

DEVELOPING A MEASURE OF PSYCHOLOGICAL REACTANCE

By

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A Thesis Submitted to The Honors College

In Partial Fulfillment of the Bachelor's degree  
With Honors in

Psychology

THE UNIVERSITY OF ARIZONA

May 2008

Approved by:

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## Abstract:

Resistance in therapy is a common occurrence; one aspect of resistance that is receiving increasing attention in the literature is psychological reactance. Brehm (1966) originally conceptualized reactance as a motivation to restore one's sense of freedom through oppositional behavior. Reactance is a client characteristic that may be an important factor in therapeutic outcomes. For example, research shows a relationship between reactance and non-compliance in therapy. Additionally, reactance can be thought of as a state or a trait. Although several trait reactance measures have been proposed, they suffer from questionable psychometric properties. Most studies of reactance have conceptualized reactance as a trait; however, some researchers are attempting to return to Brehm's original concept of reactance as a state. State reactance currently lacks a valid and reliable measurement technique. The goal of this study is to take one step toward creating a valid and reliable measure of state reactance.

## Introduction:

Resistance has been an inherent issue in therapy since its beginning but only recently has it become a focus of systematic measurement for research on therapeutic outcome. One reason for the delay in developing measures of resistance relates to the finding that different psychotherapy techniques produce similar improvements in clients. The dodo bird hypothesis claims that all psychotherapies produce similar results which has been interpreted by some that all therapies work for all clients (Luborsky, Singer, and Luborsky, 1975). However, Beutler et al. (2002, in *Psychotherapy Relationships*) note that although the average effectiveness may be similar across psychotherapies, there are still important differences in treatment effectiveness between different types of clients. In psychotherapy, the characteristics of the client are critical

factors that determine how that individual will respond to therapy (Garfield, 1978; Bergin and Lambert 1978). Thus, there exists individual variation in characteristics such as resistance that may facilitate or hinder the therapeutic process. One client characteristic that may be an important factor in therapeutic outcomes is reactance, a form of resistance that currently lacks a reliable measurement technique.

#### Reactance Theory:

While resistance and reactance are related concepts, the notion of resistance substantially predates reactance. Resistance was originally conceptualized by Sigmund Freud as a therapeutic obstacle that prevented patients from bringing unconscious thoughts into awareness (Baker et al., 2003). Although psychologists were aware of the importance of resistance in therapy early on, the focus of psychoanalysis was on therapist interpretation of resistance rather than on the systematic study of resistance. Furthermore, early cognitive and behavioral therapists viewed resistance as an obstruction to goal achievement rather than a topic worthy of investigation (Beutler et al., 2002). However, recent research has acknowledged that resistance is an important individual characteristic that merits its own examination. In the current conceptualization, resistance refers to the refusal to cooperate or change which may manifest as active opposition to the therapist's influence (Beutler et al., 2001). Resistance is not limited to oppositional behavior; it can appear in a variety of forms. Resistant behavior may emerge as cognitive dissonance, emotional exacerbation, helpless withdrawal, and/or reactance (Beutler et al., 2001). Baker et al. (2003) note that reactance is the component of resistance that is related to interpersonal control and behavioral freedom. Thus, reactance provides a construct in which the oppositional behavior aspect of resistance can be studied.

Reactance theory was first developed by Brehm (1966) as the idea that a person will experience reactance whenever his/her freedom is eliminated or threatened with elimination. The idea that threat to or loss of freedom motivates an individual to restore their sense of freedom through oppositional behavior provides an explanation for some types of resistance encountered in therapy. Reactance theory was further developed by Brehm and Brehm (1981) with the outlining of four principles related to this theory. The first principle states that reactance will be aroused only to the extent that a person believes s/he has control over a potential outcome; thus if a person feels no control over the situation, s/he should not experience reactance. However, an individual who feels no control may engage in some other form of resistance such as complying with resentment or passive resistance (Beutler et al., 2002). The second principle notes that the greater the importance of a freedom to the individual, the greater will be the amount of reactance when that freedom is threatened. Moreover, the third principle states that the amount of reactance aroused is a direct function of the number of freedoms threatened. Thus, the greater the number of freedoms that are threatened, the greater the amount of reactance elicited. Finally, the fourth principle says that freedoms that are threatened by implication will also create reactance. For instance, an employee who is asked to work on a Saturday may experience reactance in response to the implied threat that s/he will be asked to come in on Saturdays regularly if agreeing this one time. Collectively, these principles imply that reactance may depend on situation specific factors.

