSI, Brief Symptom Inventory; SPSI, Social Problem Solving Inventory; AI, Anger Inventory; STAXI, State Trait Anger Expression Inventory.

\**p* < .05.

\*\**p* < .01.

\*\*\**p* < .001.

the range of the norm group of nonpatient, normal adults (see the means for the normative samples in the BSI manual). The scales on the BSI are highly interrelated, and as such, finding differences on multiple scales is not surprising, especially when there are differences on Hostility by virtue of selection on high and low trait anger. However, while the scales are not independent of one another, Conger, Conger, Edmondson, and Tescher (1998) found that there was differential predictability of the BSI Scales using variables derived from a principal-components analysis of the STAXI, suggesting some discriminant validity of the BSI in relation to the anger variables.

The questions examining anger experience and the impact anger might have on the individual's life were first analyzed with a 2(anger status) × 2(gender) MANOVA using the six questions as the dependent

variables. Results indicated a significant effect [Rao's  $R_{(6,73)} = 14.50$ ,  $p < .0001$ ]. Univariate follow-up analyses indicated that the high anger-prone participants scored significantly higher than the low anger-prone participants on all six questions (see Table II). High anger-prone participants indicated that anger got in their way, anger was more of a problem, friends and family saw them as angrier people, they experienced more anger, and they were more likely to seek help than low anger-prone participants. However, in spite of the significant differences between groups, the mean for the high-anger group was at or below the midpoint of the 9-point scale (i.e., 5) for four of the six questions, which indicated that the high-anger group still viewed their anger as within the normal range. It was only for the questions dealing with the amount of anger the individuals said they experienced and the degree to which their family saw them as angry people that the mean for this group exceeded the midpoint. Nevertheless, the high anger-prone scored in the expected direction.

Thus in general, the measures supported the hypothesis that the high anger-prone individuals had more problematic anger, greater psychopathology, and lower problem-solving skills than the low anger-prone individuals. Furthermore, the high anger-prone group self-reported more difficulty with anger than did the low anger-prone group in terms of goal interference, amount of affect, and impact on family and friends. This suggests that anger may have a broader impact on one's life and functioning and that this would need to be included in any assessment procedure. Interestingly, although the high-anger group scored significantly higher on the question

**Table II.** Anger-Prone Participants' Answers on Self-Report Anger Questions

Question	High anger ( $n = 41$ )		Low anger ( $n = 43$ )		<i>F</i> value
	M	SD	M	SD	
Anger in your way	4.6	1.9	2.3	1.2	45.5***
Anger problem	5.1	2.4	2.0	1.3	52.9***
Friends evaluate your anger	5.2	2.2	2.4	1.5	47.5***
Family evaluates your anger	6.0	2.2	2.7	1.6	61.4***
Amount of anger Experienced	6.0	1.6	3.2	1.6	66.4***
Want help for anger	2.9	2.3	1.5	1.2	11.7***

*Note.* Questions are the following: How often does the way you express your anger get in the way of personal goals? Do you feel that you have a problem with anger? How angry a person would your friends describe you as? How angry a person would your family describe you as? How much anger do you experience? and would you like to seek help for a problem with anger?

\*\*\* $p < .00$ .

regarding seeking help for their anger problem, their mean score was quite low ( $M = 2.9$ ,  $SD = 2.3$ ) and indicated only that they “might” seek help.

## PHASE II: ANGER-PRONE RESPONSES AND EVALUATIONS

### Method

#### *Participants*

Eighty-four participants (19 high anger-prone women, 22 high anger-prone men, 22 low anger-prone women, 21 low anger-prone men) of the original 228 eligible individuals, described previously, participated for further study for either introductory course credit ( $n = 14$ ) or a payment of \$7.00 ( $n = 70$ ). All data were based on Caucasian participants between 18 and 21 years of age, although other data, such as the screening battery, were collected on a more ethnically diverse population. Interpretation and analyses, however, was limited to this sample, as anger responses and displays are affected by cultural context and we did not have an adequate sample with which to examine diversity.

