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# Trait Aggressiveness and Situational Provocation: A Test of the Traits as Situational Sensitivities (TASS) Model

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*In this article, the authors propose and test an interactionist model of personality functioning. The model maintains that many traits function in a threshold-like manner, such that less situational strength is needed to evoke a trait-relevant response in people who are high on the trait than in those who are low on the trait. Because of these different sensitivities, people who are high on a trait are more reactive to moderate provocation than are those who are low on a trait, but the opposite is true when strong provocation is compared to moderate provocation. Three studies are reported showing how the model can be used to understand the nature of aggression.*

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**Keywords:** *person-situation interactions; trait aggressiveness; situational provocation; hostility*

**W**hy do people behave the way they do? Laypeople have pondered this question since time immemorial, and psychologists have systematically researched this question for more than 100 years. Although differences in emphasis remain, there is a broad consensus that behavior is a dual function of a person's dispositional properties and the situational constraints the person confronts. In Lewin's (1935) words, behavior is a function of the person and the environment:  $B = f(P,E)$ .

Building on this consensus, we introduce a model of personality functioning that emphasizes the inseparable interdependence between traits and situations. According to our "traits as situational sensitivities" model (TASS), many traits function in a threshold-like manner, representing sensitivities to situational provocation. A competitive person for example is one who becomes cutthroat in situations that most people would view as only minimally competitive (e.g., a game of croquet with one's

nieces and nephews), and a sentimental person is one who becomes maudlin in situations other people find only mildly affecting (e.g., viewing a formulaic romantic movie). From this perspective, the very meaning of a trait is tied to a relevant situational context (Kammrath, Mendoza-Denton, & Mischel, 2005). People who score high on a trait manifest a trait-relevant behavior with little situational provocation; those who score low on a trait exhibit the relevant behavior only after a great deal of situational provocation.

We are not the first, of course, to highlight the interdependence between traits and situations. For example, Allport (1966) once remarked, "I do not perspire except in the heat, nor shiver unless in the cold; but the outside temperature is not the mechanism of perspiring or shivering. My capacities and tendencies lie within" (p. 2). Implicitly, Allport was arguing that internal dispositions manifest themselves in some situations but not in others (see also Bowers, 1973; Epstein, 1979). Murray's (1938) concept of "press" makes a similar point, noting that a given behavior can either be pushed from within or pulled from without. Our approach is unique by calling attention to the fact that many traits represent different sensitivities to situational strength, such that less situational strength (or press) is needed to evoke a trait-relevant

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response in people who are high on the trait than in those who are low on the trait.

#### *Which Situations?*

Through its conception of traits as sensitivities to situational strength, the TASS model explains when individual differences will matter most. Namely, traits will have their greatest predictive ability when the situation provides just enough provocation to evoke trait-relevant reactions in those who score high on a trait but not in those who score low. This assumption builds on prior theoretical work by Snyder and Ickes (1985). In a highly influential analysis, these authors distinguished strong situations (which provide clear guidelines for behavior) from weak situations (which are more unstructured and ambiguous) (see also Mischel, 1977). To illustrate, a funeral is a strong situation, as people are expected to dress in black and sit quietly during the service, whereas a sporting event is a weak situation, as one can sit quietly and watch the game or paint one's face and shout at the top of one's lungs whenever the home team scores a goal.

Although Snyder and Ickes (1985; Ickes, 1982) suggested that traits have their strongest impact in weak situations, the TASS model suggests that traits will be most apparent in situations of medium strength. As we use the term, *medium strength* situations present just enough situational provocation to evoke a trait-relevant response in some individuals (those who are high on the trait) but not in others (those who are low on the trait). For example, social anxiety will be more predictive of behavior in situations that are mildly anxiety provoking (e.g., meeting someone for the first time) than in weak situations (e.g., spending time with friends) or strong ones (e.g., giving a speech in front of a large audience).

#### APPLICATIONS TO AGGRESSION

Aggression often arises in response to situational provocation, so it provides a particularly fruitful venue for testing the TASS model. To illustrate, consider what it means to say that someone is an aggressive person. Commonly, this means the person reacts aggressively to a small affront. In contrast, a laidback, easygoing person requires a higher level of situational provocation before becoming angry. In more formal terms, we can say that trait aggressiveness (TA) reflects a heightened sensitivity to situational provocation, such that less in the way of provocation is needed to evoke aggression-relevant reactions in a person who is high in TA than in a person who is low in TA. As a consequence of these different sensitivities, TA will play its most important role in situations of moderate provocation (i.e., ones that are sufficient to produce anger and aggression in people with a predisposition to behave in this

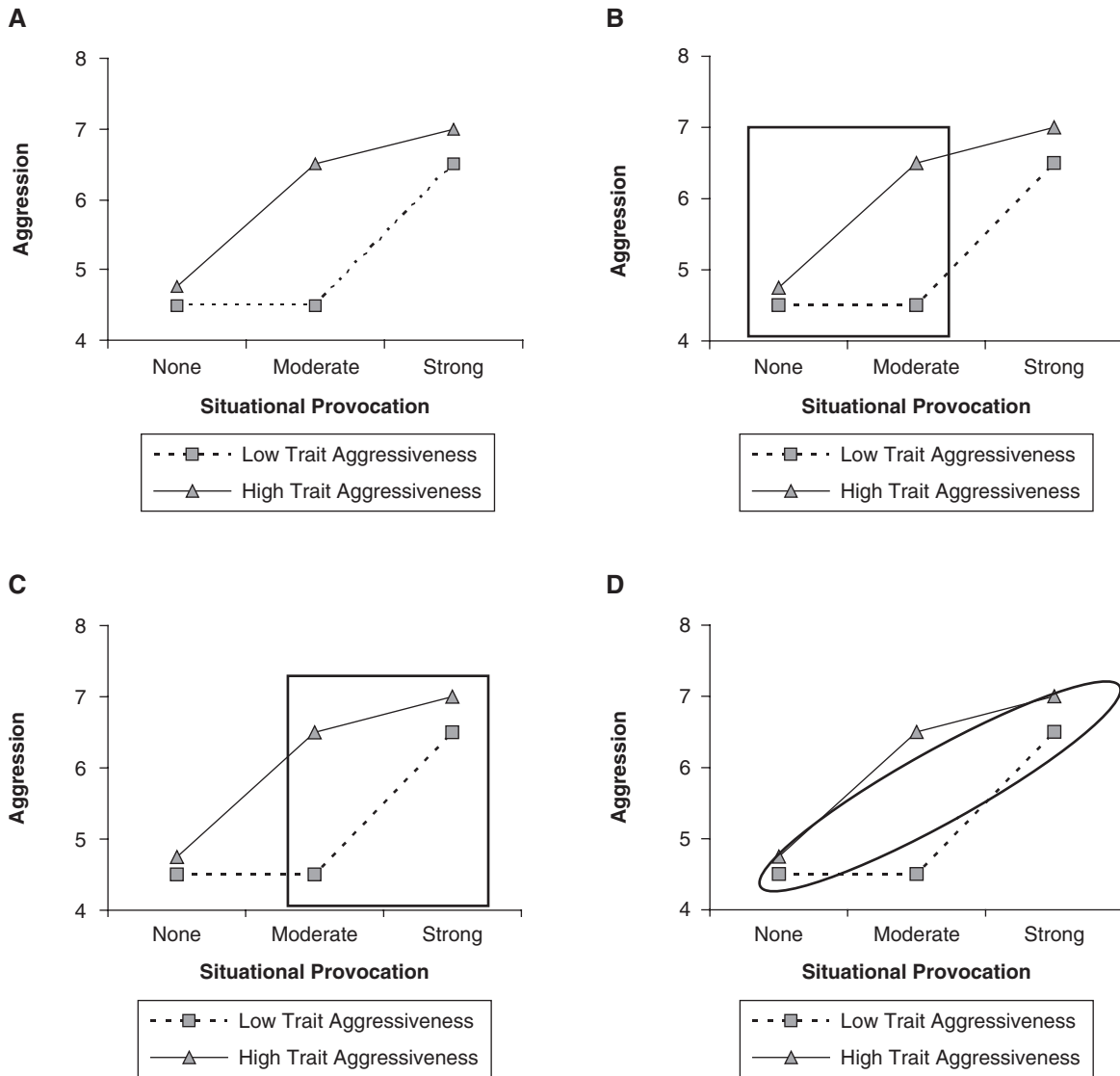
manner but insufficient to produce anger and aggression in people who lack this propensity).