The theory of reactance deviates from past conceptions of resistance by not viewing resistance as a therapeutic obstacle. Instead, reactance is seen as a normal process that protects an individual's sense of personal freedom; therefore, reactance should be treated as another client characteristic that must be taken into consideration during therapy (Beutler et al., 2002, in

Psychotherapy Relationships). Brehm (1966) made several observations about the therapeutic situation which he asserts will influence the manifestation of reactance. Firstly, psychotherapy is based on the therapist's ability to change the client's behavior, thoughts, and feelings using persuasion and social influence. Secondly, all humans value their freedom of choice and action. Third, people will react negatively to perceived, implied, or actual threats to their freedom. And lastly, the therapist's suggestions or directives may be interpreted as threats to the client's freedom. Therefore, the potential for reactance is inherent in the therapeutic process and must be given sufficient consideration. It is important to note that individuals do not have to be aware of their reactant behavior; reactance may occur completely out of a person's awareness (Brehm, 1966). For instance, a person who is behaving in a reactant way may be surprised if the therapist points out that his/her behavior is oppositional. Reactance provides an important construct for study because it has significant consequences for therapy outcomes.

#### Reactance and non-compliance in therapy:

One important implication of reactance is its association with non-compliance in therapy and health care. The term non-compliance is broadly used to indicate discontinuing treatment, missing appointments, not following recommended advice, not taking prescribed medications, not completing home-based therapeutic regimens, and engaging in risk behaviors (Engle and Arkowitz, 2006). Non-compliance is often elicited under therapeutic conditions that are also likely to create reactance. For example, Patterson and Forgatch (1985) found that the therapist's behavior affected the level of non-compliance. Therapist behaviors of "teach" and "confront" using the Therapist Behavior Code resulted in significant increases in non-compliant behaviors in clients while therapist behaviors of "facilitate" and "support" decreased non-compliance (Patterson and Forgatch, 1985). Furthermore, Jahn and Lichstein (1980) suggest that reactance

may mediate and/or moderate non-compliant behaviors. They showed that highly reactant individuals are more likely to show oppositional behavior during therapy and have poorer outcomes (Jahn and Lichstein, 1980). In addition, Dowd et al. (1988) found that during treatment designed to reduce procrastination, individuals high on reactance measures showed less satisfaction with their effort and had lower expectations for change.

Additional studies support the association between reactance and non-compliance and demonstrate the negative effects of reactance in therapy. Seibel and Dowd (1999) investigated reactance during the client-therapist interaction and documented specific behaviors associated with reactance. They found that reactance was related to behaviors that attempted to control and direct the amount of therapeutic or interpersonal influence (Seibel and Dowd, 1999).

Specifically, highly reactant individuals showed less global improvement during therapy, increased premature termination of treatment, more interpersonal distancing behaviors, and less collaborative relationship behaviors (Seibel and Dowd, 1999). The authors note that their findings are consistent with an earlier study by Dowd and Wallbrown (1993) which showed that highly reactant individuals have personality characteristics such as autonomy and lack of intimacy. In addition, Fogarty (1997) extends reactance theory to explain medical non-compliance as well. The author notes that reactance underlies a major problem of non-compliance in health psychology and behavioral medicine and is responsible for considerable costs to patients (Fogarty, 1997). Clearly, reactance can be detrimental to treatment effectiveness; this has incited research into alternative approaches for treating reactant people.

#### Self-directed, non-directive, and paradoxical therapies:

Reactance may be a moderator that predisposes individuals to respond favorable or negatively to different therapy approaches. And because the impact of reactance on the client-

therapist relationship is of utmost importance to psychotherapy outcomes, several researchers have proposed the use of a different therapeutic approach when treating individuals who may respond in reactant ways. One such approach is the self-directed therapy method. Self-directed therapy is designed to be a non-authoritative, insight-oriented treatment that places the responsibility for change on the client and emphasizes therapist reflection and support (Beutler et al., 1993). In theory, individuals who are highly reactant do not comply in therapy because they feel their freedom is threatened, thus, relinquishing the therapist's control during treatment should increase compliance among highly reactant clients. To test this hypothesis, Beutler et al. (1991) compared improvement in depressive symptoms and resistance potential during three types of therapies: group cognitive therapy, focused expressive psychotherapy, and self-directed therapy. The authors found that highly resistant individuals, as measured by defensiveness, improved more in the supportive, self-directed therapy condition than in the other therapies (Beutler et al., 1991). Moreover, the treatment effects of this study were maintained at a 1-year follow-up (Beutler et al., 1993) and persisted after a cross-validation with an independently derived sample of data (Beutler et al., 1991, in *J. of Psychotherapy Integration*). The finding that reactant clients respond more favorably to specific treatments when systematically assigned to different therapies created a growing interest in therapeutic effectiveness.

A proliferation of studies on directive versus non-directive therapies was initiated on the subject of reactance. Miller et al. (1993) compared directive and non-directive counseling styles to determine their effects on problem drinkers. Habitual drinkers were assigned to one of three counseling groups: direct-confrontational, client-centered, or waiting list (control). In the direct-confrontational group, the interviewer gave direct advice, emphasized the evidence of alcohol problems in the participant, and disagreed with the client's minimization of the problems while

the client-centered group received empathetic responding and reflective listening. The authors found that the directive-confrontational condition elicited more resistance from the participants and predicted poorer outcomes at a 1-year follow-up (Miller et al., 1993). Likewise, Karno et al. (2002) also showed that directive therapy predicts more reactance in problem drinkers.

