Behavioral and Characterological Attributional Styles as Predictors of Depression and Loneliness: Review, Refinement, and Test

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The literature on self-blame and depression reveals two interrelated problems. First, although R. Janoff-Bulman's (1979) conceptualizations of self-blame are clear, empirical operationalization is difficult and has resulted in approaches that do not capture the richness of the constructs. Second, past research has produced inconsistent findings. A comprehensive literature review revealed that the inconsistencies are related to the method of assessing attributions. A correlational study designed to more accurately represent the self-blame conceptualization revealed that both behavioral and characterological self-blame contribute uniquely to depression and loneliness. Supplementary results regarding circumstantial attributions and regarding attributional styles for success were presented. Empirical issues regarding possible methodological refinements and effect size, as well as the value of categorical approaches to the study of attributional style were discussed.

Pete recently received his PhD in structural engineering from a highly respected university. He is the first in his family to go to college. On being asked to name the most important factor in this success he replied, "I worked so very hard to do the best that I could in school."

After years of training and competition, Meredith won a position on the Olympic diving team. In an interview with her hometown newspaper she reported, "I have no real secret to success. I was simply born with the necessary athletic ability and have used this gift."

Jonathan's marriage lasted 2 years, 4 months, and 5 days. He did much soul-searching in the final months. After it was all over he confided to a friend that "It must have been my fault; I'm really not very good at getting along with women."

Julie is a college junior. After a party, she and her boyfriend went to her room, where he physically forced her to have sexual intercourse with him. She explained to the rape crisis counselor that "I guess it was really my fault for getting into that situation. We had been drinking and necking a lot. I shouldn't have invited him to my room."

These kinds of events and the explanations of them are the basic units of all attribution theory. The two most basic questions concern how people go about making a particular attribution for a particular event (the attribution process) and what the effects of a particular attribution are likely to be on a person's emotional, motivational, and behavioral reactions to the event

(the attributional process). This distinction has proved useful in thinking about the voluminous attribution literature, as well as in dividing up the sequence of processes involved in attributions and action (e.g., Anderson & Weiner, 1992; Kelley & Michela, 1980).

Attributional Style Effects

This article is mainly concerned with the attributional process, and specifically, with the effects of different types of attributions for good and bad events. Pete's effort attribution for his academic success should produce positive affect as well as high motivation in similar future endeavors. Jonathan's trait attribution for his failed marriage may exacerbate his already negative affective state and could induce self-defeating behaviors in future interpersonal relationships. The other two cases are less clear. Meredith's ability attribution for her diving success may produce generally positive reactions. However, a few well-placed failures in this or related domains, in conjunction with this "ability" view of the task, could lead her to give up too easily. Julie's strategy attribution for the date rape also has mixed implications. Blaming a strategic mistake in judgment might increase her shame and anger in the immediate situation. But, it may also increase her feelings of optimism about the future and about her ability to predict and control the future.

Much research has addressed these types of attributional questions. Of particular interest has been the notion that people differ in the types of attributions they consistently make for events in their lives. Such a consistent pattern of attributions across events is known as a person's *attributional style*. Attributional style differences may play a major role in the development and maintenance of problems in living characterized by negative affect and motivational deficits. The two most widely researched problems are depression and loneliness. (See Anderson & Arnoult, 1985a; Anderson, Jennings, & Arnoult, 1988; Sweeney, Anderson, & Bailey, 1986, for reviews.) It is clear from these reviews and more recent research that individual differences in attributional style are associated with problems in living.

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Process Assumptions and Measurement Technique

Although this research primarily concerns attributional processes (i.e., the effects of attributions), implicit in any particular attributional style study are assumptions about attribution processes (e.g., how people make attributions). For example, do people think about causes in terms of certain dimensions, such as stability and locus? Or, do people think about causes in terms of categories or types, such as effort and ability?

The most popular technique for assessing attributional style has people generate causes for hypothetical events and then rate the causes on key attribution dimensions (controllability, stability, locus, and globality). Recent work (e.g., Anderson, 1991) suggests that such dimensional thinking may be relatively rare, although it is clear that with proper instruction, people can do it acceptably well. The alternative is to develop categorical procedures for assessing attributional style. That is, attributional style can be defined as the relative frequency with which particular types of attributions are made.

The dimensional approach to attributional style research has produced many advances in recent years. There are major issues yet to be resolved, such as which dimensions are truly primary and how to combine various dimensions (Anderson & Deuser, 1991, 1993; Anderson & Riger, 1991; Carver, 1989; Carver & Scheier, 1991). Nonetheless, this approach has been productive and will continue to yield important insights.

Impediments to Progress

The categorical approach to attributional style has also proved fruitful, especially Janoff-Bulman's categories of behavioral and characterological self-blame (Janoff-Bulman, 1979). However, this approach has not caught on nearly so well despite the promise of assessing attributions at the same conceptual level that people use when making attributions. Two interrelated problems may account for this. First, there are definitional problems in creating appropriate attributional style measures of self-blame. Second, the empirical results from the few directly relevant studies have been mixed. We believe that the empirical anomalies are the result of the definitional problems.