#### *Materials*

The stimulus material used in this study was an audiotape of six anger-provoking situations which was developed in previous research that assessed and validated the kinds of situations that individuals said made them angry (for details see Tescher, 1996). Briefly, a sample of participants listed and described situations they found anger provoking and another sample of participants evaluated these situations on anger intensity, anxiety, vividness, typicality, etc., (rated on a 1- to 9-point scale, with 1 “not at all” and 9 “very much”). The six stimuli situations were selected on the following basis: (a) they were anger provoking rather than anxiety provoking, (b) they represented a social interaction within a personal relationship, and (c) they were rated at least moderately typical and moderately vivid.

The six selected anger situations varied in anger intensity such that two situations from each level of low ( $M < 3.66$ ), moderate ( $3.66 < M < 6.33$ ), and high ( $M > 6.33$ ) anger intensity was selected to provide a range of anger situations. This was a built-in stimulus characteristic to determine whether participants varied their anger accordingly as well as to examine whether anger status interacted with situations. The six audiotaped situations were recorded by the same female voice on two cassettes, one language

appropriate for men and one for women. The situations were recorded and presented in a fixed order of high, moderate, and low. The order was fixed for practical reasons, although this places limits on the generalizability of the results.

### *Procedure*

Participants were run individually and research assistants were blind to the anger status of the participants. First, participants provided a rating describing their current emotional state in order to screen out any participants who said they were currently upset or distressed. No one was eliminated for self-reported distress. The participant was then taken to a room with the audio equipment. There, a research assistant played the audiotape of the six situations.

The research assistant was specifically trained to be nonintrusive. After providing instructions to the participant, the research assistant turned away from the participant and sat facing a wall while the participant described their responses into a microphone. Participant's responses were recorded and these recordings were later transcribed so that they could be read and evaluated by the peer judges.

The participants were instructed to listen to each situation and asked to imagine that the situation was happening to them. On the audiotape at the end of each situation was the question, "What is your reaction?" to which the participants then described how they would react. After responding to the six situations, subjects heard the situations and their responses to them. They were then asked to evaluate each of their responses on 9-point Likert scale in terms of the following dimensions: response appropriateness (suitable or fitting, correct), response effectiveness (producing the desired result), and positive and negative consequences that their response may have had for them and the other person involved in the situation. Two additional evaluations were carried out by the participants asking them to rate the vividness and the amount of anger evoked by each situation in order to confirm the anger-arousing qualities of the situations.

The participants then provided evaluations for nine general questions relevant to their general experience of anger (outside the experimental situation). The first four questions concerned anger responses in general (How acceptable is it to feel angry? or . . . to respond angrily to another person? and How important is it that your anger response be appropriate? or . . . be effective?). The remaining five questions concerned other possible emotions elicited when responding to the situations. This enabled the

Table III. Anger-Prone Participants' Evaluations on Validity Checks

Validity check	High anger		Low anger		F value
	M	SD	M	SD	
Vividness of situations	6.23	2.34	5.77	2.22	2.54
Anger reaction to situations	4.87	2.17	3.83	1.83	13.27***
Anxiety reaction to procedure	4.90	2.41	4.17	1.75	2.38
Depression reaction to procedure	2.24	1.77	1.98	1.35	0.55

\*\*\* $p < .001$ .

detection of other moods the experimental process may have evoked. Upon completion and debriefing, the experiment was concluded.

## Results

The data for the anger-prone participants were based on two conceptually different sets of questions. The first set pertained to the validity of the experiment and postexperimental inquiry (eight variables), while the second set consisted of the self-ratings of the specific responses to the situations (six variables) and evaluations that describe anger responses "in general" (four variables). The data were analyzed and discussed within this organizational framework (see Tables III and IV).

Multivariate and univariate analyses were based on a 2(anger status)  $\times$  2(gender) design. The two validity evaluations (vividness and anger reaction to situations), however, included repeated measures on the six situations

Table IV. Anger-Prone Participants' Self-Evaluations on Situational and General Anger

Ratings	High anger		Low anger		F value
	M	SD	M	SD	
Effectiveness of response	6.45	1.05	6.43	1.02	0.00
Appropriateness of response	6.49	1.06	6.68	1.08	0.69
Negative self-consequences	4.43	2.13	3.85	2.03	5.53*
Negative other-consequences	4.41	2.12	3.81	1.97	7.48**
Positive self-consequences	5.58	2.06	5.64	1.84	.23
Positive other-consequences	4.29	2.05	4.95	1.94	7.96**
Acceptability of angry feelings	6.85	1.54	6.02	1.79	5.09*
Acceptability of angry behavior	4.76	1.34	3.30	1.82	16.96***
Importance of effectiveness	7.32	1.86	6.72	1.76	2.43
Importance of appropriateness	6.61	1.99	7.42	1.48	4.27*

\* $p < .05$ .