Additionally, therapist behaviors of interpretation, confrontation, and introduction of topics led to more frequent and larger quantities of drinking in reactant individuals one year later (Karno and Longabaugh, April 2005). Furthermore, therapist confrontation was associated with higher levels of anger and more frequent post-treatment drinking (Karno and Longabaugh, November 2005). Despite these apparently robust findings, Bischoff and Tracey (1991) only found a slight increase in reactance during directive therapy and Arnou et al. (2003) found the opposite results. A review article by Beutler et al. (2001) concludes that the evidence for better outcomes in highly reactant individuals who undergo non-directive therapy is moderately strong.

In addition to non-directive therapy, another treatment approach that has been proposed for use with highly reactant individuals is paradoxical intervention. Paradoxical treatment is based on the idea that facilitating change in the client can be accomplished by directing the client to behave in ways that seem counter to the therapeutic goals (Rohrbaugh et al., 1981; Tennen et al., 1981). This type of approach is thought to be especially appropriate for highly reactant people who, in theory, will act in opposition to the therapist's directives and thereby induce beneficial changes in their behavior. Gann (1999) provides evidence that therapists who use a paradoxical approach do elicit more reactant feelings in clients and these therapists are also rated as lower in expertness and trustworthiness which may motivate clients to not follow treatment advice. Several studies have been conducted to test the assumption that paradoxical interventions will lead to increased compliance among reactant individuals. Shoham-Salomon et

al. (1989) assigned procrastinating college students to either paradoxical or self-control treatments and found that highly reactant students benefited more from the paradoxical treatment. Furthermore, in a study of clients with sleep onset delay problems, Horvath and Goheen (1990) demonstrated that although their high and low reactance groups did not differ in initial treatment benefit, the higher reactant clients in the paradoxical condition did continue to improve even after the active treatment ended. However, others have not found the predicted relationship between reactance and paradoxical interventions (Swoboda et al., 1990).

In conclusion, reactance appears to be related to non-compliance in therapy, a pervasive problem that justifies the amount of attention the concepts of resistance and reactance have received in the literature. Moreover, highly reactant individuals for the most part seem to benefit from self-directed, non-directive, and paradoxical treatments aimed at minimizing or utilizing reactance in therapy. In addition, there exist diverging opinions as to whether reactance should be viewed as a state or a trait which will be discussed presently.

#### State vs. Trait:

Brehm (1966) defined reactance as a motivational state directed toward the re-establishment of threatened or eliminated freedom. Although Brehm (1966) originally conceived reactance as a situation-specific construct, the majority of research on this topic has treated reactance as a stable trait that can be measured across situations. The justification for re-conceptualizing reactance as a trait has been suggested to come from Brehm's own work. Brehm (1966) noted that people may differ in their levels of reactance. Furthermore, Brehm and Brehm (1981) mention that if a particular personality trait differs in its perception of freedoms from other personalities, then this difference can be expected to influence the amount of reactance aroused. Thus, different personalities may show different levels of reactance. Many researchers

have interpreted reactance as a stable and measurable characteristic which lead to the creation of a number of questionnaires designed to measure reactance as a trait. The majority of studies on reactance have used these trait-based measures and several authors have advocated the conceptualization of reactance as an enduring personality trait (Dowd et al., 1991; Dowd and Wallbrown, 1993; Dowd et al., 1994; Hong and Page, 1989; Hong et al., 1994; Hong and Faedda, 1996). However, the reliability and validity of many of these trait questionnaires has been brought into question and many authors now remark that trait reactance is only one conceptualization of Brehm's theory.

Despite the acknowledgement of many researchers that trait reactance is only a part of the concept of reactance, almost no studies have attempted to measure reactance as a state. One of the few studies that attempted to measure state reactance was conducted by Shoham-Salomon et al. (1989). In a study on college procrastination, they investigated the hypothesis that highly reactant individuals would respond better to a defiance-based paradoxical intervention than to compliance-based instructions (Shoham-Salomon et al., 1989). The authors manipulated client reactance by letting the client choose between an attractive and an unattractive treatment method (all clients requested the more attractive option). Half of the clients were given their treatment of choice (non-reactant condition) while the other half were told their treatment of choice was not available and thus they had to undergo the unattractive therapy (reactant condition). After undergoing either paradoxical or non-paradoxical treatment, instead of measuring reactance with a trait measure Shoham-Salomon et al. (1989) measured reactance using a rating of the client's voice tone when responding to a reactance-provoking question. They found that client reactance was associated with better responses to the paradoxical treatment (Shoham-Salomon et al., 1989). This study exemplifies that state reactance can be measured, but the methodology may

prove more difficult than paper-and-pencil measures. The commonly used methods used to measure reactance will be discussed in turn.