This analysis may explain why a great variety of aggressive cues, including media violence, heat, pain, and provocation, have all been shown to increase aggression, particularly among people who are predisposed to behave in an aggressive fashion (for a review, see C. A. Anderson & Bushman, 2002). For example, Felsten and Hill (1999) found that high hostility participants reported greater anger than low hostility participants only after provocation, and Caprara, Renzi, Alcini, D'Imperio, and Travaglia (1983) found that highly irritable participants delivered higher levels of shock to an innocent person than did low irritable participants only after they received a blow to their feelings of self-worth. Finally, K. B. Anderson, Anderson, Dill, and Deuser (1998) found that in comparison with participants scoring low in trait hostility, participants scoring high in trait hostility rated ambiguous words as more similar to aggressive words only when they were in pain.

Not all studies find such a pattern however. When Lindsay and Anderson (2000) examined the influence of trait hostility and pain on hostile affect, they found only two main effects but no interaction. In another investigation, C. A. Anderson (1997) found that only participants low in trait hostility showed increases in aggressive thoughts after watching a violent movie clip. This finding is unusual (see Bushman, 1995), but it does represent another possible way in which traits and situations could interact. Thus, although people high in trait hostility are usually more reactive to situational provocation, this is not always the case.

#### *The Need for Multisituational Designs*

The TASS model provides some insight into why these reversals come about. According to the model, people high in a given trait show trait-relevant behaviors at lower levels of provocation than do those who are low in a given trait. Consequently, at least three levels of provocation are needed to fully appreciate the interactive effects of traits and situations. Figure 1 shows why this is important. The figure presents the results of a hypothetical study in which a trait measure of aggressiveness and situational provocation are used to predict an aggression-relevant response. Panel A shows the overall pattern: People high in TA show increases in aggression following moderate provocation, but people low in TA show increases in aggression only following strong provocation. Panel B shows what would happen if only the first two conditions of situational strength were examined. If we compared moderate provocation against a control condition, we would conclude that people high in TA are more reactive to the situational manipulation than are those low in TA. This is the state of affairs that characterizes most research on aggression, which is why most studies find that hostile



**Figure 1 Hypothetical data patterns in a study of trait aggressiveness and situational provocation.**

NOTE: Panel A shows the general pattern; Panel B shows that people high in trait aggressiveness are more responsive to situational provocation when we compare only moderate to no provocation; Panel C shows that people low in trait aggressiveness are more responsive to situational provocation when we compare moderate provocation to strong provocation; and Panel D shows that both groups are equally responsive to situational provocation when we compare strong provocation with no provocation.

people react to situational provocation with greater aggressiveness. Panel C shows a different pattern. If we had compared only moderate provocation against strong provocation, we would conclude that people low in TA are more reactive to provocation than are those high in TA. Finally, Panel D shows what would happen if we included only the two extreme conditions. In this case, we would find two main effects but no interaction, concluding that the two groups are equally reactive to provocation. In short, whether we conclude that people high in TA are more, less, or no more reactive to aggressive cues than are those low in TA depends entirely on the level of aggressive cues we examine.

To our knowledge, this specific hypothesis has not been tested before. There are, however, several strands of research that support it. Dodge (1980) looked at the aggression response of trait aggressive and nonaggressive boys to three situations: benign, ambiguous, or hostile peer intent. Individual differences were absent in the benign and hostile conditions (i.e., the boys were equally unprovoked in the benign condition and equally provoked in the hostile condition), but high TA boys behaved more aggressively than low TA boys in the ambiguous condition. Dodge attributed this difference to the aggressive children's tendency to infer hostile intentions in ambiguous situations, an interpretation

supported in numerous related studies (Crick & Dodge, 1994; Dodge & Coie, 1987).

Bushman and Geen (1990) found a similar pattern in a study that examined the effect of media violence on aggression. Participants were assessed on TA and exposed to five different levels of media violence (varying from low to high). The authors found the greatest individual differences when participants viewed moderate levels of media violence. Those high in TA showed more aggressive thoughts and feelings under these conditions than did those low in TA. Personality differences were not as evident in the low and high media violence conditions (see also Matthews & Norris, 2002).

#### *Summary and Overview of the Present Research*

To summarize, individual differences in TA appear to incorporate different sensitivities to situational provocation, such that less in the way of situational provocation is needed to invoke aggression-relevant reactions in high TA people than in low TA people. As a consequence of these differences, high TA people will appear to be more reactive than low TA people to moderate provocation, but low TA people will appear to be more reactive than high TA people to strong provocation. We conducted three investigations to test these ideas. In the first study, we tested these ideas directly by exposing participants to three levels of provocation. In Studies 2 and 3, we explored whether people are aware of the proposed link between aggression and situational provocation in others (Study 2) and in themselves (Study 3).