\*\* $p < .01$ .

\*\*\* $p < .001$ .

in order to provide an experimental check on the selected situations. Initially, most of the analyses were carried out using situations as a repeated measure, as there was a possibility that situations might have interacted with anger status and this interaction would modify any interpretation for group main effects. There were no interactions and the six situations were averaged and used in the subsequent analyses.

Analyses comparing the credit and paid groups yielded only one difference [ $F_{(1,82)} = 4.36, p < .04$ ] of 18 dependent variables (the variable was the question of the acceptability to feel angry). Although it was unclear why the paid versus credit group differed on this variable, the relevancy of this variable for the anger status groups was still considered viable.

#### *Experimental Validity Checks*

The adequacy of the stimulus situations was analyzed by examining the vividness and anger provocation ratings of the situations using a 2(anger status)  $\times$  2(gender)  $\times$  6(situations) analysis of variance with repeated measures on the situations variable. There were no main effects for vividness; however, there was a repeated-measures effect for situation [ $F_{(5,400)} = 3.52, p < .004$ ], which indicated that one situation was more vivid than the others. However, vividness ratings ranged from 5.5 to 6.8, all above the midpoint of the 9-point scale, and there was no interaction.

For anger reactions to the situations, there was a main effect for anger status [ $F_{(1,80)} = 13.27, p < .0005$ ], which indicated that the high anger-prone participants felt greater anger than the low anger-prone participants when they responded to the situations. There was also a repeated-measures effect for situation [ $F_{(5,400)} = 38.75, p < .001$ ], indicating variation in participants' anger reaction across situations. High anger-prone participants validated the anger intensity of the situations, with mean ratings of 6.2, 4.7, and 3.8, respectively, for high-, moderate-, and low-anger intensity situations. Low anger-prone participants rank ordered the situations similarly, although their ratings were lower, i.e., 5.1, 3.5, and 2.9.

An additional two "general" questions were asked concerning participants' other emotional reactions (anxiety and depression) to the procedure of responding to anger-provoking situations. A 2(anger status)  $\times$  2(gender) MANOVA on those variables produced no effects [Rao's  $R_{(2,79)} = 1.22, p < .30$ ]. For high anger-prone participants, anxiety was  $M = 4.9$  ( $SD = 2.4$ ) and depression was  $M = 2.2$  ( $SD = 1.8$ ); for low anger-prone participants, anxiety was  $M = 4.2$  ( $SD = 1.7$ ) and depression was  $M = 2.0$  ( $SD = 1.4$ ).

*Self Evaluations: Situation Responses*

The effectiveness and appropriateness evaluations were analyzed using a 2(anger status)  $\times$  2(gender) MANOVA. The two sets of ratings were averaged over the six situations and used as the dependent measures. There were neither main effects for anger [Rao's  $R_{(2,79)} = .85, p < .43$ ] or gender [Rao's  $R_{(2,79)} = .91, p < .40$ ] nor an interaction. Additionally, correlations computed between effectiveness and appropriateness ratings ranged from 0.55 to 0.71 across the six situations, indicating a moderately strong to strong relationship. Thus, the correlations indicated that participants did not appear to discriminate clearly between these measures.