### Reactance Measures:

Reactance has often been assessed using post-hoc measures of non-compliance in therapy; however, other measures of reactance have been developed. Measures of state reactance are less abundant than trait measures, but some state measures do exist. As was noted earlier, Shoham-Salomon et al. (1989) used voice tone to measure reactance, but this method is cumbersome and unlikely to be widely adopted by researchers. Gann (1999) used the articulated thoughts in simulated situations method (ATSS) created by Davison et al. (1997) to measure state reactance. ATSS involves the participant listening to a previously recorded reactant situation and verbalizing their thoughts out-loud which are subsequently coded (Gann, 1999). Several paper-based measures of state reactance exist, such as the Patient Resistance Scale created by Morgan, Luborsky, Crits-Christoph, Curtis, and Salomon (1982). The PRS is a seven-item scale that measures client defensiveness during therapy; however, this measure was unable to show a correlation with treatment outcome (Beutler et al., 2002). Schuller, Crits-Christoph, and Connolly (1991) modified the PRS to create the Resistance Scale which identified in-session behaviors related to resistance. Similarly, the Client Resistance Scale also measures in-therapy resistant behaviors and was able to demonstrate a relationship with treatment outcome (Mahalik, 1994). While the Resistance Scale and the Client Resistance Scale are able to capture a state measure of resistance, both of these scales can only be used after therapy begins. Trait-based measures offer the advantage of being able to be used to predict future reactant behavior.

An interest in using reactance to predict therapeutic outcome led to the development of several paper-and-pencil trait reactance measures; however, psychometric studies on these trait

scales demonstrate a lack of reliability and validity. One of the first measures of trait reactance was the Questionnaire for Measuring Psychological Reactance (QMPR) developed initially by Merz in 1983 and translated into English by Dowd et al. (1991). Donnell et al. (2001) analyzed the psychometric properties of the QMPR; using factor analysis, they demonstrated that the QMPR had three underlying factors but the questionnaire produced unreliable estimates for each factor. Donnell et al. (2001) concluded that the QMPR's psychometric properties were questionable. Hong and Ostini (1989) also found Merz's scale to be factorially unstable. An additional trait measure of reactance is the Therapeutic Reactance Scale (TRS) created by Dowd et al. (1991). Although some researchers report adequate reliability and validity for this scale (Dowd et al., 1991; Dowd and Wallbrown, 1993; Dowd et al., 1994; Baker et al., 2003), others argue that the factor structure of the TRS is inadequate (Buboltz et al., 2002). Furthermore, Dowd et al. (1994) found concurrent validity between the TRS and the QMPR, the latter of which has already been brought into question regarding its reliability and validity.

In another effort to create a reliable and valid measure of state reactance, Hong and Page (1989) developed Hong's Psychological Reactance Scale (HPRS) which suffers from the same ambiguous interpretation of its psychometric properties as the other scales. Evidence for the reliability and validity of the scale was provided by several researchers (Hong and Page, 1989; Hong, 1992; Hong and Faedda, 1996; Shen and Dillard, 2005); however, Thomas et al. (2001) conducted a factor analysis in which they found the reliability estimates for several subscales to be inadequate. They conclude that the HPRS should be used with caution, if at all (Thomas et al., 2001; Jonason and Knowles, 2006; Jonason, 2007). In addition to the scales mentioned, the Systematic Treatment Selection, Clinician Rating Form (STS-CRF) developed by Fisher, Beutler, and Williams (1999) also demonstrates an attempt to create a trait measure of reactance.

This scale relies on clinician ratings of the client's past behaviors as an indicator of future reactance and is able to predict client response (Beutler et al., 2002). Additionally, the Client Resistance Scale mentioned above as a state measure of reactance also includes five subscales that can be used to measure enduring, trait-related reactance. However there is less research on the psychometric properties of this trait scale. And finally, the most common method for measuring trait reactance is to use several subscales from personality questionnaires that are thought to be related to reactance (Beutler et al., 2002). For example, the Resistance Potential Scale created by Beutler et al. (1991) is a combination of the anxiety and sociability scales from the original MMPI; however, this scale showed poor internal consistency (Baker et al., 2003).

Although many different reactance measures exist, none of them is definitively the most appropriate to use. State measures are problematic because they require difficult coding mechanisms such as voice-tone coding or they require coding of therapy interactions which does not allow a priori predictions on how individuals will react in different therapies. Trait measures are predictive of future reactant behaviors, but these measures suffer from limitations related to their psychometric properties. Furthermore, Shoham, Trost, and Rohrbaugh (2004) have doubts regarding the validity of current measures of trait reactance which they consider a detour from Brehm's original conception of reactance as a state. They assert that reactance may not be a stable trait and what is currently being measured as trait reactance may not even represent the actual construct of reactance (Shoham, Trost, and Rohrbaugh, 2004). However, unless an uncomplicated method for measuring state reactance is found, it is likely that research on reactance as a state will continue to idle. The purpose of the present paper is to take one step toward creating an easy-to-administer state measure of reactance that can be used to test theories related to this important construct.

