

Structure and Validity of the Attributional Style Questionnaire: A Cross-Sample Comparison

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ABSTRACT. Two correlational studies were conducted to explore the relationship between the Attributional Style Questionnaire (ASQ; Peterson et al., 1982) and broad measures of personality in volunteer ($N = 200$) and occupational ($N = 100$) samples. In both samples, principal component analyses of the ASQ provided evidence for an independence of (a) positive and negative attributional style (AS); (b) positive AS for affiliative and achievement-related situations; and (c) internality and stability/globality, especially for negative AS. Positive AS scales tended to correlate negatively, and negative AS scales positively, with trait anxiety, as measured by the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983); ASQ correlations with the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975) scales suggested that positive AS shared little variance with broad measures of personality, but negative AS seemed to reflect general dysphoria (low extraversion, high neuroticism, and high psychoticism). The implications of these findings for structure, validity, and scoring of the ASQ are discussed.

THE REFORMULATED LEARNED HELPLESSNESS MODEL (RLHM; Abramson, Seligman, & Teasdale, 1978; Seligman, Abramson, Semmel, & von Baeyer, 1979) of depression postulates that causal explanations for actual good and bad events underlie the etiology and maintenance of clinical depression. The RLHM gave rise to the concept of attributional style (AS), which refers to indi-

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vidual differences in the characteristic form of explanations for good and bad events. AS, which is said to influence the etiologically important explanations for actual good and bad events that underlie clinical depression, is most commonly measured by the Attributional Style Questionnaire (ASQ; Peterson et al., 1982).

Despite the well-developed theoretical basis of the RLHM, and the validity of the ASQ in clinical settings (Sweeney, Anderson, & Bailey, 1986) and in achievement/commercial settings (for review, see Seligman, 1991), comparatively little attention has been paid to the factor structure of the ASQ and the relation of ASQ scales to the major dimensions of personality. Furthermore, there is doubt as to the appropriateness of the scoring system of the ASQ, which, *prima facie*, appears not to be wholly consistent with the theoretical basis of the RLHM. In this article, we outline the relevant features of the RLHM and address these interrelated issues.

Based on animal learning paradigms, in which uncontrollable punishment produces helpless behavior, even in the context of reinstated instrumental control (Seligman, 1975), the RLHM shifted emphasis to causal explanations for good and bad outcomes, organized along three axes of (a) internality–externality, (b) stability–instability, and (c) globality–specificity. This reformulation drew upon the work of Weiner (1974), who proposed that attributions of the causes of success and failure can be described in terms of the degree to which explanations are assigned to internal (vs. external) causes that are stable (or unstable) in their influence. The reformulation of the learned helplessness model arose from the identification of empirical problems in the original model (Seligman, 1975).

First, the original model stated that individuals who perceive outcomes to be uncontrollable would assign external attributions for their cause, and, in consequence, develop helplessness deficits. However, depressed patients frequently attribute bad outcomes to internal events (Abramson & Sackeim, 1977), suggesting that internality, and not externality, of causal explanations underpins depression. Second, the *lack of control* hypothesis failed to explain the fact that, when individuals perceive a lack of control, sometimes only small self-esteem losses are found, whereas, at other times large self-esteem losses are found.

For these reasons, Abramson et al. (1978) suggested that negative AS is characterized by stable and global—or *general* (cf. Jackson & Larrance, 1979)—explanations for bad outcomes. Abrahamson et al. hypothesized that only stable attributions of internal cause for bad outcomes would lead to chronic depression, and unstable internal attributions for bad outcomes would lead to short-term depression. Thus, internality and stability/globality were seen as being relatively independent developments in AS theory and were conceptualized as theoretically distinct components of AS.

The impetus for the studies reported in this article derived from the apparent incongruence between what the RLHM predicts and the actual scoring system of the ASQ. This apparent problem is compounded by the paucity of data relating to the actual factor structure of the ASQ. A related issue concerns the construct

nature of the ASQ scales: How do they correlate with the well-established traits of personality?

To explore these issues, we conducted two studies, one in a normal sample of volunteers and another in an occupational group. Nonclinical samples allowed us to explore the normal range of scores in AS and general personality and permitted factor analytical and correlational analyses. The study of these two populations also provided for the cross-validation of results.