Definitional Problems

Janoff-Bulman's (1979) original discussion of characterological and behavioral self-blame attributions still seems quite apt.

> Behavioral self-blame is control related, involves attributions to a modifiable source (one's behavior), and is associated with a belief in the future avoidability of a negative outcome. Characterological self-blame is esteem related, involves attributions to a relatively nonmodifiable source (one's character), and is associated with a belief in personal deservingness for past negative outcomes. (p. 1798)

Both are types of self-blame that are, in standard dimensional terms, internal causes. The primary distinction between the two types is in terms of controllability. Behavioral causes are potentially controllable, whereas characterological ones are not. The stability dimension also captures this distinction to some extent, with behavioral causes being unstable, and characterological ones being stable. Stability is not in itself sufficient, though, because some unstable causes are not controllable (e.g., mood).

Janoff-Bulman (1979) also notes that the two types of self-blame differ in terms of the time orientation of the attributor. Specifically, she wrote the following:

> In blaming one's behavior, an individual is concerned with the future, particularly the future avoidability of the negative outcome. . . . In blaming himself or herself characterologically, the individual is not concerned with control in the future, but rather with the past, particularly deservingness for past outcomes. (p. 1800)

The key elements in this theory can be linked to standard attribution dimensions. These are the locus of the attributed cause (internal for both), the stability of the cause (behavioral are unstable, characterological are stable), and the controllability of the cause (behavioral are controllable, characterological are uncontrollable). The time-orientation distinction may be linked to the controllability element as well; if the controllability question is framed with a future orientation, then controllable causes will also have the intended future orientation.

Three methods have been used to assess characterological and behavioral attributional styles. Each method has subjects imagine themselves in various hypothetical situations. The methods differ in how subjects' attributional reactions to the situations are assessed.

In the *direct rating* method, subjects rate how much they blame various factors for each of the described situations. The rated factors include characterological and behavioral blame. Janoff-Bulman's (1979) characterological blame question was the following (p. 1803): "Given what happened, how much do you blame yourself for the kind of person you are," with specific information relating to the situation included (e.g., "the kind of person who is in an accident," for her accident scenario). The parallel behavioral blame question was, "Given what happened, how much do you blame yourself for what you did . . ." A number of researchers have used these same questions, or very similar ones, to assess characterological and behavioral blame with the direct rating method (see Table 1). Although the questions do seem to tap into the constructs described by Janoff-Bulman, they do not capture the full richness of those constructs. The main problem is that the questions only subtly capture the distinction between controllable and uncontrollable causes. The subtlety may very well elude subjects, especially those who are intent on getting their extra credit and leaving the lab. Similarly, the time-orientation distinction may be too weakly present to capture subjects' attention.

We have labeled the second method *open-ended coding*. Subjects generate open-ended attributions for the hypothetical situations. Then, expert raters code the attributions. Peterson, Schwartz, and Seligman (1981) were the first to use this procedure. In their study,

> Behavioral codes were made when the attribution referred to some action by the subject—either an overt motor behavior or 'internal' behaviors, such as wants, preferences, and intentions. Characterological attributions referred to personality dispositions of the subject, such as stupidity, immaturity, ability, and so on. (pp. 255–256)

Peterson et al. also created an external category. A couple of more recent studies have used this same coding scheme (see Ta-

Table 1
Studies of Characterological and Behavioral Attributional Style and Depression

Study	Stressor	N	Method	Depression	Characterological Failure	Characterological Success	Behavioral Failure	Behavioral Success
General depression and attributional style studies								
Anderson, Horowitz, & French, 1983, No. 1		304	FC	BDI	.32***	-.04	-.27***	-.12*
Anderson, Horowitz, & French, 1983, No. 2		121	FC	BDI	.41***	.00	-.41***	.00
Peterson et al., 1981		84	OC	BDI	.72***	-.15	-.44***	-.13
Stoltz & Galassi, 1989		334	OC	BDI	.37***		-.10	
Tennen & Herzberger, 1987		87	OC	BDI	.13	.15	.09	-.19
Janoff-Bulman, 1979, No. 1		120	DR	Zung[a]	.19*		ns	
Feather, 1983		248	DR	BDI	.10	-.11	.06	-.07
Carver, Ganellen, & Behar-Mitrani, 1985		101	DR	BDI	.29**		.19*	
Flett, Blankstein, & Holowaty, 1990		201	DR	BDI	.36***		.31***	
Specific stressor, depression, and attributional style studies								
Frazier, 1990	Rape	30/31	DR	BDI	.47**		.40*	
Major, Mueller, & Hildebrandt, 1985								
Immediate	Abortion	243	DR	BDI[a]	.14*		ns	
3 weeks	Abortion	96	DR	BDI[a]	.25*		ns	
Meyer & Taylor, 1986	Rape	58	DR	Own	.46***		.28*	