Participants also evaluated the likelihood that the consequences of their responses had a positive or negative impact on self and others. A 2(anger status)  $\times$  2(gender) between-groups MANOVA was carried out on the four dependent measures (positive and negative effects for self and other). There were main effects for anger status [Rao's  $R_{(4,77)} = 2.93, p < .026$ ] and gender [Rao's  $R_{(4,77)} = 3.18, p < .018$ ]; however, there was an interaction between anger status and gender [Rao's  $R_{(4,77)} = 2.64, p < .04$ ] that took precedence and was further analyzed. Examination of the coefficients of the first latent root and univariate  $F$ 's indicated that the anger-prone groups were significantly different on three of the four variables (negative self-consequences, positive self-consequences, and negative other-consequences), while the gender groups differed on the positive self-consequences variable. In order to test whether these effects were responsible for the multivariate interaction, two new variables were formed: the first consisting of a composite of three variables on which the anger groups differed and the second consisting of the variable on which the gender groups differed. The composite variable, multiconsequences, and the other variable, positive self-consequences, served as the two dependent variables in this 2(anger status)  $\times$  2(gender) MANOVA. If our reasoning was correct, then the follow-up analyses should produce two main effects, but no interaction. Results indeed yielded a main effect for anger status on the multiconsequences variable [Rao's  $R_{(2,79)} = 5.51, p < .006$ ] and a gender effect on the positive self-consequences variable [Rao's  $R_{(2,79)} = 5.81, p < .004$ ], with no interaction. Examination of the means (see Table IV) indicated that the high anger-prone group saw more negative consequences for *self and others* than the low anger-prone group as a function of responding to the situations. The low anger-prone group, however, saw more positive consequences for others than the high anger-prone group did. Alternately, women saw more positive consequences for self than men did as a function of responding to the situations ( $M_w = 5.97$  vs.  $M_m = 5.20$ ).

*Self Evaluations: General Responses*

After participants evaluated their responses to the situations, they evaluated their anger behavior "in general" (beyond this particular situation) in terms of the acceptability of feeling anger and behaving angrily, as well as the importance of being effective and appropriate in angry situations. These evaluations were made on a 9-point Likert scale ranging from 1 (not at all acceptable or important) to 9 (very acceptable or important). A 2(anger status)  $\times$  2(gender) MANOVA was used, with the four evaluations as the dependent measures.

The results revealed a main effect for anger status [Rao's  $R_{(4,77)} = 6.16$ ,  $p < .0002$ ], with no effect for gender or interaction. The anger-prone groups differed significantly on the acceptability of angry behavior [ $F_{(1,80)} = 16.96$ ,  $p < .0001$ ], the acceptability of angry feelings [ $F_{(1,80)} = 5.09$ ,  $p < .0268$ ], and the importance of the appropriateness of the anger response [ $F_{(1,80)} = 4.27$ ,  $p < .0420$ ]. The anger-prone groups did not differ on the importance of effectiveness in anger responses. The high anger-prone group was more accepting of angry feelings and behavior than the low anger-prone group; however, the low-anger prone group thought that the appropriateness of the response was more important than high anger individuals did. It is interesting to note that the high-anger group rated effectiveness as more important than appropriateness ( $M_{\text{HiAngApp}} = 7.33$  vs.  $M_{\text{HiAngEff}} = 6.62$ ), while the low-anger group did just the opposite ( $M_{\text{LoAngApp}} = 7.41$  vs.  $M_{\text{LoAngEff}} = 6.71$ ), although the groups differed only on the appropriateness ratings.

**PHASE III: PEER JUDGES' EVALUATIONS OF PARTICIPANTS' RESPONSES****Method***Participants*

A group of 12 men and 13 women who were enrolled in a psychological research course functioned as peer judges and evaluated the responses of the anger-prone participants in Phase II. The peer judges were 88% Caucasian, 8% Asian-American, and 4% African-American. They were between 20 and 22 years old and in their junior or senior year of college. In order to reduce peer judge fatigue and confusion on the evaluations, the peer judges were divided into two groups of 12 and 13 judges (12 judges for effectiveness, appropriateness, and style evaluations and 13 judges for complexity evaluations), balanced for gender.



### *Procedure*

The peer judges' task was to read transcriptions of the anger-provoking situations and the anger-prone participants' responses (both situations and responses were randomly ordered within the transcription packets) and evaluate each response. Judges read typed transcriptions, as the actual "content" of the response was a more valid reflection of "what" was said in terms of the strategies employed, whereas responses from tape recordings were possibly confounded with the "way" a response was expressed. Over several days, each peer judge evaluated a total of 504 responses (84 participants  $\times$  6 responses). The peer judges were informed of neither the anger-proneness nor the gender of the participants. After reading a situation and response, the peers were asked to rate the response for how likely it was that the response was effective and appropriate for handling the situation. Judges used the same 9-point Likert scales as the anger-prone participants. These terms were defined in the same way for the judges as for the anger-prone participants.