In both studies, we investigated the factor structure of the ASQ, and the relation of the ASQ to the factor space defined by the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975). The Eysenckian three-dimensional system was chosen because it is widely accepted in the personality literature as representing the most reliable and valid description of higher order personality space.

The theoretical basis of the RLHM could be interpreted as suggesting that the internality scale of the ASQ might reflect a different factor to the stability and globality scales. The stability and globality scales, both jointly relating to a single factor of *generality* (Jackson & Larrance, 1979), might be taken to represent a second factor. This argument predicts that two factors for AS for bad events would be found, reflecting internality, and stability/globality. The possible structure of AS for good events is less clear, given that the theoretical development of the RLHM has focused almost exclusively upon AS for bad events (there is no strong reason to assume that the structure of AS for good and bad events would differ).

As regards personality, the RLHM might suggest that AS for bad events should be correlated with anxiety (and low extraversion, high neuroticism), given the association between clinical depression and anxiety, as well as the general dysphoria aspect of negative AS implied in the formulation of the model. AS for good events should be most correlated with extraversion, because both AS for good events (loosely defined as optimism) and extraversion share a common feature of positive emotion. However, if internality and stability/globality represent different factors, then we might expect this difference to be reflected in different correlations with general personality (however, the literature does not allow precise predictions to be made).

For clarity, the factor analytical results from the two samples are presented in Study 1, and the ASQ correlations with personality are presented in Study 2.

Method

Participants

Volunteers ($N = 200$) were recruited through advertisements placed in local newspapers. The volunteer sample included 100 men (M age = 27.33 years, $SD = 8.07$) and 100 women (M age = 25.43 years, $SD = 6.39$). The occupational sample included 100 salesmen (M age = 31.55 years, $SD = 7.61$) recently employed by a large British insurance company.

Psychometric Materials

AS was measured by the ASQ, which contains 12 hypothetical situations split equally into positive AS (CoPos) for (a) good affiliative (CoPosaff) and (b) good achievement-related situations (CoPosach), and negative AS (CoNeg) for (a) bad affiliative (CoNegaff) and (b) bad achievement-related situations (CoNegach). Respondents rated each causal attribution on three 7-point scales: (1) internality-externality, (2) stability-instability, and (3) globality-specificity. Internality, stability, and globality are usually simply summed to derive composite positive attributional style (CoPos: CoPosaff + CoPosach) and composite negative attributional style (CoNeg: CoNegaff + CoNegach).

Following Mitchell (1989), CoPosaff/CoPosach and CoNegaff/CoNegach scales were divided in terms of Internality (I), Stability (S), and Globality (G), giving a total of 12 ASQ subscales (Table 1).

The broad personality dimensions of extraversion (E), neuroticism (N), psychoticism (P), and lie (L) were measured by the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975). Also, in the volunteer sample only,

TABLE 1
Means and Standard Deviations for Personality
and ASQ Factors

Scale	<i>M</i>	<i>SD</i>	Scale	<i>M</i>	<i>SD</i>
EPQ:E	12.67	4.84	Posach(G)	4.63	1.28
EPQ:N	12.57	4.98	CoPosach	4.87	0.88
EPQ:P	6.15	3.43	Negaff(I)	4.18	1.11
EPQ:L	4.99	3.47	Negaff(S)	4.03	0.96
EPS:Imp	9.03	4.53	Negaff(G)	3.77	1.33
STAI:Anx	41.82	9.26	Negaff	3.99	0.85
Posaff(I)	5.28	0.94	Negach(I)	4.68	1.27
Posaff(S)	5.13	0.80	Negach(S)	4.51	1.07
Posaff(G)	4.72	1.11	Negach(G)	4.19	1.40
CoPosaff	5.04	0.67	CoNegach	4.47	0.86
Posach(I)	4.95	1.12	CoPos	4.96	0.65
Posach(S)	5.02	1.03	CoNeg	4.23	0.74

EPQ, Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975); E, extraversion; N, neuroticism; P, psychoticism; L, lie. EPS, Eysenck Personality Scales (Eysenck & Eysenck, 1991) IVE scale; Imp, impulsivity. STAI, State-Trait Anxiety Inventory (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983); Anx, trait anxiety. CoPos, positive attributional style (AS); CoNeg, negative AS; CoPosaff, positive AS for affiliative situations; CoPosach, positive AS for achievement related situations; CoNegaff, negative AS for affiliative situations; CoNegach, negative AS for achievement-related situations. I, Internality; S, Stability; G, Globality.

