

Chapter 14

Optimistic Attributional Style as a Predictor of Well-Being and Performance in Different Academic Settings*

Tamara O. Gordeeva and Evgeny N. Osin

Attributional style (or explanatory style) is a specific way people explain the causes of different events in their lives. Seligman and his colleagues introduced the concept of attributional style with three parameters (internality, stability and globality) and proposed a distinction between optimistic and pessimistic attributional styles (Seligman, Abramson, Semmel, & Von Baeyer, 1979). Attributional style became the central notion within the reviewed learned helplessness theory (Abramson, Seligman, & Teasdale, 1978) and its more recent revision, the theory of hopelessness (Abramson, Metalsky, & Alloy, 1989).

Attributional style was originally proposed as a cognitive factor of depression (Seligman et al., 1979). Meta-analytic studies of the relationship between explanatory style and depression (Mezulis, Abramson, Hyde, & Hankin, 2004; Sweeney, Anderson, & Bailey, 1986) have confirmed a strong association between uni-polar depression and pessimistic explanation of negative events (using internal, permanent, and pervasive causes), as well as positive events (using external, unstable, and local causes), although the association was weaker in the latter case.

Recently, the focus in attributional style research has shifted from helplessness, depression, and pessimism toward the relationship between optimistic attributional style and psychological well-being (Cheng & Furnham, 2001, 2003; Sanjuan & Magallares, 2009). A number of studies have revealed better health and increased longevity in people with optimistic attributional style (Peterson, 2000; Peterson & Seligman, 1987; Peterson, Seligman, & Vaillant, 1988).

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T.O. Gordeeva
Moscow State University, Moscow, Russia

E.N. Osin (✉)
State University, Higher School of Economics, Moscow, Russia
e-mail: keen-psy@mail.ru

Attributional Style Questionnaire (ASQ) is the most widely used psychometric instrument for measuring attributional style (Peterson et al., 1982; Seligman et al., 1979). Initial studies were done with three parameters of attributional style: internality, stability, and globality. However, the internal consistency of the scales measuring internality ranged from moderate (Peterson et al., 1982) to low (Cutrona, Russell, & Jones, 1985; Furnham, Sadka, & Brewin, 1992; Tennen & Herzberger, 1985; Xenikou, Furnham, & McCarrey, 1997), and for this reason, the internality parameter was abandoned in more recent studies (Martin-Krumm, Sarrazin, Peterson, & Famose, 2003; Peterson & Vaidya, 2001; Peterson et al., 2001) and theoretical works (Abramson et al., 1989; Peterson, 2000; Seligman, 2002).

Instead, serious arguments were proposed in favor of a controllability parameter, since it was shown that experienced inability to control the events leads to helplessness and depression (Seligman, 1975). The studies which used the controllability parameter provided sound evidence for its importance: it was found to be a reliable predictor of depression, loneliness, and anxiety, as well as of positive emotional reactions and positive future expectations and performance (Deuser & Anderson, 1995). A number of new questionnaires measuring attributional style include controllability scales (ASAT, Anderson & Arnoult, 1985; WASQ, Ashforth & Fugate, 2006; ASAT-III, ASAT-IY, Anderson & Riger, 1991; CDS, Russel, 1982; SFASQ, Gordeeva, Osin, & Shevyakhova, 2009).

The Attributional Style for Positive and Negative Events and Achievement in Different Domains

The studies exploring the relation of attributional style to achievement in different domains have produced contradictory results. The association of explanatory style for *negative events* with professional success was first shown by Seligman and Shulman (1986) in an insurance agent sample. The research exploring the association of attributional style for negative events with academic and sports achievement was most extensive and also the most contradictory in terms of outcomes. In several studies, optimistic attributional style was found to be associated with *higher* grades (Martinez & Sewell, 2000; Peterson & Barrett, 1987; Rowe & Lockhart, 2005; Yates & Yates, 1995) and better sport performance (Seligman, Nolen-Hoeksema, Thornton, & Thornton, 1990); other studies, in contrast, have revealed its association with *lower* levels of academic achievement (LaForge & Cantrell, 2003; Yee, Pierce, Ptacek, & Modzelesky, 2003) and sport performance (Davis & Zaichkowsky, 1998), and some studies failed to reveal any significant association (Bridges, 2001; Hale, 1993; Musgrave-Marquart, Bromley, & Dalley, 1997; Satterfield, Monahan, & Seligman, 1997; Ward, 2003; Yee et al., 2003).