#### PILOT STUDY

As a preliminary step, we first prepared scenarios we thought would differ in situational provocation. To verify our intuitions, we tested our scenarios with a sample of 50 University of Washington (UW) undergraduates.<sup>1</sup> Participating in groups of up to 6, they were asked to imagine they had written an essay during an experiment and received feedback from a partner. They were then asked to evaluate the valence of several feedback statements they might have received from their partner on a 7-point scale (1 = *very negative*, 7 = *very positive*). Based on the results of this preliminary study, we chose three feedback statements. They were "Good job, nice work" ( $M = 5.30$ ,  $SD = 1.09$ ); "Could have been clearer, not much effort put into it" ( $M = 3.22$ ,  $SD = 1.35$ ); and "This is the worst essay I have ever read" ( $M = 1.26$ ,  $SD = 0.78$ ). A one-way analysis of variance on these means revealed a significant difference,  $F(2, 98) = 200.32$ ,  $p < .001$ , and follow-up comparisons showed that all three means differed significantly from one another (all  $p$ s  $< .001$ ). The clear separation between these three feedback statements and the fact that the moderate

strength condition falls near the midpoint of a 7-point scale allow a proper test of our theoretical model.

#### STUDY 1

##### *Method*

##### *PARTICIPANTS*

In Study 1, 101 UW women participated in exchange for extra course credit. They were selected from a larger sample of students who had completed the Buss-Perry Aggression scale (Buss & Perry, 1992) at an earlier time. With this scale, participants indicate their agreement with 29 items (e.g., "When frustrated, I let my irritation show" and "I have trouble controlling my temper") using 4-point scales (0 = *extremely uncharacteristic*, 3 = *extremely characteristic*). The possible range of scores is 0 to 57. The present sample was comprised of 51 low TA participants who scored in the bottom third of the distribution ( $M = 14.47$ ,  $SD = 3.65$ ) and 50 high TA participants who scored in the upper third of the distribution ( $M = 37.26$ ,  $SD = 7.53$ ). Finally, 3 additional participants failed to fully complete the experiment, and their data were discarded.

##### *PROCEDURE AND MATERIALS*

Participants were tested in groups of 4 or 6. At the start of the experimental session, the participants learned that the researchers were investigating people's performance in cooperative and competitive social situations and that the experiment consisted of two phases. In the first phase, they would write essays to be evaluated by a fellow participant. In the second phase, they would compete against this same participant in a computerized reaction time task. To protect their partner's privacy, the participants also were told they would not be informed of their partner's identity.

After receiving these instructions, the participants were led into separate rooms where they were given 10 minutes to write an essay about a topic of current interest to UW students: whether the university's athletic facility should charge a usage fee. When the allotted time had elapsed, the experimenter collected the essays and gave them their "partner's" essay to evaluate. In actuality, these essays had been prepared in advance by the experimenter and were of moderate quality. After a few minutes, the experimenter collected their evaluations and gave them their "partner's" (alleged) evaluation of the essay they had written. These evaluations had also been prepared in advance by the experimenter. Using random assignment to conditions, the participants received one of the three types of feedback we had selected during pilot testing. In the positive feedback/no insult condition, the participants were told they had written a good essay; in the moderate insult condition, the participants were told the

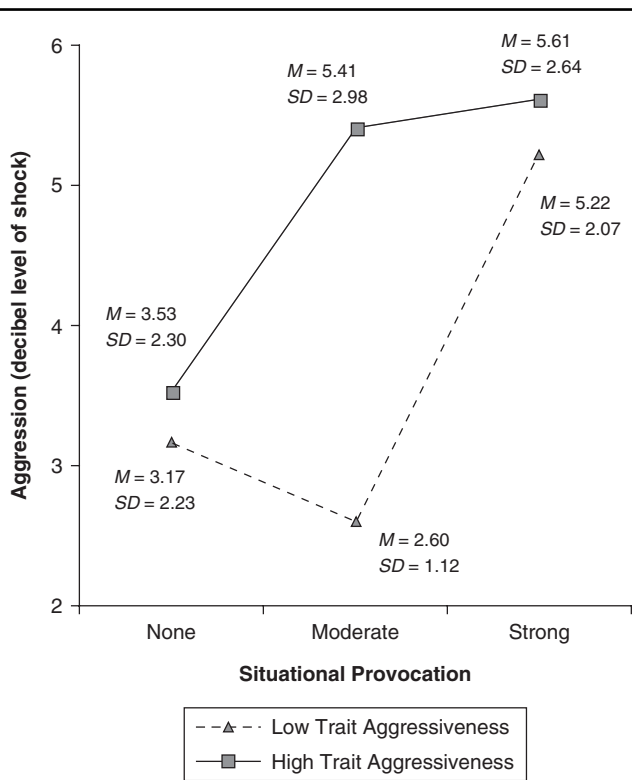


Figure 2 Aggression as a function of trait aggressiveness and situational provocation: Study 1

essay needed work and that it didn't seem like much effort was put into it; and in the strong insult condition, the participants were told that it was the worst essay their partner had ever read.

After giving the participants time to read the false feedback, the experimenter handed out two questionnaires. The first questionnaire assessed their mood. Participants indicated the extent to which they were presently experiencing each of five emotions (aggressive, angry, hostile, irritated, upset) (1 = *not at all*, 7 = *very much*). The five items were averaged to derive a single emotion scale ( $\alpha = .89$ ) indicative of how much anger the participants were feeling after receiving the feedback.

The second questionnaire began with a brief description of the computerized reaction time task. Adapting procedures commonly used as a behavioral measure of aggression (Bushman & Baumeister, 1998), the participants were told that in the next phase of the experiment they would compete against their partner in a task that assessed their reaction times. Whoever had the slowest time on a series of trials would receive a burst of noise via headphones attached to the computer (the participants were seated next to computers with headphones attached). The questionnaire asked the participant to rate how loud a burst of noise they wanted their partner to receive using an 11-point scale

(0 = *no noise*, 10 = *110 decibels*). A brief description accompanied each decibel level (e.g., 60 decibels, quiet, refrigerator; 80 decibels, moderately loud, vacuum cleaner; 110 decibels, very loud, rock concert), and participants were informed that none of the choices exceeded the pain threshold. Finally, participants were told that the level of noise they selected would be used on every trial.

When they had finished completing these items, the experiment was concluded. The participants were debriefed, thanked, and excused. Note then that the participants never completed the competitive, reaction time task or administered any aversive bursts of noise to their partner. Instead, they only indicated how loud they wanted the noise to be.