### Creating a State Measure of Reactance

In light of the evidence that a valid, reliable, and easy-to-administer measure of state reactance does not yet exist, the current study attempted to create a paper-based measure of reactance to remedy this problem. Our scale is based on Brehm's original conception of reactance as a situation-specific state. For our purposes, state reactance was defined as an emotional state or condition that consists of subjective feelings such as hostility, resentment, defensiveness, and irritability. Furthermore, state reactance is assumed to vary in intensity and fluctuate over time, dependent on the situation. State reactance was chosen over trait reactance because of the problems associated with trait measures. For instance, self-report trait reactance is problematic since, as mentioned before, many individuals are unaware when they are behaving in a reactant manner so asking a highly reactant person whether s/he often behaves reactantly may be inappropriate. Our scale attempted to resolve this problem by asking individuals how they would feel in specific situations rather than how they always behave. By asking the person how they would feel in a particular situation, we can capture a measure of reactance as the level of emotional arousal indicated by the person's responses on a scale. This method does not require a person to judge whether or not s/he is reactant. The format of our questionnaire was developed from two studies that addressed the psychometric properties of our scale.

#### Study 1:

Methods: On the first version of the questionnaire, participants were instructed to describe in written format, a situation in which they were treated unfairly like they had no choice in the matter, making them feel like their personal freedoms were being limited (for a copy of the questionnaire, see appendix A). After writing this situation in the space provided, participants were then instructed to circle on the list of adjectives provided, those adjectives that indicated

how they felt during or immediately after the situation they described. In addition, the participants were told that they could write any other adjectives that came to mind while completing this exercise.

The adjective list for this questionnaire consisted of items that were predicted to be associated with reactance, such as oppositional, irritable, resentful, defensive, and argumentative (for a complete list of the adjectives, see appendix A). Other adjectives that should not be associated with reactance were included to ensure that participants who were writing about reactant situations would not choose adjectives unrelated to reactance. This questionnaire was administered to people from the community in jury duty waiting rooms. Potential jurors were selected for this study because they provide a pre-selected random sample of the community and because a short questionnaire can be administered to large groups of people at time in the jury waiting room. Questionnaires were administered while jurors waited to be called to trial. A total of 234 participants completed this questionnaire and were included in data analysis; 80 were male and 154 were female. All participants were told that the survey was completely voluntary. This study received IRB approval prior to its onset.

Results: The reliability of the adjective scale was obtained using SPSS. First, the reactant situations written by the participants were scrutinized and individuals who did not follow the directions were omitted from data analysis. For example, eleven participants reported that they could not think of a situation in which they were treated unfairly and five participants wrote situations or circled adjectives but did not do both. Accordingly, 234 questionnaires were analyzed. Combinations of the scale items were entered into analysis until the highest Cronbach's alpha possible was obtained on a 19-item scale. Then, the item-total correlations for all adjectives were obtained. Adjectives with item-total correlations of less than 0.30 were

removed from the scale, resulting in a 14 item scale with a Cronbach’s alpha of 0.77. The means and standard deviations of the 14 adjectives are listed in table 1; for the item-total correlations, see table 2. As predicted, the adjectives thought to be related to reactance were the highest endorsed items when people wrote about reactant situations. Furthermore, adjectives that should not be related to reactance such as calm, sympathetic, and easy-going were not frequently endorsed by participants. The adjectives that were found to have item-total correlations above 0.30 were subsequently used in the second study.

**Item Statistics**

	Mean	Std. Deviation	N
resentful	.6325	.48316	234
irritable	.5342	.49990	234
defensive	.5171	.50078	234
bitter	.4615	.49959	234
argumentative	.4060	.49213	234
hostile	.3846	.48755	234
defiant	.3291	.47088	234
resistant	.2564	.43759	234
spiteful	.2479	.43270	234
rebellious	.2436	.43017	234
oppositional	.2265	.41946	234
aggressive	.2094	.40775	234
stubborn	.2051	.40466	234
moody	.2009	.40150	234

Table 1: N, mean, and standard deviation for the 14 reactant adjectives

**Item-Total Statistics**

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
resentful	4.2222	9.255	.301	.220	.769
irritable	4.3205	8.794	.449	.240	.755
defensive	4.3376	9.014	.369	.186	.763
bitter	4.3932	9.192	.308	.208	.769
argumentative	4.4487	8.721	.485	.295	.751
hostile	4.4701	8.671	.510	.325	.749
defiant	4.5256	9.092	.373	.214	.762
resistant	4.5983	9.083	.417	.261	.758
spiteful	4.6068	9.235	.362	.220	.763
rebellious	4.6111	9.046	.442	.255	.756
oppositional	4.6282	9.102	.433	.275	.757
aggressive	4.6453	9.346	.346	.244	.765
stubborn	4.6496	9.447	.306	.204	.768
moody	4.6538	9.403	.329	.189	.766

Table 2: Item-total correlations for the 14 reactant adjectives

Study 2:

Methods: The second version of the questionnaire was created by taking the 14 adjectives from the first study and adding a Likert scale to each item. Furthermore, the reactant situations were standardized; instead of asking participants to write a time when they were treated unfairly, they were given prewritten reactant situations. Participants read two reactant situations and two non-reactant situations and then were asked to imagine themselves in that situation and circle the number on the Likert scale that corresponds to how they would feel if they had experienced that event. (For a copy of the questionnaire see appendix B; the prewritten situations are listed in appendix C.) The questionnaire consisted of the 14 items related to reactance as well as 14 items that were determined from the first study to be unrelated to reactance which acted as fillers. Participants were asked how they would feel (i.e. oppositional, easy-going, etc.) for each situation on the following four-point scale: (1) Not at all; (2) Just a little; (3) Quite a bit; (4) Very Much. In addition, data regarding each participant's age, gender, and ethnicity was collected.