Peers also evaluated all of the responses in terms of complexity. This was considered important, as high-anger individuals might be restricted in their behavioral reactions due to a limited repertoire of available responses or the way they "processed" their reactions. Criteria for a complex response included the number of alternative actions, sequence of actions, forethought, and consideration of circumstances that are involved in the response. The peers' final task was to categorize the style (confrontational or nonconfrontational) of each response, as it was possible that high-anger participants tended to use more confrontational than nonconfrontational ways of responding. Confrontational responses included dealing overtly with the provocation by physical contact, arguing or rule-setting, revenge, questioning or explaining, and assertiveness. Nonconfrontational responses included dealing indirectly with the provocation by ignoring it, prevention, leaving the situation, changing the subject, and agreeing or pretending that everything is fine.

## **Results**

### *Reliability*

The quality of the ratings for appropriateness, effectiveness, and complexity was analyzed using an intraclass reliability coefficient (internal consistency) based on 12 judges. Reliability coefficients for the six situations generally ranged from .75 to .90 for effectiveness, and .84 to .92 for appropri-

ateness, except for situation 3, which yielded lower coefficients,  $r = .69$  for effectiveness and  $r = .68$  for appropriateness. The reliability coefficients for complexity ranged from .90 to .94 for the six situations.

Similar to the earlier analyses using participants' ratings, correlations between the peer judges' effectiveness and the appropriateness ratings was conducted. The average correlation between these two measures was .72 ( $.57 < r < .83$ ), indicating a strong relationship among these measures for the judges, similar to the correlations for the participants' ratings. Thus, it appears that judges also were not able to discriminate appropriateness from effectiveness.

### *Analyses of Variance*

Results were analyzed using a 2(anger status)  $\times$  2(gender) MANOVA on the appropriateness and effectiveness variables, which yielded significant effects neither for anger [Rao's  $R_{(2,79)} = 1.87, p < .167$ ] nor for gender [Rao's  $R_{(2,79)} = 2.36, p < .10$ ]. Response style and complexity, which were exploratory measures and somewhat different from one another, were analyzed using univariate analyses. There was no effect for complexity [ $F_{(1,80)} = 1.60, p < .21$ ] or response style [ $F_{(1,80)} = 1.64, p < .20$ ]. These results indicated that peer judges were unable to make any differentiation between the responses of the high and those of the low anger-prone groups on these dimensions based on transcripts of their responses.

## **DISCUSSION**

The purpose of this research was to explore differences between high and low anger-prone individuals in terms of their behavioral responses to six anger-inducing situations, their cognitions and attitudes, and their self-reported social skill and psychopathology. This was carried out within the context of a multidimensional-associationistic framework of anger (Edmondson & Conger, 1996) in which anger antecedents, behavior, cognitions, and experiential components were targeted as important domains for assessment and treatment consideration. Our hypotheses about the anger-prone individual evaluations of their behavior were not supported; however, our hypotheses relating to attitudes, cognitions, self-reported skill, and psychopathology were confirmed.

In terms of the behavioral responses to the six audiotaped situations, neither self-ratings of effectiveness and appropriateness nor judges' ratings of the transcribed responses discriminated between the anger-prone

groups. The six audiotaped situations, considered as anger antecedents, had been previously validated and participants in this research also validated the differential anger intensity of these situations. Despite this, it appears that high and low anger-prone individuals did not respond differently from one another in the way they evaluated their responses, nor did the judges see any differences in their responses. Even though there appeared to be no behavioral differences between the groups in their responding, the high anger-prone group indicated that they "felt" more angry than the low anger-prone group when responding to the situations and they tended to generate more negative emotions to the situational task. The fact that other emotions were generated in response to the anger situations is not unusual. According to S. Vrana (January 1997, personal communication), it is almost impossible to evoke "pure emotions," and typically, negatively valenced emotions elicit other negative emotions (as do positively valenced emotions elicit other positive emotions).

Further, the anger-prone groups differed in their cognitions in terms of the way they viewed the consequences of their behavior. More specifically, high anger-prone individuals saw their behavior as less likely to elicit positive consequences for others and more likely to elicit negative consequences for others and for self than did low anger-prone individuals. Similarly, high anger-prone individuals were more accepting of angry feelings and behavior than low anger-prone individuals. Thus, although the situational responses of the groups did not differ, cognitions and attitudes toward anger as well as their self-reported arousal or experience differed.