Optimistic attribution style for negative events may have both advantages and disadvantages. Optimistic thinking (viewing negative events as external, unstable, specific) may promote hope and lead to increased persistence, but it may also lead to relaxation and withdrawal of effort. In turn, pessimistic thinking (viewing negative events as internal, stable, and global) may entail helplessness and passivity, but it may

also result in investing more effort and energy into activity. For instance, students who gave pessimistic explanations to their poor examination performance tended to make more plans to study for the next examination (Follette & Jacobson, 1987).

In their early work testing the reformulated helplessness theory, Seligman et al. (1979) reported that scores for internality and stability of *positive events* on the ASQ were inversely associated with depression, but the relationship was weaker than that found for negative situations. A meta-analysis of 104 studies (Sweeney et al., 1986) confirmed this finding, and it became a common practice to measure attributional style using only negative events or to calculate a composite difference score by subtracting positive event scores from negative event ones.

However, the results of empirical studies indicate that attributional styles for positive and negative events are distinct variables. For instance, it was shown that workers who rated positive events highly on a single dimension of attributional style did not necessarily rate negative events low on the same dimension (Xenikou et al., 1997). Low correlations between attributional scales for positive and negative events have been reported by other researchers as well (Peterson & Seligman, 1984; Zautra, Guenther, & Chartier, 1985). These results suggest that discounting positive events or calculating a single composite score is a questionable practice which leads to the confounding of these distinct constructs, resulting in a blurred overall picture.

Needles and Abramson (1990) proposed a model of recovery from depression, hypothesizing that depressed persons who tend to attribute positive life events to global and stable causes ("enhancing" attributional style) are likely to become hopeful (and thus less depressed) when positive events occur; the model was supported in a longitudinal study using depressed college students (Needles & Abramson, 1990). Several other studies have produced consistent findings, indicating the important role of positive event attributions in the recovery from depression. For instance, optimistic attributional style for positive events was associated with lower level of depression symptoms in people with clinical depression (Johnson, Crofton, & Feinstein, 1996; Johnson, Han, Douglas, Johannet, & Russell, 1998; Voelz, Haefel, Joiner, & Wagner, 2003), as well as in male prisoners with no depression history prior to imprisonment (Peterson & Seligman, 1984). More recently, explanations of positive events were shown to be important predictors of psychological well-being, self-esteem, and effective coping strategies (Cheng & Furnham, 2003; Rigby & Huebner, 2005; Sanjuan & Magallares, 2009; Sanjuan, Perez Garcia, Rueda, & Ruiz, 2008).

The association between attributional style for positive events and achievement has received relatively little research attention so far, although the findings are promising. For instance, in the domain of professional achievement, it was found that attributional style for positive events (in contrast to the negative ones) predicted work performance in British insurance company salespeople (Corr & Gray, 1996) and work adjustment in pharmaceutical company managers (Ashforth & Fugate, 2006). In the academic domain, it was found that higher mathematics achievement in elementary schoolchildren is associated with optimistic explanatory style for positive events (Yates & Yates, 1995), but in a sample of law school students, its association with performance was negative (Satterfield et al., 1997). Clearly, more research is needed to replicate this finding in different age groups and educational and professional contexts.

A few reasons can be addressed in order to explain the seeming contradictions between the results of different studies linking attributional style and performance in activity: (1) *Activity type* – According to Seligman (1990), optimistic people are likely to be more successful in activities that require persistence and initiative and that involve high risk of disappointment or rejection by others; at the same time, there are professions in which mild pessimism resulting in prudence and stronger sense of reality could be an advantage. For instance, optimistic explanatory style was shown to be beneficial for salespeople (Corr & Gray, 1996; Seligman & Shulman, 1986), but optimistic explanations of positive events made a negative impact upon academic success and performance of law school students (Satterfield et al., 1997); (2) *Activity difficulty* – One study (Gibb, Zhu, Alloy, & Abramson, 2002) has found the relationship between attributional style for negative events and academic performance in college students to be dependent on their academic ability levels: pessimism was associated with lower GPAs in students with lower ability but was beneficial for high-ability students; (3) *Measurement confusion* – Different studies use different and often incomparable measures of attributional style. Some researchers do not differentiate attributional styles for positive and negative events and only report composite scores, which do not allow to estimate unique contributions of the two attributional styles to observed effects; (4) *Other variables* – The effects of optimism upon performance might be mediated by other variables, such as expectations, goals or anxiety. For instance, Martin-Krumm and Salama-Younes (2007) found that the effect of attributional style upon school grades was mediated by expectations of success (the authors do not clarify the type of attributional style that contributed to performance, using a composite score).