In addition to the reactance questionnaires, Spielberger et al.'s (1983) State/Trait Anger Scale was included as well. This measure consists of two separate state and trait anger scales. For the trait scale, participants are asked to rate how they generally feel while the state scale asked them to rate how they feel right now. Each scale has ten items which are rated on a four-point Likert scale. The decision to include Spielberger's State/Trait Anger Scale is based on work by Dillard and Shen (2005) who proposed that reactance is actually composed of state anger and negative cognitions. Furthermore, Quick and Stephenson (2007) provide evidence that state anger is an integral component of reactance, thus the State/Trait Anger Scale is included to determine if our scale has any relationship with this construct. Participants included 242 undergraduate students (96 males; 146 females) completing the requirements for the introduction

to psychology course at the University of Arizona. Potential jurors were not used in the second study because it was decided that the questionnaire packet would take more time than we were allotted to use with the jury participants. Participation was voluntary and this study was conducted under IRB approval.

Results: Data from all 242 participants was used. Only one participant did not complete the State/Trait Anger Scale; everyone else completed all portions of the questionnaire. Analysis was conducted with only the 14 variables determined from the first study to be the most reliable; filler items were omitted from analysis. First, Cronbach's alpha was computed for each of the four situations to determine the new scale's reliability. All four situations had excellent reliability for the 14 reactant items ranging from 0.89 to 0.92 (table 3 shows Cronbach's alpha, the mean, standard deviation, and number of items for each of the four situations). Furthermore, Pearson's correlation coefficient showed that the two reactant situations (A and B) were highly correlated ( $r = 0.59$ ,  $N = 241$ ,  $p < 0.01$ ) and the two non-reactant situations were also correlated ( $r = 0.47$ ,  $N = 241$ ,  $p < 0.01$ ). But the reactant and non-reactant situations were not highly correlated with each other which demonstrates that our reactant and non-reactant situations were adequately dissimilar.

	Cronbach's Alpha	Mean	Standard deviation	N
Reactant situation A	0.92	38.36	8.98	14
Reactant situation B	0.92	37.63	8.65	14
Non-reactant situation C	0.89	16.23	3.93	14
Non-reactant situation D	0.90	16.81	4.45	14

Table 3: Cronbach's alpha, mean, standard deviation, and number of items for each situation

For the purpose of analysis, a total reactance score was obtained by adding together the points on the Likert scale for each reactant situation; this will be referred to as the participant's reactance score. The Pearson correlation coefficient was used for subsequent analysis. The results show that there was a significant positive correlation between participant's reactance scores and the trait measure of anger ( $r = 0.40$ ,  $n = 238$ ,  $p < 0.01$ ). Additionally, there was a significant positive correlation between reactance score and state anger, although it was less robust ( $r = 0.16$ ,  $n = 239$ ,  $p < 0.01$ ). Thus, people who reported more reactant feelings during our questionnaire also reported more trait and state anger which provides some validity for our scale. These results were found using a total reactance score that combined the results from the two separate reactant situations (A and B). However, even when the reactant situations are analyzed separately, the results still persist. The correlation between reactant situation A and trait anger was significant ( $r = 0.35$ ,  $N = 238$ ,  $p < 0.01$ ) and was identical to the correlation between reactant situation B and trait anger ( $r = 0.35$ ,  $N = 238$ ,  $p < 0.01$ ). Both reactant situations are identical in their correlation to trait anger which indicates that neither situation is methodologically weaker.

In addition, data regarding the participants' age, gender, and ethnicity was also collected. Ethnicity was not analyzed because of the lack of significant numbers of minorities in the data set. Furthermore, there was no significant difference between reactance score and age; however, there was a non-significant difference in the predicted direction. The data shows that older participants reported less reactant feelings than younger participants, although, as mentioned earlier, this result was not significant. Moreover, a difference was found between males and females. An independent samples t-test showed that males were more likely to report a higher level of trait anger than females ( $t(235) = 2.96$ ,  $p < 0.005$ ). This relationship was not found for gender and reactance score. Additionally, it could be argued that because the first study used

potential jurors as participants, there might be fundamental differences in the results when compared to the second study which used college students. However, both college students and potential jurors showed adequate reliability scores on the two measures of reactance, indicating that the scale's items are generalizable to both groups.