Impulsivity (Imp) was measured by the Impulsiveness scale of the IVE Questionnaire (which forms a part of the Eysenck Personality Scales, EPS; Eysenck & Eysenck, 1991); trait anxiety was measured by the State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983).

Procedure

Volunteers were tested individually as part of a laboratory-based experiment. Before the experimental task (not relevant to this study), respondents completed the STAI, IVE, EPQ, and ASQ. The occupational sample was tested in groups during induction training. An experienced trainer, skilled in psychological testing procedures, administered the questionnaires.

Statistical Analysis

We computed a principal components analysis, using Kaiser's unity criterion for extraction and varimax rotation to simple structure, for the 12 ASQ scales. Pearson product-moment correlations were computed between the original and derived factors and the major dimensions of personality. Because of the computation of multiple correlations, alpha was set at .01.

Study 1: ASQ Factor Structure

Few studies have been dedicated to the examination of the factor structure of the ASQ, and of those conducted, results have been ambiguous. For example, Arntz, Gerlisma, and Albersnagel (1985) performed a confirmatory factor analysis of internality, stability, and globality scales for good and bad events. They concluded that there was only weak evidence for the hypothesized ASQ scales, with each factor separately accounting for a small percentage of variance (3.7% to 7.4%), and that stable and global scales correlated almost perfectly after correction for attenuation, especially for bad outcomes. These results led Arntz et al. to state that stability and globality factors "correlate so highly that their distinction becomes rather hazardous" (p. 65).

Using varimax rotation, Furnham, Sadka, and Brewin (1992) found that, for both positive and negative attributions, internality-externality loaded on a different factor from the one defined by stability and globality, supporting the Arntz et al. (1985) finding of an independence of internality and stability/globality.

Problems with the factor structure of the ASQ have led some authors to the conclusion that the concept of AS is of dubious value. For example, after examining the internal reliability and factor structure of the ASQ's negative situations, Cutrona, Russell, and Jones (1984) concluded that "the results of these two studies raise serious questions concerning the attributional style concept" (p. 1054).

However, as already noted, the theoretical basis of the RLHM suggests that

internality should be distinct from stability and globality. For this reason, these factor analytical studies could be interpreted as *supporting* the RLHM but, simultaneously, challenging the scoring system of the ASQ, which ignores this distinction. Given the fact that the ASQ is the most popular measure of AS, this is an important problem that needs clarification.

Results and Discussion

Table 1 contains the means and standard deviations for the personality and ASQ scales of the volunteers. Table 2 contains the principal components analysis of the ASQ subscales. The final structure (explaining 61% of variance) was composed of four components. The first reflected stability/globality for bad situations (NegSG); the second reflected positive AS for achievement-related situations (CoPosach); the third component reflected positive AS for affiliative situations (CoPosaff); and the fourth reflected internality for bad situations (NegI). Extraction of three components resulted in a collapse of CoPosaff and CoPosach to form a single component of CoPos; no collapse of internality for bad situations with stability and globality scales was observed.

Table 3 contains the means and standard deviations (SDs) for the personality and ASQ scales of the occupational sample. E, L, and CoPos were higher, and N, P, and CoNeg were lower, than in the volunteer sample.

TABLE 2
Varimax Rotated Principal Components Analysis of
ASQ Subscales (Loadings > .4)

Subscale	F1	F2	F3	F4	h^2
Posaff(I)			.557		.587
Posaff(S)			.638		.472
Posaff(G)			.806		.734
Posach(I)		.628			.628
Posach(S)		.857			.737
Posach(G)		.757			.677
Negaff(I)				.724	.603
Negaff(S)	.692				.552
Negaff(G)	.741				.623
Negach(I)				.764	.628
Negach(S)	.645				.482
Negach(G)	.750				.601
Eigenvalue	2.50	2.36	1.36	1.10	
% variance	20.9	19.7	11.3	9.1	

Note. A 3-factor solution produced a combined factor of 2 and 3.