Two studies were undertaken to investigate the relationship between explanatory style for positive and negative events, well-being, and performance in two different academic settings.

Study 1: Attributional Optimism, Well-Being, and Academic Achievement at School

Aim

The aim of the first study was to investigate the relationship of optimistic attributional style to well-being and academic performance in high school students.

Method

Participants

The sample comprised students of several high schools in Russian cities of Moscow, Magadan, and Bijsk ($N = 224$) aged between 14 and 18 (mean age was 15.3 years, standard deviation 0.98); 38% were male.

Instruments

Success and Failure Attributional Style Questionnaire for Adolescents (SFASQ-A, Gordeeva et al., 2009) was used to measure attributional style. A set of 24 positive and negative life situations was developed on the basis of ASQ and its extended versions, Adversity Quotient Questionnaire (Stoltz, 1999), and approximately one-third of the situations were original, formulated in accordance with the ASQ logic for Russian culture. Each situation is rated on two out of three parameters (stability, globality, and controllability) using a response scale with points ranging from 1 to 6, anchored by “This cause will never arise again... will exist always” (stability), “This cause is associated with this specific situation... all situations of my life” (globality), “This cause is outside my control... I can control completely” (controllability). The scale internal consistency (Cronbach’s alpha coefficient) was .83 for both positive and negative event scales and ranged between .70 and .82 for the stability, globality, and controllability parameter subscales. No significant gender differences were found on any of the SFASQ scales.

Russian versions of three other questionnaires were used to measure well-being and to control for self-esteem, which could possibly explain the association between optimistic attributional style and achievement. *Subjective Happiness Scale* (Lyubomirsky & Lepper, 1999), a four-item measure with a seven-point response scale and both *Trait Depression Scale* (Ritterband & Spielberger, 1996) and *Self-Esteem Scale* (Rosenberg, 1965), which have ten-item measures using four-point response scales. The internal consistencies (Cronbach’s alpha coefficient) of all these scales were adequate, ranging from .75 for the self-esteem scale to .79 for the trait depression scale. Each total score was divided by the number of items in the respective scale.

In addition to completing the questionnaires, students were asked to indicate their last term’s grades in four principal school subjects (Algebra, Geometry, Russian language, and Literature). The academic performance in Russia is evaluated on a five-point scale (5 – excellent, 4 – good, 3 – satisfactory, 2 – unsatisfactory; 1 is never used in practice). The grades were averaged, resulting in an academic achievement indicator with a Cronbach’s alpha coefficient reliability of .82.

Procedure

The students anonymously completed a battery of tests administered by a psychologist in a group setting during their regular school hours. Individual feedback on personality traits was offered as a reward for participation.

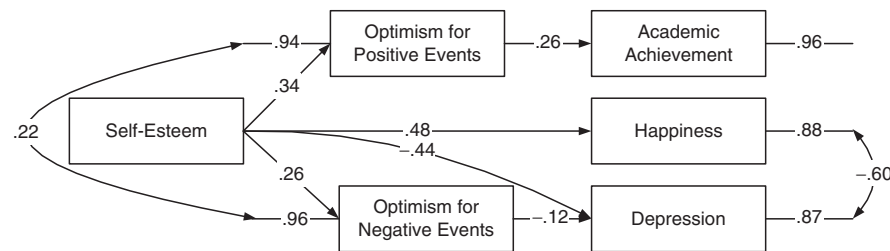
Results

The Association of Optimism with Well-Being and Academic Achievement

The correlations between optimism and other study variables are presented in Table 14.1. Optimistic attributional style for positive events demonstrated modest

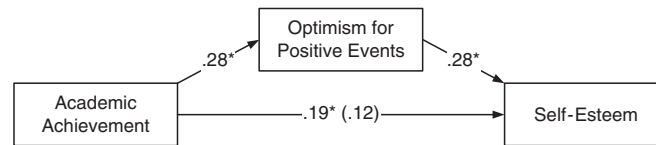
Table 14.1 Descriptive statistics and Pearson correlations between optimism and other studied variables