Consistent with the other self-report measures, high anger-prone individuals reported that their anger more often got in the way, friends and family saw them as angrier, and they saw themselves as angrier than low anger-prone participants did. Furthermore, while the high-anger participants did not see themselves in great need of help with anger problems, they did indicate that they "might" seek help significantly more than the low anger-prone individuals did. One of the problems encountered with individuals with anger problems is that they do not necessarily feel that they have a problem, although significant others around them do. As such, they are less inclined to refer themselves for help, as often they see their own anger as someone else's problem (Deffenbacher, 1995).

Consistent with the other self-report results, the high anger-prone group evidenced higher scores on the pathology measure. Eight of the nine scales on the Brief Symptom Inventory revealed differences that indicated that the mean for the high anger-prone group fell within the range of psychiatric out- and inpatient norms. Further, scores on the Social Problem Solving Inventory indicated that the high anger-prone group manifested poorer social problem-solving skills, which was contributed to mainly by

their lower scores on the Problem Orientation Scale. This scale measures cognitive, emotional, and behavioral approaches to problem resolution, as opposed to the Problem Solving Skills Scale, which measures the ability to define, generate, and implement solutions. This suggests that although the high anger-prone participants are capable of generating solutions, the implementation of solutions is more likely to be negatively influenced by their cognitions, emotions, and behaviors. This would suggest that high arousal might well have a more pervasive impact on their behavior.

It may seem somewhat puzzling that there were no group differences in the judges' evaluations of the behavioral responses to the situational task, especially when the high anger-prone group reported that they experienced more anger than the low anger-prone group during the task. However, the participants' situational responses were transcribed and presented to peer judges. Transcriptions were used as the content of the strategies were of interest. Thus, the "emotional tone" or the way the responses were expressed was not evident. Edmondson (1996), however, had judges evaluate audiotaped responses to both anger-provoking and non-anger-provoking situations *directly from the audiotapes*. She found that the social competency of the responses, as well as the "emotional tone" of the responses, differed in high and low anger-prone individuals. That is, responses of high anger-prone individuals were evaluated as displaying more negative emotional tone than those of low anger-prone individuals. It may be that while the content of the responses in the transcribed data in this study did not differ, the way in which the responses were expressed (i.e., emotional tone) might differ. Edmondson's finding of somewhat lower skill ratings could, in fact, be the result of the "way" behavior was expressed in terms of negative emotional tone. Comparing transcripts of responses with direct audiotaped responses would aid in resolving this and could address an important issue. If audiotaped, but not transcribed, responses differed between the groups, that would indicate that high anger-prone individuals possess the social knowledge (scripts) necessary to perform competently, but their usage of such scripts may have less positive social stimulus value because the "emotional tone" of their behavior comes across as somewhat negative. The results from the Problem Orientation Scale of the SPSI tends to support the notion that the high anger-prone group possesses problem-solving skills in terms of knowledge based information, but the implementation of these solutions may be adversely affected by their cognitions and emotions. This may be reflected in their behavioral display as "negative emotional tone."

It is also important to note, however, that the high anger-prone group was neither deliberately aroused nor provoked to anger, although they did report feeling more angry than the low anger-prone group. It may be that under low-arousal conditions the two groups do not differ very much in

their actual responses to these situations. The fact that the high anger-prone individuals reported more angry feelings may simply be a consequence of being chronically high in trait anger. That is, they are accurately reporting how they often feel in general. Alternatively, from a Langian perspective (Lang, 1993) the semantic portion of an anger network may have been activated so as to produce a low level of arousal but associated response elements in the network were not fully activated. Vrana and Van Der Bergh (1997) suggest, based on recent results in emotion research, that many semantic stimuli (self-report devices, questions, etc.) have weak activating properties in that these stimuli might activate semantic portions of an emotion network in memory but not induce activation in physiological or response portions of a network. Semantic networks may be more loosely interconnected with physiological elements, and this may account for the less than perfect synchrony among affect, cognitions, and behavior.