Note. Method: FC = forced choice attributions; DR = direct ratings of blame; OC = open-ended attributions coded by expert raters. Depression: BDI = Beck Depression Inventory; Zung = Zung Self-Rating Depression Scale; Own = created or modified depression scale.
[a] Original article used a median split procedure; present point biserial correlations were computed from the reported F values.
* $p < .05$. ** $p < .01$. *** $p < .001$.

ble 1). As with the direct rating method, this open-ended coding method captures much of the complexity in the characterological and behavioral constructs. However, it too does not seem to adequately emphasize the controllability feature, which plays so major a role in Janoff-Bulman's distinction between characterological and behavioral blame.

The third method, *forced choice*, presents several attributional choices with each to-be-imagined situation. Subjects then choose the attribution that best fits them. Only one article (two studies) has used this method (Anderson, Horowitz, & French, 1983). In one study, six alternatives were available for each situation: ability, personality, effort, strategy, mood, and circumstances. The first two are characterological; the next two are behavioral. In the other study, only three choices were available: ability, strategy, and effort. Ability and personality are internal, uncontrollable, stable causes that tend to reflect a past orientation. Strategy and effort are internal, controllable, unstable causes that reflect a future orientation. Thus, this method has the controllability distinction built into it. However, this method introduces a different problem. In the forced choice method, choosing one cause precludes choosing another. A person who makes many characterological choices necessarily makes few behavioral ones. The procedure forces fairly substantial negative correlations between the characterological and behavioral measures of attributional style. Thus, the technique is useful in testing the general proposition that attributional styles along a characterological–behavioral continuum correlate with depression and other problems, but it does not allow precise testing of which component (characterological, behavioral, or both) is contributing to the correlation.

A similar perspective on the definitional–measurement problem arises from the fact that characterological self-blame typi-

cally implies behavioral self-blame as well.[1] In the failed marriage example, the characterological attribution "I'm not very good at getting along with women," implies that the attributor behaved in ways that drove his wife away. The key distinction for classifying that attribution as characterological or behavioral is the presumed modifiability of the behavior. In other words, did the attributor expect it to be unstable and controllable in the future? Or did he truly mean that something about his character, which is relatively stable and uncontrollable, was at fault? The direct rating questions obscure these issues, rather than highlighting them. The expert raters used in open-ended coding procedures are more likely to be sensitive to this distinction, but without knowing what the subject meant, the distinction may be hard to apply. The forced choice method reduces this confusion by making the subject choose among attributions that differ in precisely the ways that the theory suggests are important.

It is important to note that we are not faulting the various researchers (including ourselves) for this earlier work. Indeed, all the studies and techniques have importantly contributed to the understanding of attributional phenomena. But every study has limitations; the limitations we have highlighted may help explain the inconsistent findings reported in the next section.

Empirical Problems

Two main predictions have guided research in this area. First, characterological blame for failure or bad events should corre-

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[1] We thank an anonymous reviewer for bringing this perspective to our attention.

late positively with depression and similar problems in living. Second, behavioral blame for failure or bad events should correlate negatively with depression and similar problems in living. Characterological and behavioral attributions for success (or positive) events have not received as much theoretical or empirical attention.

Table 1 presents the results of all the studies we located (using PsycLit, American Psychological Association, 1990–92) that met the following criteria: (a) Both characterological and behavioral self-blame were assessed; (b) depression was assessed. The top half presents the main studies of interest, namely, those in which general depression and attributional styles were assessed. The bottom half presents studies in which depression as a reaction to a specific stressor was related to characterological and behavioral blame.

The studies are organized by their attributional style assessment method. This highlights the inconsistencies in results. Frequency of characterological attributions for failure and bad events correlates positively with depression. There is not a single reversal in this pattern. In contrast, frequency of behavioral attributions for failure events shows marked inconsistency. The inconsistencies, however, are almost perfectly related to the method of measuring characterological and behavioral blame. The forced choice and the open-ended coding studies show the expected negative relation between frequency of behavioral attributions for failure and level of depression. The direct rating studies all show the opposite relation.

This pattern suggests that the direct rating method may obscure the controllability implications of behavioral attributions that were intended in the original conceptualization. The other assessment methods may make this dimension more salient and thereby may produce the more predictable pattern. This is speculative, however, and the bottom line is that there is no clear answer to the question of whether behavioral blame is related to depression and other problems in living. The empirical inconsistencies as well as the definitional problems preclude any strong conclusion. Furthermore, there is too little research on characterological and behavioral attributions for success events to draw any conclusions about their relation to depression. And of course, the same definitional problems apply to those few success studies that have been done. Thus, we conducted a study to further examine these issues.