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---------------------------|--------|-------|-------|-------|-------|-------|-------|------|------|
| 1. Depression | – | | | | | | | | |
| 2. Happiness | -.68** | – | | | | | | | |
| 3. Self-Esteem | -.46** | .48** | – | | | | | | |
| 4. SFASQ: Stability | -.35** | .28** | .31** | – | | | | | |
| 5. SFASQ: Globality | -.26** | .21** | .36** | .61** | – | | | | |
| 6. SFASQ: Controllability | -.14* | .10 | .15* | .34** | .27** | – | | | |
| 7. SFASQ: Positive events | -.19** | .22** | .30** | .44** | .48** | .70** | – | | |
| 8. SFASQ: Negative events | -.30** | .17* | .24** | .78** | .69** | .55** | .25** | – | |
| 9. Grade Average | -.03 | .12 | .17* | .13 | .23** | .05 | .26** | .02 | – |
| M | 1.87 | 4.87 | 3.25 | 4.18 | 4.39 | 4.08 | 4.33 | 4.14 | 3.66 |
| SD | 0.48 | 1.09 | 0.42 | 0.66 | 0.61 | 0.83 | 0.79 | 0.62 | 0.53 |

* $p < .05$; ** $p < .01$ Chi-square = 6.79, $df = 7$, $p = .45$; RMSEA < .001, CFI > .999, NFI = .98, SRMR = .03Notes: All path coefficients shown are significant ($p < .05$)**Fig. 14.1** Path diagram of the associations between optimism, well-being, and academic achievement, controlling for self-esteem

positive association with academic achievement, which was also associated with self-esteem. Both optimistic attributional styles for positive and negative events were associated with measures of subjective well-being and self-esteem.

To clarify these associations, a path model was tested using EQS 6.1 (maximum likelihood estimation method). Optimistic attributional styles for positive and negative events were entered as predictors of well-being and academic achievement, controlling for self-esteem. When five nonsignificant paths were removed, the model still fit the data well (Fig. 14.1). Only the optimistic attributional style for positive events was a significant predictor of academic achievement and only the pessimistic attributional style for negative events predicted depression.



Notes: * $p < .01$; *The regression coefficient between self-esteem and academic achievement controlling for optimism is shown in parentheses; All regression coefficients are standardized.

Fig. 14.2 The relationship between academic achievement and self-esteem mediated by optimism for positive situations

Optimism as Mediator of the Effect of Academic Achievement upon Self-Esteem

It was further hypothesized that optimistic attributional style for positive events might mediate the effect of the students' academic achievement upon their self-esteem. In order to test this hypothesis, Sobel test for mediation was used. Optimistic attributional style for positive events emerged as a full mediator of the association between academic performance and self-esteem (see Fig. 14.2), satisfying all four mediation criteria proposed by Baron and Kenny (1986).

Discussion

The importance of distinction between optimistic attributional style for positive and negative events is confirmed by their specific associations with academic achievement and depression. The relationship between optimism for positive situations and academic performance corresponds well in terms of both magnitude and direction to previous findings obtained in academic (Yates & Yates, 1995) and professional settings (Corr & Gray, 1996; Furnham, et al., 1992).

The causal nature and direction of the associations between attributional style and academic achievement still have to be clarified. On the one hand, optimistic attributional style for positive events may promote goal setting and implementation, persistence, and effective coping within academic activity, resulting in higher grades. On the other hand, optimistic attributional style for positive events may form on the basis of repeated mastery experiences associated with school successes, and, thus, it may simply reflect, rather than motivate, academic achievement. The study limitations (correlational design and use of indicators of past academic performance) did not allow us to distinguish between these associations: the data most likely revealed a mixed picture of both, but further studies should be done to analyze these effects separately.

The associations between optimistic attributional style and well-being are not particularly strong. However, this association might be more intricate, supposing that the way an individual interprets a success or failure situation determines the type of ensuing emotional experience and the effect of this situation upon future motivation and self-image. Thus, attributional style seems to be *the* link between performance and well-being, but the studies needed to reveal the dynamics of these processes need to be longitudinal, rather than cross-sectional.

The results suggest that interventions fostering optimistic explanation of their successes can help students to improve their academic performance, maintain positive self-esteem, and mitigate the detrimental effects of academic failures upon self-esteem, preventing depression.