### Discussion:

The goal of the present study was to develop a valid and reliable measure of state reactance. The results of study 1 led to the creation of the reactance scale based on using an adjective checklist to assess individuals' feelings during reactant situations. The 14 adjectives extracted from the first scale had a high internal consistency ( $\alpha = 0.77$ ). As expected, the adjectives thought to be related to reactance were endorsed more often than non-reactant items. The endorsement of items such as defensive, oppositional, aggressive, and resentful when reading reactant situations is consistent with the finding by Dowd and Wallbrown (1993) that reactant individuals show a personality pattern characterized by defensiveness, aggressiveness, dominance, autonomy, and non-affiliative behavior. Additionally, reactant individuals are more likely to resist rules and regulations and are more inclined to express strong feelings and emotions (Dowd et al., 1994); therefore, we can expect that individuals who experience reactance will endorse items like defiant and resistant which was demonstrated in these studies. The outcome of the first study resulted in the validation of our reactant adjectives by showing that these adjectives reliably correspond to how individuals feel during reactant situations.

The fourteen items from study 1 were then used to construct a new questionnaire that consisted of a Likert scale and four situations: two reactant and two non-reactant situations. The new scale demonstrated excellent reliability ( $\alpha = 0.89$  to  $0.92$ ) for each of the situations. Furthermore, the results of the second study show that people who reported greater reactance

while reading reactant situations also reported greater anger on both the state and trait anger questionnaires. The relationship between anger and reactance has been reported by several authors. Quick and Stephenson (2007) note that early work associating reactance with hostility and aggression led to the proposal to use anger as an index of reactance. Our results are consistent with this view, since adjectives such as hostile, irritable, and spiteful were highly endorsed for the reactant situations. Anger is thought to be an integral component of reactance (Dillard and Shen, 2005); therefore, our finding of a positive correlation between anger and reactance provides some validity for this scale. However, additional studies on the validity of this scale need to be conducted in the future.

In addition, the second study was designed to analyze ethnicity, gender, and age differences in reactant and non-reactant individuals. Many therapists have come to realize that multicultural differences are an important client factor that can influence therapeutic outcome (Beutler et al., 1991). Furthermore, cultural differences may be apparent in the level of reactance individuals experience. For example, Seemann et al. (2004) found that African American clients reported higher reactance scores than Caucasians. The authors suggest that African Americans may have a differential opportunity to engage in freedom behaviors (Seemann et al., 2004). For example, discrimination may have led to an environment that socialized African Americans to assert their freedom through reactance. Additionally, Woller et al. (2007) found that African Americans, Asians, and Hispanics showed greater total reactance as well as higher behavioral and verbal reactance than Caucasians and Native Americans. However, there were not enough minority participants in the current study to conduct an analysis of ethnicity effects on reactance.

Additionally, gender differences in the level of reactance have also been proposed to exist. Some studies have found that males report higher levels of reactance than females

(Seemann et al., 2004; Woller et al., 2007) while other studies have failed to find gender differences on measures of reactance (Hong et al., 1994). In our study, we found greater reported trait anger among males; however, we did not find a relationship between gender and reactance. Conversely, other researchers have looked at the effect of age on reactance scores. Hong et al. (1994) found that reported reactance decreased in older adults which may be the result of greater restraints placed on younger people. Similarly in our study, we found that older participants had lower reactance scores than younger participants. However, these results were not significant which is likely due to the fact that we tested college students whose range of ages is not representative of the general population. Additionally, the results of Woller et al.'s (2007) study indicate that there may be a curvilinear relationship between age and reactance. They found that the younger and older participants showed greater reactance than the middle-aged ones. Our study had too few older participants to demonstrate this effect.

In conclusion, the current study has been able to demonstrate the internal reliability of our scale. Additionally, this study has also provided partial validity of our measure by showing its relationship with anger measures. However, anger is only one component of reactance; therefore, additional measures of validity will have to be used in the future. Furthermore, although we intended to treat reactance as a situation-specific state on our reactance measure, this questionnaire could also be interpreted as lending support to the conceptualization of reactance as a trait. For example, people who are highly reactant in general (indicating a trait) will be more likely to choose the reactant adjectives and would receive higher scores on our measure. Likewise, a person who is reactant only in certain situations (state) may also score high on this measure. Thus, further work is necessary to develop a method to tease apart these two constructs. The advantage of our scale is based on the idea that people who would not report

themselves as being highly reactant on the usual trait-measures may nevertheless indicate reactant-feelings when reading unfair situations on our scale. Thus our measure is more likely to uncover reactant feelings without having to ask the person whether or not they are reactant.

Future Analysis:

This study was the first step toward creating a valid and reliable measure of reactance; however, this scale needs additional reliability and validity tests before it can be used to make predictions about reactant individuals. The scale demonstrates excellent internal consistency based on Cronbach's alpha and the inter-item correlations; on the other hand, the test-retest reliability of this questionnaire has not been analyzed. This questionnaire should be administered to the same group of people on two different occasions to determine the extent to which the scores on this measure correlate with each other. Furthermore, the convergent validity of this scale should also be analyzed further. The results reported in this paper demonstrate that our scale of reactance has a positive relationship with an anger measure which is one aspect of reactance. Future studies need to determine the extent to which this scale is related to other components of reactance such as defensiveness and autonomy. Additionally, this scale as written has only reactant and non-reactant situations. Since reactant situations are inherently negative, participants may be simply choosing the negative adjectives in response to reading a negative situation. A non-reactant negative situation needs to be added to the questionnaire. Participants would be predicted to choose more reactant adjectives for the reactant situations than for the non-reactant negative situations. Additional work is still needed before this questionnaire can be used to predict therapeutic outcome in reactant individuals.