Overview

Goals

The present study had three goals. The first was to assess the attributional style categories of behavioral and characterological self-blame in a manner that avoids the definitional and methodological problems found in the direct rating, open-ended coding, and forced choice methods discussed earlier. The second was to provide comparable attributional style measures for success situations. The third was a bit more exploratory; it was to assess a third type of attribution that has occasionally been assessed in this domain, external circumstances (Anderson et al., 1983; Peterson et al., 1981). Although there has been less theoretical and empirical attention devoted to this attributional category, the work that does exist suggests that the frequency of

attributions to circumstances for success should positively relate to problems in living (e.g., depression and loneliness). The data are weaker for circumstantial attributions for failure, but it is reasonable to expect negative correlations with problems in living.

The overriding goal was to provide a cleaner test of the theories relating characterological self-blame positively and behavioral self-blame negatively to problems in living (depression and loneliness). This overriding goal required us to maximize interpretational clarity, so we devised a conservative attributional style assessment procedure. Note that the cost of interpretational clarity was an expected reduction in effect size. For two very different reasons, we expected that the magnitude of the attributional style/problems in living correlations would be considerably lower than those typically found in this area. First, our conservative criteria (described in a later section) guaranteed that many of the attributions generated by subjects would be unclassified because of possible ambiguities. Second, the new attributional style assessment procedure involved translating subjects' dimensional ratings into categorical frequency counts. Some loss of "meaning" or "signal" was expected in the translation process.

Translating From Dimensions to Categories

Characterological, behavioral, and circumstantial attributional styles were assessed for success and failure events. These categorical attributional style measures were derived with a new assessment method designed to circumvent the definitional and interpretational problems discussed earlier. In our dimensional/categorical translation method, subjects generated open-ended attributions for a set of hypothetical events. They then rated their own attributions on the key defining dimensions: locus (internality), controllability, and stability. Individual attributions were then assigned to categories (characterological, behavioral, and circumstantial) on the basis of these ratings. The frequency of each type was used as the measure of that attributional style and was correlated with depression and loneliness. We gathered these data on two different samples, using different versions of the various scales. The two samples were combined for all reported analyses.[2] Multiple regression analyses were used to assess the independent contributions of various predictors.

To meet the goal of creating unambiguous measures of the three categories, we used stringent counting rules for each attributional style category. For instance, an attribution for a failure event was counted as a characterological one only if it was rated as internal and stable and uncontrollable. Although this procedure undoubtedly decreased the frequency of each attribution type and was expected to yield relatively low correlations, our

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[2] For each sample, 12 correlations resulted from the design: 3 attribution types (characterological, behavioral, and circumstantial) × 2 outcomes (success and failure) × 2 criteria (depression and loneliness). To ensure that combining correlations across the two samples was appropriate, we tested the differences between each of the 12 pairs of correlations, using a Bonferroni correction against Type I errors. None of the tests approached significance, indicating that the results from the two samples were comparable.

Characteristic	Depression		Loneliness	
	Sample 1	Sample 2	Sample 1	Sample 2
No. women	281	155	288	155
No. men	333	127	337	127
No. items in scale	21	13	20	20
Lowest possible	0	0	20	20
Highest possible	63	39	80	80
90th percentile	16	9	52	55
75th percentile	11	6	43	46
50th percentile	6	3	34	37.5
25th percentile	2	1	29	31
10th percentile	0	0	25	26

goal of fairly testing the basic theoretical propositions could still be met by using a large sample size. That is, in this context, effect size is not an important consideration, although power to detect a weak effect is. In brief, our conservative translation procedure got us the pure measures we needed; a large sample size got us the necessary statistical power.

Method

Subjects

Sample 1

Six hundred eighty undergraduates at a large midwestern university participated for course credit. Students who were not native speakers of English, those who were not United States citizens, and those who were older than 26 were dropped from the sample. Some subjects did not correctly complete all measures relevant to this study. Therefore, the final sample size for analyses involving depression was 614; for loneliness, the final sample size was 625.[3]

Sample 2

Three hundred twenty-one undergraduates at four different universities (one large midwestern university and two large and one small southwestern universities) participated for course credit. Subjects with missing data on any of the measures relevant to this study were dropped from the sample. The final sample size was 282 for both the depression and the loneliness analyses. Table 2 shows the distribution of men and women in both samples. There were approximately equal numbers of men and women. Preliminary analyses yielded no sex effects, so all reported analyses combine across sex.

Instruments

Depression

Sample 1. The full 21-item Beck Depression Inventory (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) was administered. This scale is a widely used measure of intensity of depression and is the most common measure of depression used in studies of attributional style. Each item describes a specific behavioral manifestation of depression. Scores on each item can range from 0, indicating no depressive symptomatology, to 3, indicating a severe level of symptomatology. Total scale scores can thus range from 0 to 63.

Sample 2. The 13-item short-form of the Beck Depression Inventory

(Beck & Beck, 1972) was administered. Because it has fewer items, total scale scores are much lower; the possible range is from 0 to 39.