TABLE 3
Means and Standard Deviations for Personality
and ASQ Factors

Scale	<i>M</i>	<i>SD</i>	Scale	<i>M</i>	<i>SD</i>
EPQ:E	17.16	3.08	CoNegach	5.82	.80
EPQ:N	7.00	4.40	Negaff(I)	4.15	1.28
EPQ:P	1.86	1.90	Negaff(S)	4.00	1.13
EPQ:L	7.30	3.56	Negaff(G)	3.30	1.50
Posaff(I)	5.94	.84	CoNegaff	3.81	.99
Posaff(S)	5.64	.88	Negach(I)	4.61	1.37
Posaff(G)	5.22	1.28	Negach(S)	4.24	1.38
CoPosaff	5.60	.72	Negach(G)	3.51	1.48
Posach(I)	5.74	.96	CoPosach	4.12	.96
Posach(S)	5.98	.93	CoNeg	5.71	.64
Posach(G)	5.74	1.13	CoPos	3.95	.88

Note. See Table 1 for abbreviations.

Table 4 contains the principal components analysis final solution (explaining 64% of the variance), revealing a similar structure to that reported in the volunteer sample. The first component was composed of stability/globality for bad situations (NegSG); the second reflected positive AS for achievement-related situations (CoPosach; but this component also contained the Internality scale for the positive affiliative situations); the third component reflected stability and globality scales for positive affiliative situations (PosaffSG); and the fourth component reflected internality for bad situations (NegI). Only Negaff(I) failed to load highly onto one factor (the low communality for this factor indicated that it was poorly represented by the final model).

The finding that the Internality scale for good affiliative situations loaded onto the same component as that of achievement-related items has a number of possible explanations. This could be a chance finding that would not withstand replication; or it could reflect the structure of AS for good outcomes in the specific occupational sample tested. These possibilities should be examined in future studies.

Taken together, the results from the two samples suggest that CoPos and CoNeg are separate constructs, with a relatively homogeneous set of items for positive AS. In both samples, internality for bad events was largely independent of stability and globality scales. In the occupational sample, there was evidence for a distinction between CoPosaff and CoPosach, possibly reflecting the commercial nature of the sample. This finding is consistent with the differential predictive validity of affiliative and achievement-related attributions in commercial samples (Corr & Gray, 1996).

How far does the factor structure of the ASQ correspond to the theoretical rationale of the RLHM on which it is based? For bad situations, there was im-

TABLE 4
Varimax Rotated Principal Components Analysis of
ASQ Subscales (Loadings > .4)

Subscale	F1	F2	F3	F4	<i>h</i> ²
Posaff(I)		.538			.366
Posaff(S)			.714		.623
Posaff(G)			.768		.692
Posach(I)		.717			.604
Posach(S)		.812			.693
Posach(G)		.745			.554
Negaff(I)	.467		-.464	.407	.611
Negaff(S)	.704				.529
Negaff(G)	.879				.814
Negach(I)				.912	.842
Negach(S)	.742				.688
Negach(G)	.780				.677
Eigenvalue	3.06	2.16	1.42	1.05	
% variance	25.5	18.0	11.8	8.8	

Note. See Table 1 for abbreviations.

pressive support for the distinction between Weiner's (1974) internality–externality and stability–instability constructs (globality seemed little different from stability). It is easy to see how a causal attribution for bad events that “will always be present” (stability) will also be rated as “influences all situations in my life” (globality), giving rise to the putative construct of *generality* (Jackson & Larrance, 1979). These findings support the distinction between internality and stability/globality in the RLHM. For good situations, however, internality and stability/globality tended to go together, suggesting that the structure of positive and negative explanation are not identical.

Study 2: ASQ/Personality Correlations

The relation between ASQ scales and well-established traits of general personality has not been clarified by previous research (e.g., Rim, 1991). Given the influence of AS and traits such as anxiety, psychoticism, neuroticism, and extraversion on psychopathology, we thought it important to establish ASQ/personality interrelations.

Nezu, Nezu, and Nezu (1986) reported that CoPos was negatively correlated and CoNeg positively correlated with measures of depression, trait/state anxiety, and psychosomatic complaints; and that CoPos was positively correlated and CoNeg negatively correlated with assertiveness. Mitchell (1989) correlated

the ASQ with traits from the Comrey (1970) Personality Scales (CPS) and found that (a) only CoNeg scales were correlated with social desirability (also reported by Corr & Gray, 1995); (b) CoPos was positively correlated with orderliness (vs. lack of compulsion) and activity (vs. lack of energy); (c) CoNeg was negatively correlated and CoPos positively correlated with emotional stability (vs. neuroticism) and extraversion (vs. introversion).