### Results

We used a series of planned contrasts and comparisons to test our experimental hypotheses.<sup>2</sup>

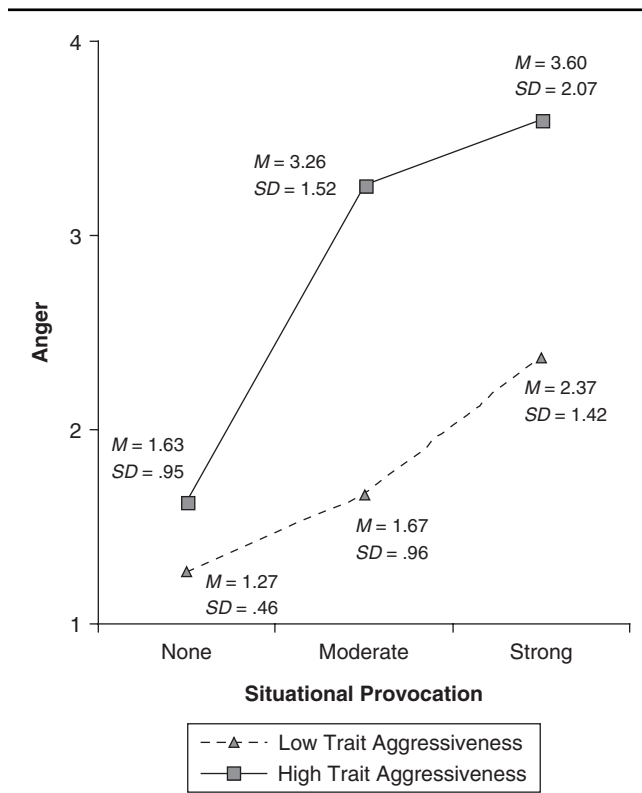
#### AGGRESSION

The TASS model predicts that high TA participants will respond to moderate provocation with greater aggression than will low TA participants. To test this hypothesis, we conducted a 2 (trait aggressiveness)  $\times$  2 (provocation: none vs. moderate) interaction contrast on participants' decibel level choices. The contrast proved to be significant,  $t(95) = 2.16$ ,  $p < .05$ ,  $d = .44$ . Inspection of Figure 2 shows that compared to no provocation, moderate provocation increased aggression in high TA participants,  $t(95) = 2.35$ ,  $p < .05$ ,  $d = .48$ , but not in low TA participants,  $t < 1$ . These findings are in accordance with the claim that TA represents a sensitivity to situational provocation.

We conducted a second interaction contrast to test our hypothesis that compared to moderate provocation, strong provocation would produce greater increases in aggression in low TA participants than in high TA participants. This predicted interaction contrast was also significant,  $t(95) = 2.14$ ,  $p < .05$ ,  $d = .44$ , and inspection of Figure 2 confirms that strong situational provocation increased aggressiveness among low TA participants,  $t(95) = 3.27$ ,  $p < .001$ ,  $d = .67$ , more than among high TA participants,  $t < 1$ .

We performed a third interaction contrast using only the no provocation and strong provocation conditions. The interaction contrast here was not significant,  $t < 1$ , reflecting the fact that compared to no provocation, strong provocation produced comparable increases in aggression among high TA participants,  $t(95) = 2.60$ ,  $p < .05$ ,  $d = .53$ , and low TA participants,  $t(95) = 2.57$ ,  $p < .05$ ,  $d = .53$ .

Finally, we tested whether personality differences were stronger given moderate provocation than given either no provocation or strong provocation. The quadratic



**Figure 3** Anger as a function of trait aggressiveness and situational provocation: Study 1

interaction contrast used to test this prediction was significant,  $t(95) = 2.48$ ,  $p < .05$ ,  $d = .51$ . Follow-up tests showed that personality mattered a lot in the moderate provocation condition,  $t(95) = 3.51$ ,  $p = .001$ ,  $d = .72$ , but very little in the control condition and the strong provocation condition (both  $t < 1$ ).

To summarize, in accordance with predictions derived from the TASS model, TA represented a sensitivity to situational provocation. Compared to no provocation, moderate levels of provocation produced greater aggression in high TA participants than in low TA participants, and compared to moderate provocation, strong provocation produced greater aggression in low TA participants than in high TA participants. Because of these differences, personality mattered more in the moderate provocation condition than in the other two conditions.

#### ANGER

We conducted a comparable set of analyses using participants' anger scores. First, an interaction contrast using only the no provocation and moderate provocation conditions revealed the predicted TA  $\times$  Provocation interaction,  $t(95) = 2.18$ ,  $p < .05$ ,  $d = .45$ . Figure 3 shows the nature of the effect. As can be seen, consistent with the claim that very little provocation is needed to anger high

TA people, moderate provocation increased anger in high TA participants,  $t(95) = 4.08$ ,  $p < .001$ ,  $d = .84$ , but not in low TA participants,  $t(95) = 1.00$ ,  $ns$ .

Next we tested our prediction that in comparison with moderate provocation, strong provocation produces greater increases in anger among low TA participants than among high TA participants. This prediction was only partially confirmed. Strong provocation did tend to produce greater increases in anger among low TA participants,  $t(95) = 1.75$ ,  $p = .08$ ,  $d = .36$ , than among high TA participants,  $t < 1$ , but this difference did not approach significance ( $t < 1$  for the interaction contrast).

We performed a third interaction contrast using only the no provocation and strong provocation conditions. As predicted, no interaction was found,  $t(95) = 1.54$ ,  $p > .10$ , for the TA  $\times$  Provocation interaction. This occurred because compared to no provocation, strong provocation produced comparable increases in anger among high TA participants,  $t(95) = 4.93$ ,  $p < .001$ ,  $d = 1.01$ , and low TA participants,  $t(95) = 2.75$ ,  $p < .05$ ,  $d = .57$ .

Finally, we examined the quadratic interaction term to see whether personality differences were greater in the moderate provocation condition than in either of the other two conditions. The means were patterned as predicted, but the effect fell short of significance,  $t(95) = 1.62$ ,  $p = .11$ ,  $d = .33$ . Follow-up tests showed that personality differences were absent in the control condition,  $t < 1$ , but equally evident in the moderate provocation condition,  $t(95) = 3.98$ ,  $p < .001$ ,  $d = .82$ , and strong provocation condition,  $t(95) = 3.08$ ,  $p < .01$ ,  $d = .63$ .

#### Discussion

Study 1 found that situational provocation interacts with TA to affect aggression and anger. Very little provocation was needed to elicit aggression and anger in high TA participants, but a good deal of provocation was needed to elicit aggression and anger in low TA participants. These findings support our claim that TA represents different sensitivities to situational provocation.