Loneliness

Subjects in both samples completed the Revised UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980). The scale is based on the assumption that loneliness is a unidimensional construct that varies primarily on experienced intensity or frequency. Each of the 20 items is scored such that a 1 indicates lack of loneliness and a 4 indicates a high level of loneliness. Thus, total scale scores can range from 20 to 80.

Attributional Style

Sample 1. The 20-item dimensional version of the Attributional Style Assessment Test (ASAT-III; Anderson et al., 1988) was used. This scale presents the subject with five hypothetical situations of each of four types: interpersonal success, noninterpersonal success, interpersonal failure, and noninterpersonal failure. Because the distinction between interpersonal and noninterpersonal situations is irrelevant to the main thrust of this article, all reported analyses combine across this dimension so that there are 10 success and 10 failure situations. Subjects imagine themselves in the situations, write down the most likely major cause of the specified outcome, and rate that cause on several standard attribution dimensions (stability, locus, controllability, and globality).

In the present sample, there was one modification to the wording of the stability dimension. In the ASAT-III, stability of a cause refers to "the degree to which the cause can be expected to be present at the same level every time the same situation arises." In this study, *stability* referred to the extent that the cause was expected to be present again in the future, but did not mention the cause being at the same level. The dimensional definitions for locus, controllability, and globality were the same as in the ASAT-III (see Anderson & Arnoult, 1985b, p. 22).

Subjects rated the causes on 9-point scales, with 9s representing more controllable, internal, unstable, and global causes. For this study of frequency of specific attribution types, it was necessary to translate these dimension ratings into appropriate attribution types. The characterological type was defined as any attribution that was rated as uncontrollable (< 5), internal (> 5), and stable (< 5). The behavioral type was defined as any attribution that was rated as controllable (> 5), internal (> 5), and unstable (> 5). These were the two main attribution types of interest. We also assessed a third type. The circumstances type was defined as any attribution that was rated as uncontrollable (< 5), external (< 5), and unstable (> 5). Because globality is not theoretically a part of these attribution types, it was not used.

The number of characterological, behavioral, and circumstantial attributions was counted separately for success and failure items. Because there were 10 success and 10 failure items, a subject could have from 0 to 10 characterological, behavioral, and circumstantial attributions within each outcome.

Sample 2. The same basic materials and definitions were used to assess the frequency of attribution types, with the following exceptions. First, the original ASAT-III definition of stability was used. Second, items were taken from the ASAT-III (as in Sample 1) and from two other attributional style scales, the Attributional Style Questionnaire (Seligman, Abramson, Semmel, & von Baeyer, 1979) and the Balanced Attributional Style Questionnaire (Feather & Tiggemann, 1984). Because a number of hypothetical situations appear on more than one of the scales, the total number of success and failure items was 20 and 18, respectively. Third, the self-generated causes were rated on 5-point scales, with 3 as the midpoint. Thus, the operationalization of charac-

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[3] Portions of this data set were analyzed by way of more traditional dimensional procedures and reported in Anderson and Riger (1991).

Table 3
Relative Frequency (% of Total) of Characterological, Behavioral, and Circumstantial Attributions by Type of Situation

	Characterological		Behavioral		Circumstantial		Total	
	Failure	Success	Failure	Success	Failure	Success	Failure	Succcs
Sample 1								
No. attribution items	10	10	10	10	10	10	10	10
Relative frequency	4.8%	3.1%	12.3%	6.1%	3.1%	1.9%	20.2%	11.1%
Sample 2								
No. attribution items	18	20	18	20	18	20	18	20
Relative frequency	2.0%	1.8%	8.0%	0.9%	3.2%	1.1%	13.3%	3.8%

terological, behavioral, and circumstantial attributions used 3 as the cutoff point.

Procedure

Sample 1

The depression, loneliness, and attributional style instruments were administered in random orders. Testing was done in groups. Within each instrument, the order of items was the same for all subjects. Informed consent was obtained at the start of the testing session. Then the booklets were distributed, with an instruction sheet explaining the tasks. On completion of the tasks, subjects returned their materials to the experimenter and indicated whether they wished to receive further information about the study. Those who requested such information were mailed a thorough debriefing.

Sample 2

The same basic procedures were used, with the following exceptions. First, there were four different versions of the attributional style questionnaire, in which item order and attribution dimension order were varied. Second, a brief written debriefing was administered to all subjects on completion of the questionnaires. A more detailed debriefing was mailed to those who requested it.

Results

Descriptive Summaries

Table 2 presents the sample characteristics on depression and loneliness. The two samples were quite comparable. Sample 1 was slightly less lonely than Sample 2 (Ms = 36.69 and 39.07, respectively). This difference was reliable, $t(915)$ = 3.13, p < .005. Sample 1 appeared to be slightly more depressed than Sample 2, after adjusting for the different number of depression items, but a direct statistical comparison of the two groups was not appropriate. The distributional shapes were comparable in the two samples for both depression and loneliness. On the full-scale measure of depression, the sample contained an appreciable number of mildly and moderately depressed individuals. The standard definition of mild depression on this scale is a total score of 10 to 15. Fully 29% of the sample displayed scores of 10 or greater. Moderate depression is defined as a score of 16-23. Fully 10% had scores of 16 or greater.