Given the empirical association between ASQ and personality, the question of interpretation arises. One interpretation is that "explanatory style is a stable trait, a relatively constant aspect of a given individual's personality" (Burns & Seligman, 1989, pp. 471-472). Support for the traitlike nature of AS comes from several sources. Test-retest reliability over a 5-week period for CoPos is 0.70, and for CoNeg, 0.64 (Peterson et al., 1982); the temporal stability of CoNeg ($r = .54$) over 52 years (Burns & Seligman, 1989); long-term predictive effects in terms of depression (Peterson & Seligman, 1984; Robins, 1988; Sweeney et al., 1986); and genetic liability for CoNeg (Schulman, Keith, & Seligman, 1993). The traitlike nature of CoNeg is clearer than that of CoPos, suggesting that CoNeg would correlate more strongly with traits of personality than would CoPos.

Results and Discussion

Table 5 contains the correlations between ASQ scales and personality traits of the volunteers. Anxiety correlated negatively with most of the positive AS subscales, which reached formal significance in the case of CoPos_{aff} and CoPos_{ach}. Anxiety correlated positively and consistently with the stability and globality scales of the bad situations but not with the internality subscales. This finding might be seen to parallel the independence of internality and stability/globality revealed by the principal components analysis. Positive AS tended to be negatively correlated with anxiety.

No significant EPQ correlations were found for the good situations. Negative AS correlated with all EPQ scales in a direction suggesting general dysphoria: low extraversion, high neuroticism, and high psychoticism. Computation of separate negative AS internality and stability/globality factors, as suggested by the RLHM and indicated by the principal components analysis results, showed that internality was significantly related only to psychoticism and unrelated to anxiety, whereas stability/globality were significantly correlated with all EPQ scales and anxiety in the direction of general dysphoria.

None of the ASQ subscales correlated with impulsivity, despite the fact that impulsivity is highly correlated with both extraversion and psychoticism (Eysenck & Eysenck, 1991).

Table 6 contains the correlations of personality with ASQ scales of the occupational sample. Positive AS for achievement-related situations was correlated positively with E, but no correlations with either N or P were noted, save a negative correlation of Pos_{aff}(I) with N. As in the volunteer sample, internality for a

TABLE 5
Pearson Product-Moment Correlations Between ASQ
Factors and Broad Measures of Personality

Scale	E	N	P	L	Imp	Anx
Posaff(I)	.111	-.125	-.116	-.046	.021	-.192*
Posaff(S)	.157	-.109	.013	-.024	.014	-.217*
Posaff(G)	-.113	.143	.094	-.056	.013	-.039
CoPosaff	.052	-.023	.115	-.065	.024	-.198*
Posach(I)	.139	-.067	-.129	-.045	.094	-.115
Posach(S)	.088	-.031	.109	-.088	.091	-.189*
Posach(G)	-.056	.025	.088	-.092	.075	-.001
CoPosach	.061	-.029	.034	-.098	.101	-.125
CoPos	.072	-.038	.081	-.095	.082	-.194*
Negaff(I)	.131	.043	.223*	-.033	.043	.065
Negaff(S)	.173	.063	.265*	.190*	.046	.163
Negaff(G)	-.245*	.205*	.276*	-.163	.129	.222*
CoNegaff	-.253*	.147	.339*	-.176	.119	.208*
Negach(I)	-.051	-.113	.102	.016	.057	.056
Negach(S)	-.187*	.259*	.235*	-.326*	.086	.202*
Negach(G)	-.241*	.271*	.240*	-.240*	.060	.303*
CoNegach	-.231*	.195*	.275*	-.218*	.094	.218*
CoNeg	-.288*	.194*	.349*	-.230*	.120	.245*
Neg(I)	-.111	.051	.193*	-.067	.062	-.002
Neg(SG)	-.298*	.275*	.337*	-.281*	.121	.307*

Note. See Table 1 for abbreviations.

* $p < .01$, two-tailed.

bad affiliative situation was correlated positively with psychoticism. Once again, negative AS was associated with general dysphoria, although the correlations did not reach formal significance.