Because of these effects, any conclusions we draw about individual differences in TA depend on the comparisons we make. If we compare the control condition with a moderate provocation condition, we conclude that high TA participants are more reactive to provocation than are low TA participants; if we compare the moderate provocation condition with the strong provocation condition, we conclude that low TA participants are more reactive to provocation than are high TA participants; and if we compare the control condition with the strong provocation condition, we conclude that the two participant groups are equally reactive to provocation. These conclusions were more clearly supported for overt aggression than for anger, but the pattern was generally the same.<sup>3</sup>

## STUDY 2

Having tested the TASS model directly, we turn now to a related question: Are laypeople implicit TASS theorists? Beginning with Heider's (1958) seminal work on attribution theory, psychologists have shown an enduring interest in understanding people's naïve theories of personality and behavior. Historically, theorists assumed that laypeople use an additive causal schema, implicitly calculating the extent to which behavior is due to the person or the situation (Gilbert & Malone, 1995; Ross, 1977; Trope, 1986). More recent research suggests that laypeople intuitively calculate the interactive effects of personality and situations when predicting behavior (Kammrath et al., 2005; Malle, 1999). For example, Kammrath et al. (2005) asked participants to predict how Jane, a shy person, would react in situations with friends she knew well or strangers. Participants demonstrated a sensitivity to the situational context, predicting that Jane's shyness would manifest itself more clearly when she was interacting with strangers than when she was interacting with friends.

The TASS model may shed light on the cognitive processes that underlie this judgment. When gauging Jane's warmth, participants may have asked themselves "How much unfamiliarity is needed to evoke avoidance in a person?" Implicitly, they may have assumed that a shy person needs little in the way of unfamiliarity to feel anxious and uncomfortable, so they predicted that Jane would manifest her shyness under those conditions. A similar process may apply to judgments of aggression. Lay perceivers may understand that TA functions in a threshold-like fashion and that a moderate degree of provocation will evoke greater anger in a high TA person than in a low TA person. Study 2 was conducted to examine this possibility.

*Method**PARTICIPANTS*

In Study 2, 90 UW undergraduates (29 men, 61 women) participated in exchange for course credit. Using the same criteria as in Study 1, they were drawn from the top and bottom thirds of the Buss-Perry Aggression scale (Buss & Perry, 1992). Of the 90 Participants, 48 were classified as being low in TA, and 42 were classified as being high in TA.

*MATERIALS AND PROCEDURES*

The participants were asked to read six vignettes about a person named Chris and rate Chris's likely emotional reaction in each situation. The six vignettes formed a 2 (trait aggressiveness)  $\times$  3 (situational provocation) factorial design. Each vignette began by describing Chris

as either generally good-natured and easygoing (low aggressiveness) or as hostile and aggressive (high aggressiveness). Then, three levels of situational provocation were created by varying fictitious events at a grocery store. In the control condition, participants were simply asked to imagine Chris was shopping at a grocery store; in the moderate provocation condition, participants were asked to imagine that while shopping at a grocery store, Chris discovered that a person in the express line had more than the allotted number of items; and in the strong provocation condition, participants were asked to imagine that while shopping at a grocery store, another shopper butted in front of Chris at the checkout line. To illustrate, the following passage shows the low aggressiveness/high provocation condition.

Chris is generally considered to be a good-natured, easygoing person. One day while shopping at the grocery store, a person with a large basket of groceries butts in front of Chris just as Chris is about to check out at the Express Line. Please indicate how you think Chris would feel by completing the following items.

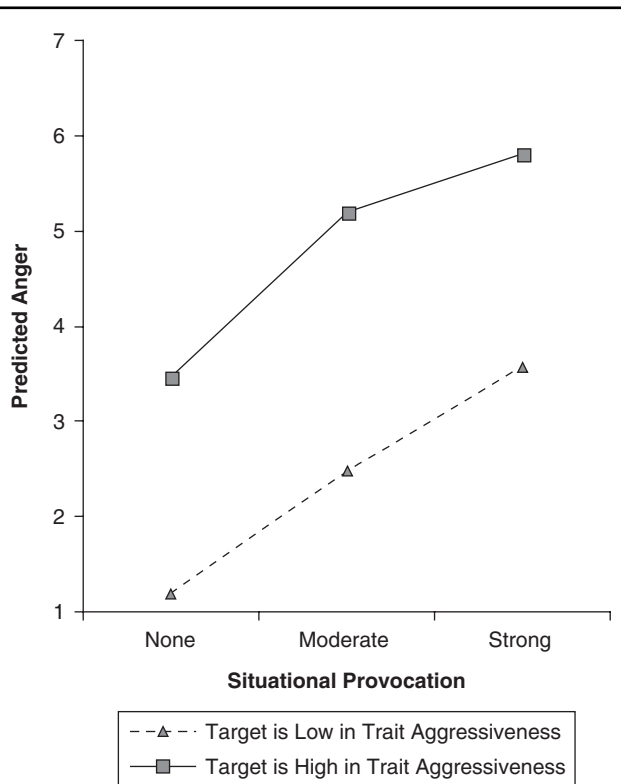
Each passage was followed by a five-item emotion scale (aggressive, angry, hostile, irritated, upset) (1 = *not at all*, 7 = *very much*) regarding Chris's emotional state. The six vignettes were presented in counterbalanced order, and once participants had read them all and had completed the emotion ratings, they were debriefed, thanked, and excused.

*Results and Discussion*

The five emotion items were summed within each condition to create a single index of Chris's predicted emotional state (all  $\alpha$ s > .75). As preliminary analyses revealed no main effects or interactions involving gender or participant TA, the data were reanalyzed excluding these variables.

First, we conducted a 2 (target TA)  $\times$  2 (situational provocation: control vs. moderate provocation) interaction contrast to test our prediction that people intuitively understand that moderate provocation produces greater anger when TA is high rather than low. Paralleling our earlier findings, this analysis revealed a Target TA  $\times$  Situational Provocation interaction,  $t(178) = 4.98$ ,  $p < .001$ ,  $d = 1.06$ . The data displayed in Figure 4 reveal a pattern similar to the one found in Study 1. Consistent with predictions, participants expected that moderate provocation would produce greater anger in a high TA target,  $t(178) = 16.74$ ,  $p < .001$ ,  $d = 3.55$ , than in a low TA target,  $t(178) = 9.70$ ,  $p < .001$ ,  $d = 2.06$ .

When comparing strong provocation to moderate provocation, the TASS model predicts that people who are low in TA will be more reactive to strong provocation



**Figure 4** Predicted anger for another person as a function of the person's trait aggressiveness and situational provocation: Study 2

than will those who are high in TA. A 2 (participant TA)  $\times$  2 (target TA)  $\times$  2 (situational provocation: moderate provocation vs. strong provocation) interaction contrast confirmed that this prediction also characterizes people's implicit theories of personality,  $t(178) = 3.43$ ,  $p < .001$ ,  $d = .73$ . As expected, participants believed that strong (as compared to moderate) provocation would produce greater increases in anger in a low TA target,  $t(178) = 8.17$ ,  $p < .001$ ,  $d = 1.73$ , than in a high TA target,  $t(178) = 3.32$ ,  $p = .001$ ,  $d = .70$ .