Study 2: Attributional Optimism, Well-Being, and Entrance Examination Performance

Aim

The aim of the second study was to investigate the relationship of optimistic attributional style for positive and negative events to well-being and academic performance in a realistic competitive setting of university entrance examinations.

Method

Participants

The sample comprised a group of entrants to the Moscow State University Psychology Department ($N = 108$), aged between 15 and 22 (mean age 17.2, standard deviation 1.38); 16% were male. The study participants comprised ~20% of all 2006 applicants and did not differ significantly in age or gender from the rest of applicants. Successful entrants are chosen by the examination board from among those who passed all three written examinations (Math, Essay, and Biology) on the basis of average scores.

Instruments

Success and Failure Attributional Style Questionnaire for Adolescents (SFASQ-A, Gordeeva et al., 2009) was used to measure attributional style. The internal consistency (Cronbach's alpha coefficient) was .80 for the positive events scale, .83 for the negative events scale, and between .70 and .72 for the stability, globality,

and controllability parameter subscales. The grades were averaged across the examinations taken by each entrant, giving an overall success indicator with Cronbach's alpha coefficient reliability of .56.

To measure well-being, Russian versions of ten-item *Trait Depression Scale* (Ritterband & Spielberger, 1996) with answer options ranging from 1 to 4, and a .80 reliability, as well as a four-item *Subjective Happiness Scale* (Lyubomirsky & Lepper, 1999) with a 1 to 7 response scale, and a .77 reliability were used. Russian version of the ten-item *General Self-Efficacy Scale* (Schwartz, 1993) with response scale options ranging from 1 to 4, and a .83 overall reliability was used to assess general self-efficacy beliefs. Each total score was divided by the number of items in the respective scale. To obtain a measure of situational self-efficacy (success expectations), participants were asked to indicate their chances of entering the University on a 0–100% scale.

Procedure

During the initial application period (2 weeks immediately prior to the entrance examinations), entrants who submitted their applications were invited to participate in a psychological study of “personality traits and their relation to achievement in a university entrance situation”. To strengthen their motivation, the participants were told that the results would “help the advancement of psychological knowledge”, and a popular psychology book was offered in reward for participation. The information leaflet stated that the study was being conducted by a research team independent from the university administration and that individual scores would remain confidential. The university application area and the research room were physically separated by three floors. The tests were administered by undergraduate and graduate students. Participants were asked to indicate their real names, which would be used to match their results to their examination scores as part of the research.

Results

Comparison of the Examination and the No-Attempt Group

Only 87 study participants took at least one examination (after a failed examination, subsequent ones are not taken), the remaining 21 participants (no-attempt group) did not even try one. Two-tailed *t*-test (see Table 14.2) revealed higher levels of depression, lower general and situational self-efficacy, lower happiness and more pessimistic attributional style in the no-attempt group.

Given that the number of available attempts to enter a higher educational institution was practically limited to two or three per year, it is likely that the entrants who had applied but did not actually take any exams were conservative in estimating their chances and decided to avoid potential failure by changing their goal for

Table 14.2 Comparison of the examination and the no-attempt group on all variables

| Scale | Examination | | No-attempt | | <i>t</i> | Cohen's <i>d</i> |
|------------------------|---------------|-----------|---------------|-----------|----------|------------------|
| | <i>N</i> = 87 | | <i>N</i> = 21 | | | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | |
| Expected success | 64.08 | 19.45 | 52.62 | 27.34 | 2.23* | .55 |
| General self-efficacy | 3.24 | 0.40 | 2.91 | 0.45 | 3.32** | .81 |
| Depression | 1.71 | 0.41 | 2.05 | 0.37 | 3.39** | .83 |
| Happiness | 5.42 | 0.95 | 4.66 | 0.81 | 3.37** | .83 |
| SFASQ: Positive events | 4.45 | 0.68 | 4.07 | 0.74 | 2.21* | .55 |
| SFASQ: Negative events | 3.92 | 0.63 | 3.57 | 0.73 | 2.21* | .55 |
| SFASQ: Total optimism | 4.12 | 0.56 | 3.76 | 0.65 | 2.54* | .64 |

p* < .05; *p* < .01**Table 14.3** Comparison of the successful and the unsuccessful group on all variables