Table 3 presents the frequency of characterological, behav-

ioral, and circumstantial attributions for success and failure situations. The most frequent attribution was the behavioral type for failure situations.

As expected, the relative frequencies were low. Indeed, they were small enough that we should expect some attenuation of attributional style correlations with depression and loneliness. This could be a problem if our goal were to produce a new attributional style technique designed to maximize correlations with depression and loneliness. Our goal, however, was to create a measurement technique that would allow us to test theoretically important issues in as clean a fashion as possible. The expected attenuation in correlation size is relevant to those issues only in that it forced us to use larger sample sizes than normal in this area in order to have some power to detect the theoretical effects under consideration. We turn next to those theoretical tests.

Correlational Summaries

Predictions

The main questions of interest are whether the frequencies of characterological and behavioral attributions correlated with measures of depression and loneliness. Theoretically, the frequency of characterological attributions for failure should correlate positively with depression and loneliness, whereas the frequency of behavioral attributions for failure should correlate negatively with depression and loneliness. Blaming stable uncontrollable aspects of oneself for failure is clearly self-defeating. Blaming unstable controllable aspects of oneself for failure, however, allows for a more optimistic view of the future and may energize behavioral attempts to overcome initial setbacks.

Theoretical predictions for characterological and behavioral attributions in success situations are less clear. The internal and stable aspects of characterological attributions seem adaptive when applied to successes; however, the uncontrollable aspect is generally less positive. Similarly, the internal and controllable aspects of behavioral attributions seem adaptive when applied to successes, but the unstable aspect is troubling.

Circumstantial attributions for successes are obviously maladaptive for both affective and motivational reasons, as one is essentially denying credit and viewing the success as unlikely to be repeatable (i.e., it is uncontrollable) or repeated (i.e., the

Table 4

Correlations Between Attribution Style (Success and Failure) and Loneliness and Depression, Combined Across Samples

Criterion problem	Characterological		Behavioral		Circumstantial	
	Failure	Success	Failure	Success	Failure	Success
Depression (n = 896)	.178***	.108**	−.107**	.014	−.072**	.114***
Loneliness (n = 907)	.144***	.071*	−.174***	.006	−.032	.119***

*p < .05.   **p < .005.   ***p < .001.

cause is unstable). The consequences of circumstance attributions for failure are less clear. The external and unstable aspects seem adaptive, but the uncontrollable aspect is maladaptive.

Analysis Strategy

The analysis strategy we used is quite straightforward. We computed the correlations between the various attribution frequency measures and depression and loneliness for each sample separately. Then we averaged the corresponding correlations using a weighted r-to-z transformation process. Multiple regression analyses were also used to give a better idea of how well (or poorly) these attribution frequency measures predict depression and loneliness.

Findings

Zero-order correlations. Table 4 presents the correlations between the attribution frequency measures and depression and loneliness for success and failure situations. As can be seen by these results, the main theoretical predictions were supported. Subjects who attributed imagined failures to characterological causes were more depressed and more lonely than those who did not (ps < .001). Similarly, subjects who attributed failures to behavioral causes were less depressed and less lonely than those who did not (ps < .005). Subjects who attributed successes to circumstances were more depressed and lonely than those who did not (ps < .001). Overall, these three sets of findings confirm the theoretical work of Janoff-Bulman (1979) and replicate the forced choice and the open-ended coding findings summarized in Table 1.

The only empirical anomaly concerned the finding that subjects who attributed successes to characterological causes were more depressed and lonely than those who did not (ps < .05). Neither depression nor loneliness correlated significantly with characterological attributions for success in Anderson et al. (1983). This discrepancy may be the result of the very different approaches used to assess attributional tendencies. The present finding also suggests that the negative implications of the uncontrollable aspect of characterological attributions for success outweigh the positive implications of the internal and stable aspects of such attributions.

Finally, depression and loneliness were both negatively correlated with circumstantial attributions for failure, although only the depression correlation was significant (p < .05). Subjects who attributed failures to circumstances were less depressed than those who did not.

Two remaining questions concern (a) the overall magnitude of the correlation of attributional style and problems in living when the different measures of attributional style are jointly considered and (b) the independent contributions of the different attributional style categories. The forced-choice methodology of previous categorical studies (Anderson et al., 1983) precludes meaningful use of multiple regression techniques, because the predictors are necessarily correlated at high levels. The present method does not force such high (negative) correlations between types of attributions, so a better idea of how well and in what way attributional style categories predict depression and loneliness may be gained by examining the multiple regression results.