Appendix A: Study 1 questionnaire

Date: \_\_\_\_\_  
Age: \_\_\_\_\_  
Sex: \_\_\_\_\_  
Ethnicity: \_\_\_\_\_

**Reactions to Unfair Situations**

Think of a recent incident, preferably within the last two years, in which you felt that either a specific person at work or in your personal life **was bossing you around unfairly. In this incident, the person was treating you as if you had no choice in the matter, making you feel like they were really limiting your personal freedom.** Below, please describe the situation which is either work related in which the person was an employer, supervisor, or coworker, or a personal situation involving a parent, friend, family member, spouse or partner.

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Note: If you need additional space, please continue on the back of this form.

On the following list of adjectives, circle those that relate to how you felt during or right after the event that you described above. If the event ended positively, only circle adjectives that describe how you felt *before the problem was solved*. In the space labeled "other," feel free to write any other adjectives that came to mind while going through this exercise.

- |                  |                   |
|------------------|-------------------|
| 1. sensitive     | 23. moody         |
| 2. resentful     | 24. spiteful      |
| 3. sympathetic   | 25. attentive     |
| 4. defiant       | 26. easy-going    |
| 5. challenging   | 27. inhibited     |
| 6. shy           | 28. indifferent   |
| 7. emotional     | 29. dissatisfied  |
| 8. hostile       | 30. argumentative |
| 9. reserved      | 31. irritable     |
| 10. calm         | 32. anxious       |
| 11. warm         | 33. alert         |
| 12. stable       | 34. determined    |
| 13. compliant    | 35. bitter        |
| 14. aloof        | 36. defensive     |
| 15. curious      | 37. confident     |
| 16. oppositional | 38. stubborn      |
| 17. unemotional  | 39. resistant     |
| 18. quiet        | 40. restless      |
| 19. intimidated  | 41. aggressive    |
| 20. impatient    | 42. unkind        |
| 21. guilty       | 43. other: _____  |
| 22. rebellious   |                   |

Appendix B: Study 2 questionnaire

Date: \_\_\_\_\_  
 Age: \_\_\_\_\_  
 Sex: \_\_\_\_\_  
 Ethnicity: \_\_\_\_\_

**Reactions to Unfair Situations**

Please read the following scenario and on the list of adjectives, circle the number that relates to how you would feel if you had experienced the event described below.

Scenario A: My co-worker/employer/professor is very critical of me. This person makes negative comments about everything I do and is never satisfied with my performance. This person is very controlling and makes me do an excessive amount of work without giving me any choice.

If you were in this situation, how would you feel? (Please circle the appropriate number)

	Not at all	Just a little	Quite a bit	Very much
Oppositional	1	2	3	4
Resentful	1	2	3	4
Alert	1	2	3	4
Defensive	1	2	3	4
Hostile	1	2	3	4
Curious	1	2	3	4
Aggressive	1	2	3	4
Confident	1	2	3	4
Moody	1	2	3	4
Stable	1	2	3	4
Reserved	1	2	3	4
Sympathetic	1	2	3	4

Spiteful	1	2	3	4
Attentive	1	2	3	4
Resistant	1	2	3	4
Bitter	1	2	3	4
Calm	1	2	3	4
Easy-going	1	2	3	4
Unemotional	1	2	3	4
Argumentative	1	2	3	4
Stubborn	1	2	3	4
Warm	1	2	3	4
Shy	1	2	3	4
Indifferent	1	2	3	4
Irritable	1	2	3	4
Defiant	1	2	3	4
Aloof	1	2	3	4
Rebellious	1	2	3	4

How relevant was this situation to your life (i.e. have you ever experienced a situation like this one)?

1	2	3	4
Completely irrelevant	Not very relevant	Somewhat relevant	Very relevant

## Appendix C: Reactant (A and B) and non-reactant (C and D) scenarios

Scenario A: My co-worker/employer/professor is very critical of me. This person makes negative comments about everything I do and is never satisfied with my performance. This person is very controlling and makes me do an excessive amount of work without giving me any choice.

Scenario B: My friend/significant other/parent is always giving me advice and telling me how to live my life. If I don't follow the advice, this person gets upset with me. This person makes me feel like I don't have the good sense to make my own choices and like I don't have the freedom to run my own life the way I want to.

Scenario C: My co-worker/employer/professor really looks out for me. This person often comments on my performance and makes suggestions that might help me do a better job, but is ok with it if I don't follow the suggestions. This person encourages me to try new ideas and supports my choices.

Scenario D: My friend/significant other/parent cares about me a great deal and wants me to be happy. This friend often makes suggestions which he/she thinks will help me make better choices and improve my life, but is very accepting and supportive if I don't follow them. This person is very considerate of me and respects my ability to make my own choices, without judging me if I make a mistake.

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