Next, we compared the control condition against the strong provocation condition. We predicted no interaction effect here, and none was found,  $t(178) = 1.55$ , *ns*. The lack of an effect here does not mean that our participants expected that the low TA target would be just as angry in response to strong provocation as the high TA target. In fact, the high TA target was expected to be a lot angrier following strong provocation than the low TA target,  $t(178) = 19.83$ ,  $p < .001$ ,  $d = 4.20$ . The lack of a significant interaction means only that the two targets were expected to experience comparable increases in anger.

Finally, we computed a quadratic interaction effect to see whether personality was expected to play its most important role following moderate provocation. The

effect was significant,  $t(114) = 2.27$ ,  $p < .05$ ,  $d = .43$ , and follow-up tests showed that although participants expected personality to matter in all three conditions (all  $p$ s  $< .001$ ), they believed it would matter most following moderate provocation.

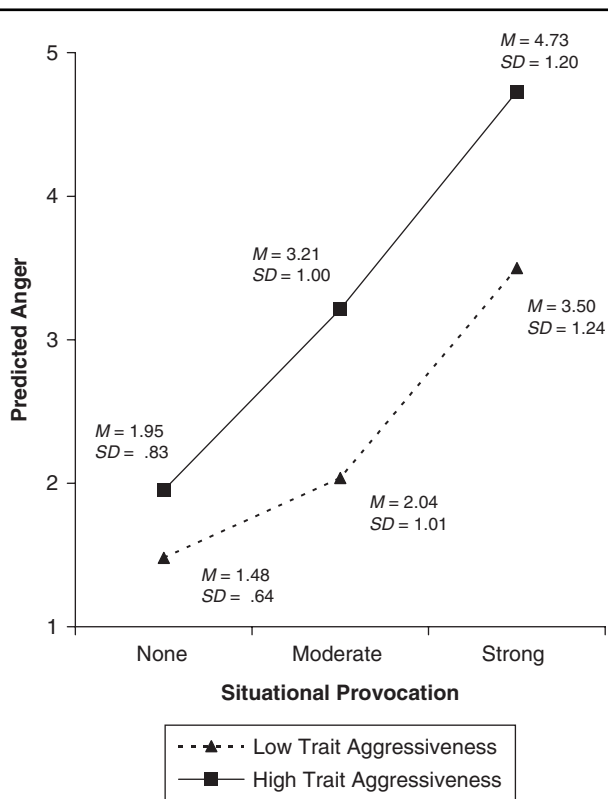
To summarize, these findings establish that people's naïve beliefs about personality conform quite closely to a model that views traits as situational sensitivities. In accordance with the TASS model, people believe that (a) moderate situational provocation produces greater anger in people who are high in TA than in those who are low in TA, (b) strong as opposed to moderate provocation produces greater increases in anger when TA is low than when it is high, (c) TA does not predict increases in aggression when strong provocation is compared against no provocation, and (d) individual differences matter more in moderate strength situations than in very weak or very strong situations.

### STUDY 3

To this point we have seen that situational provocation interacts with TA to produce aggression-relevant feelings and behavior, and we have seen that laypeople are implicit TASS theorists. In our final study, we consider a related issue. Namely, are people aware of these tendencies in themselves? In particular, do those who are high in TA understand that little in the way of situational provocation is needed to anger them, and do those who are low in TA appreciate that a good deal of provocation is needed to anger them? To answer these questions, we conducted a simulation study in which we asked participants to predict their reactions in situations involving varying levels of provocation.

Although we believe that simulation studies provide useful information, we acknowledge that they are not without interpretative difficulties. People aren't always able to accurately predict how they will feel or behave when confronted with an emotionally laden stimulus (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000), so their prognostications must be taken with a grain of salt. Nevertheless, it is of interest to see whether high TA people are aware that they respond with anger and aggression to only moderate provocation. Snyder and Ickes (1985) noted that traits serve a directive function, influencing the situations people choose to enter or avoid. If people high in TA recognize that little in the way of situational provocation is needed to incite them, they may use this knowledge to avoid potentially problematic situations. To examine this issue, we conducted a final study to see whether people's beliefs about their own reactivity correspond to the TASS model.





**Figure 5** Predicted self-reported anger as a function of trait aggression and situational provocation: Study 3

## Method

### PARTICIPANTS

For the final study, 57 UW undergraduates (30 men, 27 women) participated in exchange for course credit. As before, they were selected from a larger sample of students who had completed the Buss-Perry Aggression scale (Buss & Perry, 1992) at an earlier time. Using the same criteria as in our earlier study, only participants scoring in the top or bottom thirds of the distribution were eligible to participate. Specifically, 28 of the participants were low in TA, and 29 were high in TA.

### MATERIALS AND PROCEDURES

Participants read three vignettes and then indicated how they thought they would feel in each situation. The three vignettes represented three levels of situational provocation created by varying fictitious events at a grocery store. In the control condition, participants were simply asked to imagine they were shopping at the grocery store; in the moderate provocation condition, participants were asked to imagine that they were shopping at the grocery store when they discovered that a person in the express line had more than the allotted number

of items; and in the strong provocation condition, participants were asked to imagine they were shopping at the grocery store when another shopper butted in front of them at the checkout line. The vignettes were presented in counterbalanced order, and following each one, participants indicated how they would feel by completing a five-item emotion scale (aggressive, angry, hostile, irritated, upset), (1 = *not at all*, 7 = *very much*). After making their ratings for all three stories, the participants were debriefed, thanked, and excused.<sup>4</sup>

## Results and Discussion

Preliminary analyses revealed no main effects or interactions involving gender, and the data were reanalyzed excluding this variable.

As before, we tested our hypotheses using a series of planned contrasts and comparisons. First, we conducted a 2 (trait aggressiveness)  $\times$  2 (situational provocation) interaction contrast using only the control and moderate strength conditions. The predicted contrast was significant,  $t(110) = 2.39$ ,  $p < .05$ ,  $d = .46$ , and inspection of Figure 5 shows that the findings are similar to the ones reported in our previous studies. Specifically, high TA participants expected to become angrier in response to moderate provocation,  $t(110) = 6.05$ ,  $p < .001$ ,  $d = 1.15$ , than did low TA participants,  $t(110) = 2.67$ ,  $p < .05$ ,  $d = .51$ .

A second interaction contrast using only the moderate and strong provocation failed to find a significant interaction,  $t < 1$ . As Figure 5 shows, the lack of an interaction reflects the fact that to a comparable degree, both groups expected that strong provocation would produce greater anger than moderate provocation (both  $t$ s  $> 7.00$ , both  $p$ s  $< .001$ ).