Multiple correlations and regression. We first examined the correlations among the attributional style measures. Interestingly, the strongest correlations demonstrated that people tended to use a particular type of attribution across different outcomes. For example, people who made relatively frequent characterological attributions for success also tended to make characterological attributions for failure (r = .34, p < .001) for both the depression sample and the loneliness sample. Frequency of behavioral success and behavioral failure attributions yielded the next highest correlations (rs = .32 and .31, ps < .001, for the depression and loneliness samples, respectively). Finally, frequency of circumstantial success and circumstantial failure attributions yielded the third highest set of correlations among attributional style measures (rs = .19, p < .001, for both the depression and loneliness samples).

All six attribution frequencies (number of characterological success attributions, number of characterological failure attributions, etc.) were entered simultaneously as predictors of depression and loneliness. In both cases, highly significant (ps < .001) correlations resulted. The magnitude was also respectable in both cases, although still smaller than most correlations reported in the forced choice and open-ended coding studies. The depression and the loneliness Rs (across samples) were both .25. Table 5 presents these results.

Do the different types of attributional styles contribute independently to the prediction of depression and loneliness? As noted in the literature review, it could be that one type of attribution (characterological) is particularly maladaptive, but that other types (e.g., behavioral) correlate with depression and loneliness only because of methodological quirks of the forced choice method. The results presented in Table 5 rule out this description. The reported t tests examined the unique variance in the criterion associated with each predictor. It can be seen

Table 5
Multiple Regression Results for the Combined Samples

Predictor	Partial slope	t^a	$p <$
Depression: $R = .25$, $F(6, 889) = 9.68$, $p < .001$			
Characterological failure	.138	3.96	.001
Characterological success	.055	1.59	.112
Behavioral failure	−.101	−2.91	.004
Behavioral success	.065	1.90	.058
Circumstances failure	−.089	−2.69	.008
Circumstances success	.111	3.33	.001
Loneliness: $R = .25$, $F(6, 900) = 10.09$, $p < .001$			
Characterological failure	.108	3.10	.002
Characterological success	.025	0.74	.463
Behavioral failure	−.177	−5.18	.001
Behavioral success	.075	2.20	.028
Circumstances failure	−.047	−1.44	.151
Circumstances success	.109	3.30	.001

[a] For depression, $df = 889$; for loneliness, $df = 900$.

that characterological, behavioral, and circumstantial attributions for failure, and circumstantial attributions for success, all significantly and uniquely predicted depression ($ps < .01$). Similarly, characterological and behavioral failure attributions and behavioral and circumstantial success attributions all predicted loneliness ($ps < .03$). These results further confirm the original conceptualization that characterological and behavioral attributional styles independently contribute to problems in living.

Discussion

Summary

Janoff-Bulman's (1979) theoretical insights into characterological and behavioral self-blame have not been consistently matched by the methods used to assess these attributional styles. The direct rating method in particular does not sufficiently highlight the importance of the control aspects of these attribution types. Our literature review confirmed that the varying results of past studies on self-blame and depression are almost perfectly correlated with the methods used to assess self-blame. Our new dimensional–categorical translation method was designed to test theoretical derivations from Janoff-Bulman in a way that accurately captured the locus, stability, and controllability features of her conceptions while avoiding the methodological confounding problems inherent in our earlier forced choice method (Anderson et al., 1983). Specifically, our methodology was designed to more precisely test Janoff-Bulman's original predictions that characterological attributions for negative events (failure) would be positively associated with depression and that behavioral attributions for negative events would be negatively associated with depression. In addition, we provided tests of a third category of attributions, circumstances, and tested all three types of attribution frequencies for both success and failure situations. The results confirmed that (a) all three types of attributions correlate with depression and loneliness; (b) each type contributes uniquely to the prediction of depression and loneliness; and (c) attributional styles for both suc-

cess and failure situations contribute uniquely to the prediction of depression and loneliness.

Empirical Issues

Low Frequency of Attributional Categories

As expected, the relative frequencies of the three attributional categories were low. There are at least two reasons for this. First, most attributions that most people generate are likely to be depression-neutral. That is, no theoretician in this area expects that even a majority of attributions will fit the ideal depressogenic or nondepressogenic categories. Indeed, it seems unlikely that even truly depressed people will generate a majority of depressogenic attributions. Attribution theory merely asserts that on average, depressed (and lonely) people will generate relatively more maladaptive attributions than nondepressed (and nonlonely) people.

Second, the new dimensional–categorical translation procedure produces many attributions that do not fit the conservative definitions of any of the attribution categories. Any attribution that contained at least one dimensional rating at the scale midpoint was necessarily defined as irrelevant to the categories of interest. We know that people frequently use dimensional midpoints when rating ambiguous stimuli. We also know that open-ended attributions are frequently ambiguous with respect to at least one attribution dimension. Thus, it should come as no surprise that many of the generated attributions did not "count" in the categorical scheme.