General Discussion

Two studies examined the internal structure of the ASQ and the relationship of ASQ scales to general traits of personality. The results help to clarify several outstanding issues in the literature concerning the structure and validity of the ASQ in nonclinical populations.

The principal components analyses for both samples strongly indicated that for bad outcomes (and to a lesser extent for good outcomes) internality is relatively independent of stability/globality. This result is consistent with previous factor analyses of AS instruments (Arntz et al., 1985; Furnham et al., 1992), in which stability and globality seem difficult to distinguish, and, arguably, is consistent with the theoretical basis of the RLHM, in which internality and stabili-

TABLE 6
Pearson Product-Moment Correlations Between ASQ
Factors and Broad Measures of Personality

Scale	E	N	P	L
Posaff(I)	.036	-.254*	-.187	-.249
Posaff(S)	.071	-.120	-.106	.073
Posaff(G)	.038	-.092	.044	.029
CoPosaff	.065	-.201	-.089	.143
Posach(I)	.151	-.019	.006	-.019
Posach(S)	.305*	.016	-.043	-.046
Posach(G)	.321*	-.001	-.009	-.062
CoPosach	.323*	-.001	-.018	-.054
CoPos	-.249	-.117	-.062	.048
Negaff(I)	-.123	.235	.301*	.145
Negaff(S)	-.106	.119	.124	-.166
Negaff(G)	-.194	.158	.096	-.181
CoNegaff	-.192	.228	.228	-.219
Negach(I)	-.155	.046	.229	-.152
Negach(S)	-.156	.069	.051	.046
Negach(G)	-.106	.201	.192	-.236
CoNegach	-.203	.158	.231	-.171
CoNeg	-.211	.222	.286*	-.251
Neg(I)	-.164	.189	.343*	-.277*
Neg(SG)	-.178	.180	.183	-.197

Note. See Table 1 for abbreviations.

* $p < .01$, two-tailed.

ty/globality are seen as distinct constructs. Additional evidence for the internality and stability/globality distinction comes from temporal stability studies (e.g., Burns & Seligman, 1989), which suggest that only *hopelessness* (i.e., stability + globality) is temporally stable.

The degree to which CoPos and CoNeg are truly personality traits cannot be fully resolved by these findings, but some general conclusions can be drawn. CoNeg seems very close to general dysphoria, correlating with introversion, neuroticism (and anxiety), and psychoticism. CoPos was relatively independent of broad measures of personality, correlating only with the extraversion scale of the EPQ in the occupational sample and then only with achievement-related subscales. In support of the independence of positive AS from broad traits of personality, the predictive study by Peterson et al. (1982) and the genetic study by Schulman et al. (1993) point to a lack of temporal stability and genetic influence on CoPos; and CoPos does seem more malleable and less temporally stable than CoNeg (Burns & Seligman, 1989; Schulman et al., 1993).

It was intriguing that internality for bad events was associated with psy-

choticism, whereas the stability/globality scales in CoNeg were associated with anxiety. Whether this difference in the pattern of correlations has an important etiology role needs further investigation. In particular, it would be interesting to examine the hypothesis that, underlying the etiology of depression is a two-component process of psychoticism-related internal attributions for bad events, which then, if the individual is high in anxiety, take on *general* (stable and global) attributional features.

Findings from both studies are consistent with the theoretical underpinnings of the RLHM, but at the same time indicate that a re-evaluation of the ASQ's scoring system is required. The results suggest that (a) internality and stability/globality (or generality) should be scored separately (especially for negative situations); (b) positive AS for affiliative and achievement-related events should be treated as relatively independent; and (c) ASQ scales should not be treated as additive components, but a multiplicative approach to data analysis should be adopted.

Several limitations of the samples and methods need to be acknowledged. The sample sizes in both studies were relatively small. However, the respondents ratios were within acceptable limits (Barrett & Kline, 1981) for robust factor analytical results to emerge; and the two factor structures were highly similar, lending support to their validity. But the applicability of the present results needs to be confirmed in clinical populations to support the finding that internal-external causal explanations are separate from stability-instability and globality-specificity factors for bad events.

The results show a replicable internal structure of the ASQ, which is consistent with the theoretical formulations of the RLHM, and an association between ASQ scales and general personality. The results help to clarify AS in normal and occupational samples and point to several new lines of research in the theory, scoring, and analysis of the ASQ.

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