Next, we compared the control condition versus the strong provocation condition. Contrary to our predictions (and the results of Study 1), we found a significant interaction effect,  $t(110) = 2.57$ ,  $p = .01$ ,  $d = .49$ . Both participant groups expected to experience more anger in response to strong provocation than no provocation at all, but this was more true of high TA participants,  $t(110) = 13.32$ ,  $p < .001$ ,  $d = 2.54$ , than of low TA participants,  $t(110) = 9.69$ ,  $p < .001$ ,  $d = 1.85$ .

Finally, we examined the quadratic interaction term to see whether personality effects were most apparent given moderate provocation. This prediction was not confirmed,  $t(110) = 1.28$ ,  $p > .20$ . Examination of the data indicated that personality differences were significant in all three conditions (all  $p$ s  $< .05$ ) and equal in strength in the moderate and strong provocation conditions (both  $p$ s  $< .001$ ).

To summarize, although these results diverge somewhat from our earlier findings, they share an important characteristic. Moderate provocation produced more

anticipated anger in high TA participants than in low TA participants, and these differences were attenuated when moderate provocation was compared with strong provocation. Because this study used a simulation methodology, we cannot be sure why the results differ from our earlier findings. Despite these differences, one thing is clear: People who score high in TA are aware that they are quick to anger in response to rather minimal provocation, whereas those who score low in TA expect to exhibit greater equanimity under these circumstances.

#### GENERAL DISCUSSION

In this article, we tested a general model of personality that views traits and situations as interdependent psychological constructs. According to the model, traits represent different sensitivities to situational provocation. To possess a trait is to possess a propensity to respond to situational provocation in a particular way. This perspective recognizes the intimate relation between traits and situations, viewing them as mutually dependent psychological constructs.

Applying this model to the study of aggression, we predicted that people who score high in TA would experience more anger and display more aggression in response to moderate provocation than would those who are low in TA, but that the opposite would be true when moderate provocation was compared with strong provocation. Study 1 provided support for this hypothesis. In response to moderate provocation, participants scoring high in TA became angry and aggressive toward the person who had given them a negative evaluation. These reactions were absent among those who scored low in TA. Strong provocation did however produce anger and aggression among low TA participants, and, when compared with moderate provocation, these reactions were more pronounced than the reactions of high TA participants.

Our next two studies examined people's naïve beliefs about the nature of TA. Various phrases such as "has a short fuse" and "is thin-skinned" suggest that people are aware that aggressive people get angry after only mild provocation. This proved to be the case. Study 2 found that participants believe that a person high in TA will become angrier in response to a mild affront than will those who are low in TA, and Study 3 found that people believe the same will be true when predicting their own reaction.

#### *Limitations*

Before turning to a consideration of these findings, we wish to point out some important limitations. First,

our participants were all college students, and our samples were largely comprised of women. Although we did not find any gender differences in Studies 2 and 3, whether our findings apply to other populations needs to be determined.

We also tested only those who scored at the extreme ends of the hostility scale and dichotomized our personality variable to form discrete groups. Several theorists have noted that these procedures present interpretive problems and are advisable only under certain conditions (Aiken & West, 1991; Campbell & Kenny, 1999; Chaplin, 1991; MacCallum, Zhang, Preacher, & Rucker, 2002). We concur with this criticism but note also that the use of extreme groups has been regarded as acceptable during the initial stages of a research project (Preacher, Rucker, MacCallum, & Nicewander, 2005) and that the use of dichotomized variables provides the most powerful way to test interactions (McClelland & Judd, 1993). We also used extreme groups to better capture the phenomenology of how laypeople think of traits. As Study 2 suggests, laypeople make broad distinctions between types of people (i.e., those who are hostile and those who are not), suggesting that laypeople may think of traits in dichotomous terms. Despite these justifications, we acknowledge that future research needs to examine the entire range of scores on a trait in hopes of identifying the inflection points that represent thresholds to situational sensitivity.<sup>5</sup>

Third, our measure of aggression in Study 1 was socially sanctioned, did not involve inflicting direct abuse, and was given in an anonymous context. Our results might have been different had we forced participants to directly aggress against another person who was physically present. It is also important to note that our assessment of anger always preceded our assessment of aggression, leading to potential reactivity on the part of our participants.

Fourth, the affronts we examined were rather tepid compared to the sorts of confrontations one might encounter in the real world. Receiving a negative evaluation on an essay is hardly the same as being physically assaulted or even verbally abused. Of course, the fact that we found group differences given such mild affronts can also be interpreted as providing even stronger evidence for our claim that TA represents a heightened sensitivity to situational provocation.

Readers should also bear in mind that two of our studies used a simulation methodology. Although such studies are commonly used to test a lay perceiver's causal understanding (e.g., Kammrath et al., 2005), people are not always able to accurately predict their own emotional reactions to a stimulus (Gilbert et al., 1998; Wilson et al., 2000). Consequently, we cannot be sure that our participants' judgments were accurate.

Finally, it is important to underscore that we are not suggesting—and neither do our data show—that people who are high in TA are sometimes less aggressive than are people who are low in TA. We are concerned only with reactivity to situational provocation, and our claim is simply that high TA people are not always more reactive to provocation than are low TA people. It might be argued that ceiling effects or other measurement artifacts have influenced these conclusions. In this regard, it is worth noting that the aggression levels of Study 1 did not approach the highest allowed settings. For example, the highest mean was 5.61, far below the maximum value of 10 that could have been selected. At the same time, we acknowledge that different measures and different manipulations might show instances in which high TA people are usually more reactive to provocation than are low TA people.

#### *Implications and Applications*

These limitations notwithstanding, we believe our findings have some important implications.

#### *THE NATURE OF TA*

First, they help us understand the nature of TA. To say that “someone is aggressive” doesn’t mean the person always behaves aggressively; it means that it takes little in the way of situational provocation to evoke aggression in the person. This emphasis on the threshold functioning of traits is reminiscent of Murray’s (1938) concept of press. Murray theorized that presses were environmental forces that interacted with a person’s needs to produce behavior. His notion of thema (the interaction of need and press) spawned modern person-situation interactionist models that recognize the role of situational strength in eliciting behavior.

Our findings may also illuminate how other variables known to affect aggression operate. For example, biological factors influencing aggression, such as testosterone (Dabbs, Hargrove, & Heusel, 1996) and serotonin (Cleare & Bond, 2000), may also function in a threshold-like manner, with lower levels of provocation needed to evoke aggression in those who possess a biological predisposition to behave aggressively. Similarly, situational cues, such as pain or unpleasantness, may be more apt to activate negative thoughts and aggressive associations in high TA people than in low TA people, and the greater accessibility of these thoughts also fuels anger and aggressive behavior (Bushman, 1996, 1998).