The lack of differences in the transcribed responses suggests that, at least for these situations and under low-arousal conditions, high anger-prone individuals possess the requisite social knowledge or strategies for responding to these situations that are indistinguishable from those of the low anger-prone group. Further, the differences between the groups on the Problem Orientation Scale (and the lack of differences on the Problem Solving Scale) suggest that while anger-prone individuals have the skill-based knowledge, their "emotions and cognitions" may get in the way of competent execution of behavior.

Similarly, the high anger-prone group evaluated their own responses in a manner that was comparable to that of the low anger-prone group, suggesting that they also have adequate evaluation skills in terms of judging effectiveness and appropriateness.

In summary, this research indicates that high anger-prone individuals do not differ from low anger-prone individuals in the way they respond to an audiotaped situation task in terms of the *content* of their responses. The lack of differences on this task also suggests that high anger-prone individuals, in this sample, possessed skill knowledge similar to that of the low anger-prone group. However, while they may have the requisite knowledge, they may have problems implementing the solution in the situation. This could suggest that high anger-prone individuals have difficulty regulating their emotions, which in turn may interfere with behavioral implementation.

While the current research was conducted on college students, it is evident that the high anger-prone individuals in this population also tend to have elevated levels of psychopathology. Further, much of the treatment-outcome research has been conducted on this population, which indicates that despite the lack of a DSM category, individuals are receiving therapy

for anger problems. As such, this research would have relevance to this population, as it well may to a clinic population who have anger as part of their clinical picture.

This research also indicates that high anger-prone individuals have elevated levels of psychopathology and cognitions and attitudes that may be more maladaptive than those of low anger-prone individuals. The content of these cognitions and attitudes, while accessible through self-report, may have only a minimal or subtle influence on behavior, unless the individual is provoked. This is similar to fearful or anxious individuals, who may display very little fear unless confronted by a feared object, but who readily have access to semantic knowledge about their fear. These cognitions may well serve to promote and maintain more generalized trait anger. Further, and more speculatively, modification of these cognitions and attitudes would depend on activation and modification of the cognitive elements of the "anger network" as well as possible habituation through exposure. This is similar to the type of emotional processing carried out with individuals who have anxiety problems (Foa & Kozak, 1986). However, further research is needed to test the validity of these speculations.

## REFERENCES

- American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders—Fourth edition*. Washington, DC: American Psychiatric Association.
- Averill, J. R. (1982). *Anger and aggression: An essay on emotion*. New York: Springer-Verlag.
- Berkowitz, L. (1994). Towards a general theory of anger and emotional aggression: Implications of the Cognitive Neoassociationistic perspective for the analysis of anger and other emotions. In R. S. Wyer, Jr., & T. K. Srull (Eds.), *Perspective on anger and emotion: Vol. 6. Advances in social cognition* (pp. 1-46). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Biaggio, M. K., Supplee, K., & Curtis, N. (1981). Reliability and validity of four anger scales. *Journal of Personality Assessment, 45*, 639-648.
- Buss, A. H., & Durkee, A. (1957). An inventory for assessing different kinds of hostility. *Journal of Counseling Psychology, 21*, 343-349.
- Cook, W. W., & Medley, D. M. (1954). Proposed hostility and pharisaic-virtue scales for the MMPI. *Journal of Applied Psychology, 38*, 414-418.
- Conger, J. C., Conger, A. J., Edmonson, C. E., & Tescher, B. (1998). *The relationship of anger to social skills and psychopathology*, Unpublished manuscript. West Lafayette, IN: Purdue University.
- Deffenbacher, J. L. (1993). General anger: Characteristics and clinical implications. *Psicologia Conductual, 1*, 49-67.
- Deffenbacher, J. L. (1994). Anger reduction: Issues, assessment, and intervention strategies. In A. W. Wolfe & T. W. Smith (Eds.), *Anger, hostility, and the heart* (pp. 239-269). Hillsdale, NJ: Erlbaum.
- Deffenbacher, J. L. (1995). Ideal treatment packages for adults with anger disorders. In H. Kassirer (Ed.), *Anger disorders: Definition, diagnosis, and treatment* (pp. 151-172). Washington, DC: Taylor and Francis.
- Deffenbacher, J. L., Oetting, E. R., Thwaites, G. A., Lynch, R. S., Baker, D. A., Stark, R. S., Thacker, S., & Eiswerth-Cox, L. (1996). State-trait anger theory and the utility of the trait anger scale. *Journal of Counseling Psychology, 43*, 131-148.