This rational analysis suggested two empirical predictions: (a) The frequency of attributions with at least one midpoint rating (out of the three dimensions of locus, stability, and controllability) should be fairly high; (b) This frequency should be higher in Sample 2 than in Sample 1 because the former had fewer nonmidpoint choices available (5-point rather than 9-point rating scales). Our results produced exactly this pattern. In Sample 1, 45% of the failure attributions and 35% of the success attributions had at least one midpoint rating. In Sample 2, the corresponding figures increased to 67% and 52%. Thus, the low frequencies of the attribution types derived from our translation method were neither unexpected nor unreasonable.

Small Effect Size

The correlations reported in Table 4 are generally quite small. Indeed, these correlations are considerably smaller than those reported in Anderson et al. (1983). The multiple correlations reported in Table 5 are certainly respectable, but still are somewhat smaller than the forced-choice correlations obtained in that earlier study of categorical attributional styles. As discussed earlier, one reason has to do with the methodological differences between the forced-choice procedure and the present rating scale translation procedure. The relative frequencies of attributions meeting the present criteria are much smaller than comparable relative frequencies in the forced-choice procedure. For instance, in Study 1 of Anderson et al. (1983), 23% of the failure attributions were to characterological factors (ability and trait). In the present study, only 5% of the failure attributions in Sample 1 and 2% in Sample 2 met the criteria

for being defined as characterological. This is a function of the fact that in a forced-choice methodology, each attribution must fit a predetermined attribution category. This is most obvious in Study 2 of Anderson et al. (1983), where all attributions had to be either characterological or behavioral. The present translation methodology does not do this, resulting in many attributions essentially having no impact on the analyses.

Thus, the low correlations were expected and do not detract from the importance of the results in any way, because the theoretical insights gained from the translation procedure remain wholly valid. However, the low correlations do suggest that practical use of the translation procedure in applied settings may be limited.

Three modifications to our translation method may allow higher correlations to emerge. First, increasing the number of hypothetical situations examined should increase the absolute frequencies of the different types of attributions even if the low relative (%) frequencies remain the same. This increase in absolute frequencies should allow better discrimination between depressed and nondepressed people. Second, increasing the number of scale points (say from 9-point to 15-point rating scales) might further increase both the relative and absolute frequencies of relevant attributions. Third, using even-numbered rating scales (e.g, with 10 points) might further reduce the midpoint ambiguity problem discussed earlier.

These three methodological refinements are likely to improve the correlations somewhat, but we have a theoretical notion suggesting an additional limit to the translation procedure. If people typically make categorical attributions and translate them into dimensions only when forced to do so, then dimensional approaches to the study of attributional style may produce artificially low relations. In essence, there may be something lost in the translation from attribution category to attribution dimension. In the present study there was yet an additional translation, essentially a back translation from the dimensional back to the categorical. Some recent work (Anderson, 1991; Anderson & Deuser, 1993) does suggest that people typically think about attributions in categorical rather than dimensional terms. In the present context, this suggests that additional work on attributional style models of depression and other problems in living may best be done using attributional style measures that focus on attribution types. Such research would nicely complement the dimensional approach that so heavily dominates most current work. Prospective designs using a categorical (type) approach, as well as similar intervention studies, would seem especially valuable. This may very well involve using a forced choice methodology for assessing attributional style. Because psychologists now know that both characterological and behavioral self-blame contribute uniquely to depression and loneliness, future studies can assess both using a forced choice methodology without concern over the confounding problem inherent in this procedure. Alternatively, an open-ended coding method that is explicitly sensitive to all three dimensional features of the key attribution types could be refined and used to test additional categorical attributional style developments.

Finally, it is important to remember that what psychologists typically bemoan as "small" effects are often larger than effects that in other contexts are acknowledged as of immense practical importance. Rosenthal (1990) noted that a major study on as-

pirin and heart attacks was stopped early, because the effect of aspirin on reducing heart attacks was so great that the researchers felt it would be unethical to continue giving the control group placebos. The effect size in terms of a correlation coefficient was .034, considerably smaller than the effect sizes seen in the present study. Other scholars have noted a variety of contextual conditions in which seemingly small effect sizes are judged as important or impressive (e.g., Abelson, 1985; Prentice & Miller, 1992). Two such conditions apply to the present study. First, when one is primarily interested in testing the validity of specific theoretical propositions, effect size is largely irrelevant except for the purposes of estimating the statistical power of various possible sample sizes. Second, when the methodology is known to produce conditions likely to minimize an effect, the discovery of a reliable effect—no matter how small—is impressive.

Conclusions

The categorical approach, best exemplified by Janoff-Bulman's (1979) theoretical analysis, seems to have been pronounced "dead" prematurely. The vast majority of attributional style studies have used a strictly dimensional approach (but see Schoeneman, Stevens, Hollis, Cheek, & Fischer, 1988, for an innovative categorical approach to attributions for smoking cessation). Perhaps the inconsistencies found in early categorical studies led researchers to conclude that the categorical approach was unworkable. We believe that the approach is a valuable one and that it nicely complements the dimensional approach. We hope that our results help revive this most worthy patient.

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