Although we did not investigate the issue directly, we suspect that the manner in which high TA individuals construe and interpret mild affronts contributes to their reactions. Those high in TA often show a hostile attribution bias: They chronically perceive hostile intent in

others’ behaviors (Crick & Dodge, 1994; Dill, Anderson, & Deuser, 1997). These perceptions prompt an aggressive response, eliciting rejection or aggression from the target, thereby creating a vicious cycle. Joining this research, our findings suggest that people high in TA might readily draw such inferences after only moderate provocation, whereas people low in TA would only draw such inferences following strong provocation.

#### *SITUATIONAL STRENGTH*

Our findings also clarify the nature of situational strength. Previous investigators have suggested that individual differences matter more in weak situations than in strong situations (Mischel, 1977; Snyder & Ickes, 1985). Although precise definitions are elusive, strong situations have been described as ones that provide clear guidelines for behavior and minimize the role of interpretation and construal, whereas weak situations have been described as ones that lack clear guidelines for behavior and maximize the role of interpretation and construal.

Our findings suggest that the definition of situational strength should be broadened to include the magnitude of situational provocation and that at least three levels of provocation are needed to determine when traits matter and what their effect will be. Table 1 emphasizes the importance of this point, providing an overall summary of our findings. The first row shows that all analyses produced a significant TA  $\times$  Situational Provocation interaction when comparing a control condition with a moderate provocation condition, and that the form of this interaction was always the same: Moderate provocation produced greater increases in aggression-relevant responses when TA was high than when it was low. The second row shows that in two instances, just the opposite occurred when the moderate provocation condition was compared with the strong provocation condition. In these cases, low TA participants (or targets) responded (or were expected to respond) with greater increases in aggression-relevant responses than high TA participants (or targets). Finally, the third row shows that in three of the four tests, no interactions were found when the control condition was compared with the strong condition. Thus, whether high TA participants and targets were more, less, or equally reactive to situational provocation depended on the particular comparisons being made. These findings underscore that at least three levels of situational strength are needed to predict when traits matter and what effect they will have.

In a related vein, we found that personality differences were stronger under moderate provocation conditions than in either of the other two conditions. Although this effect didn’t always achieve significance, the pattern was consistent across studies. The TASS model explains why this is so. People who score high on a trait

**TABLE 1: Summary of Findings Regarding the Interaction Between Trait Aggressiveness and Situational Provocation.**

	<i>Study 1</i>		<i>Study 2</i>	<i>Study 3</i>
	<i>Aggression</i>	<i>Anger</i>	<i>Predictions About Another Person's Anger</i>	<i>Predictions About One's Own Anger</i>
Comparing a control condition with a moderate provocation condition, did moderate provocation produce greater increases in aggression-relevant responses in high trait aggression (TA) participants than in low TA participants?	Yes	Yes	Yes	Yes
Comparing a moderate provocation condition with a strong provocation condition, did strong provocation produce greater increases in aggression-relevant responses in low TA participants than in high TA participants?	Yes	No	Yes	No
Comparing a control condition with a strong provocation condition, was there a TA $\times$ Situational Provocation interaction?	No	No	No	Yes

show trait-relevant behaviors with only minimal provocation, so personality differences will be highly apparent under these conditions. As situational strength increases, these effects become attenuated because people who score low on a trait also begin to exhibit the trait-relevant behavior. For these reasons, personality psychologists would be well advised to construct situations of moderate strength, just strong enough to produce a behavior in those who are high on the trait but not strong enough to produce a behavior in those who are low on the trait.

#### *IMPLICATIONS FOR NAÏVE PSYCHOLOGY*

Interestingly, ordinary people seem to understand this feature of situational strength when predicting behavior. The findings from Study 2 showed that laypeople believed that moderate provocation would increase anger more in high TA people than in low TA people but that strong provocation would increase anger more in low TA people than in high TA people. Although researchers have documented numerous human errors in attribution and decision making (Kahneman & Tversky, 1972; Ross, 1977; Ross & Nisbett, 1991), our findings indicate that the average person can sometimes be quite sophisticated and discerning when making judgments about others. This might explain why people so steadfastly believe that personality dispositions guide behavior. In their implicit theories of personality, they automatically adjust for situational strength, expecting certain types of behavior only under certain conditions (Kammrath et al., 2005).

This adjustment suggests that lay perceivers do not use a simple, additive causal schema when judging behavior. Instead of assuming that behavior is due to either the person or the situation, lay perceivers construct a more sophisticated causal judgment that includes a Person  $\times$  Situation interaction term. Moreover, this interaction

term incorporates variations in situational sensitivity that adjust for the fact that less situational strength is needed to evoke a trait-relevant behavior in some people than in others. In this sense, our findings contribute to a growing recognition that lay personality theories incorporate complex "if . . . then" contingencies that specify the particular conditions under which a trait is manifested in behavior (Shoda & Mischel, 1998; Shoda, Mischel, & Wright, 1989).

#### *IMPLICATIONS FOR UNDERSTANDING OTHER TRAITS*

Finally, our findings may shed light on how other traits interact with situations to affect behavior. To illustrate, some researchers believe that low self-esteem people are more reactive to failure than are high self-esteem people (Brown & Dutton, 1995; Brown & Marshall, 2001), whereas others believe the opposite is true (Swann, 1996). Situational strength may illuminate this debate. Only a small amount of failure may be needed to evoke negative emotional reactions in low self-esteem people, lending support to those who claim that low self-esteem people are more reactive to failure than are high self-esteem people. In contrast, a large failure experience may produce greater emotional distress in high self-esteem people, giving credence to those who claim that high self-esteem people are more emotionally reactive to failure than are low self-esteem people.

Whether these effects occur across a broad range of traits remains to be seen. We suspect that our model is most applicable to traits that have a biological basis, especially ones relevant to emotionality, such as anger, anxiety, self-esteem, and the like. We are less sure that other traits, such as conscientiousness, sincerity, or honesty, will show a similar pattern. These issues are deserving of consideration. Ultimately, we hope the TASS model will help us understand when particular traits have particular effects in particular situations.

## NOTES

1. Only female participants were used in the pilot study and in Study 1 because the participant pool at the University of Washington is predominantly women, and we didn't want men and women to participate in the learning task together.

2. After confirming that the variances were homogenous, all analyses reported in this article used a pooled error term and degrees of freedom from the entire sample. Two-tailed tests of significance are reported.

3. Additional analyses revealed only limited evidence that anger mediated the interactive effects of trait aggressiveness and provocation on aggression.

4. The reliabilities for the three scales were as follows: control  $\alpha = .78$ , moderate provocation  $\alpha = .84$ , and high provocation  $\alpha = .87$ .

5. Although we believe our analytic approach is justified, we also analyzed the data from Study 1 using continuous scores on the Buss-Perry scale. When entered last, the critical quadratic interaction term was significant for both aggression ( $b = -.734, p < .05$ ) and hostile mood ( $b = -.330, p < .05$ ).

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