- Derogatis, L. R., & Spencer, P. M. (1982). *The Brief Symptom Inventory (BSI): Administration and procedures: BSI manual—I*. Baltimore, MD: John Hopkins University School of Medicine, Clinical Psychometric Research, Inc.
- DiGiuseppe, Tafrate, R. C., & Eckhardt, C. I. (1994). Critical issues in the treatment of anger. *Cognitive and Behavioral Practice, 1*, 111-132.
- D'Zurilla, T. J., & Nezu, A. M. (1990). Development and preliminary evaluation of the Social Problem-Solving Inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 2*, 156-163.
- Eckhardt, C. I., & Deffenbacher, J. L. (1995). Diagnosis of anger disorders. In H. Kassonov (Ed.), *Anger disorders: Definition, diagnosis, and treatment* (pp. 27-48). Washington, DC: Taylor and Francis.
- Edmondson, C. B. (1996). *Social skills differences in anger-prone and non-anger-prone individuals*, Unpublished manuscript. West Lafayette, IN: Purdue University.
- Edmondson, C. B., & Conger, J. C. (1996). A review of treatment efficacy for individuals with anger problems: Conceptual, assessment, and methodological issues. *Clinical Psychology Review, 16*, 251-275.
- Eysenck, H. J., & Eysenck, S. B. G. (1975). *Manual of the Eysenck Personality Questionnaire*. London: Hodder and Stroughton.
- Foa, E. B., and Kozak, M. J. (1986). Emotional processing of fear: Exposure to corrective information. *Psychological Bulletin, 99*, 20-35.
- Jacobs, G. A., Latham, L. E., & Brown, M. S. (1988). Test-retest reliability of the state-trait personality inventory and the anger expression scale. *Anxiety Research, 1*, 263-265.
- Lang, P. J. (1993). The network model of emotion: Motivational connections. In R. S. Wyer, Jr., & T. K. Srull (Eds.), *Perspectives on anger and emotion* (pp. 109-134). Hillsdale, NJ: Erlbaum.
- Lang, P. J. (1968). Fear reduction and fear behavior: Problems in treating a construct. In J. M. Schlien (Ed.), *Research in Psychotherapy* (Vol. 3, pp. 90-103). Washington, DC: American Psychological Association.
- McFall, R. M. (1982). A review and reformulation of the concept of social skills. *Behavioral Assessment, 4*, 1-33.
- Milan, M. A., & Kolko, D. J. (1985). Social skills training and complementary strategies in anger control and the treatment of aggressive behavior. In L. L'Abate & M. A. Milan (Eds.), *Handbook of social skills training and research* (pp. 101-135). New York: John Wiley and Sons.
- Novaco, R. W. (1975). *Anger control*. Lexington, MA: D. C. Heath.
- Riggio, R. E. (1989). *Social Skills Inventory manual*. Palo Alto, CA: Consulting Psychologists Press.
- Sharkin, B. S. (1988). The measurement and treatment of client anger in counseling. *Journal of Counseling and Development, 66*, 361-365.
- Spielberger, C. D. (1991). *State-Trait Anger Expression Inventory: Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Tafrate, R. C. (1995). Evaluation of treatment strategies for adult anger disorder. In H. Kassonov (Ed.), *Anger disorders: Definition, diagnosis, and treatment* (pp. 109-128). Washington, DC: Taylor & Francis.
- Tescher, B. F. (1996). *Assessment of anger-prone people: Their anger responses, psychopathology, and social skills*. Unpublished manuscript.
- Vrana, S. R., & Van Der Bergh, O. (1997). *Feeling and thinking: A clinical and psychophysiological analysis*. Unpublished manuscript.
- Warren, R., & McLellarn, R. W. (1982). Systematic desensitization as a treatment for maladaptive anger and aggression: A review. *Psychological Reports, 50*, 1095-1102.
- Wyer, R. S., Jr., & Srull, T. K. (1993). *Perspectives on anger and emotion: Vol. 6. Advances in social cognition*. Hillsdale, NJ: Lawrence Erlbaum Associates.