| Scale | Successful | | Unsuccessful | | <i>t</i> | Cohen's <i>d</i> |
|------------------------|---------------|-----------|---------------|-----------|----------|------------------|
| | <i>N</i> = 32 | | <i>N</i> = 55 | | | |
| | <i>M</i> | <i>SD</i> | <i>M</i> | <i>SD</i> | | |
| Expected success | 71.94 | 19.13 | 59.51 | 18.29 | 3.00** | .68 |
| General self-efficacy | 3.22 | 0.32 | 3.25 | 0.44 | 0.34 | .09 |
| Depression | 1.95 | 0.37 | 1.93 | 0.42 | 0.08 | .07 |
| Happiness | 5.49 | 1.00 | 5.38 | 0.93 | 0.51 | .11 |
| SFASQ: Positive events | 4.22 | 0.69 | 4.58 | 0.64 | 2.46* | .55 |
| SFASQ: Negative events | 3.64 | 0.64 | 4.08 | 0.57 | 3.36** | .76 |
| SFASQ: Total optimism | 3.86 | 0.51 | 4.27 | 0.53 | 3.53** | .79 |

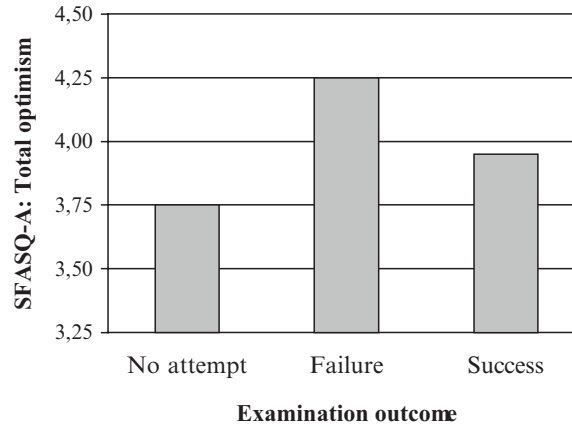
p* < .05; *p* < .01

different universities with lower competition, after it became clear at the end of the application campaign that it would be as high as five applicants per place at the MSU.

Optimism and Examination Outcome

Based on the examination session outcome, the examination group was split into successful (admitted to the university) and unsuccessful (not admitted) entrant subgroups. The unsuccessful group was constituted by entrants who had failed an examination or passed all three but scored below the cut-off average score set by the examination board for full- or part-time studies. When the two groups were compared (see Table 14.3), SFASQ was the only scale to reveal any significant differences: successful entrants showed less optimism across all the parameters of attributional style. This effect was somewhat more pronounced for negative situations than for positive situations. Interestingly, despite lower level of attributional optimism, successful entrants had higher expectations of success.

When the three groups described above with different examination outcomes were compared together using one-way ANOVA (see Fig. 14.3), no significant

Fig. 14.3 Differences in optimism associated with examination outcome**Table 14.4** Descriptive statistics and Pearson correlations between well-being, optimism, and examination success in the examination group

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---------------------------|-------|-------|--------|--------|-------|-------|------|
| 1. Average exam grade | | | | | | | |
| 2. Expected success | .39** | | | | | | |
| 3. General self-efficacy | -.07 | .27** | | | | | |
| 4. Depression | -.01 | -.18 | -.32** | | | | |
| 5. Happiness | -.05 | .26* | .41** | -.72** | | | |
| 6. SFASQ: Positive events | -.08 | .20 | .36** | -.31** | .28** | | |
| 7. SFASQ: Negative events | -.26* | .10 | .42** | -.40** | .30** | .47** | |
| <i>M</i> | 3.06 | 64.08 | 3.24 | 1.71 | 5.42 | 4.45 | 3.92 |
| <i>SD</i> | 0.65 | 19.45 | 0.40 | 0.41 | 0.95 | 0.68 | 0.63 |

* $p < .05$; ** $p < .01$

differences in optimism were found between the successful group and the no-attempt group ($F_{2, 104} = 9.23$, $p < .001$, $\eta^2 = .15$). Fisher post-hoc test suggested that the observed differences in optimism between the examination and the no-attempt group were due to the failure subgroup, exhibiting extremely high optimism scores.

The Association of Optimism with Expected and Actual Success

These analyses were carried out in the examination group only ($N = 87$). Only pessimistic attributional style and success expectations were correlated with the average examination grade (see Table 14.4).

A path model (presented on Fig. 14.4) was tested in EQS, revealing that only pessimistic explanatory style for negative events and success expectations predicted actual performance. Success expectations, in turn, were predicted by optimistic attributional style for positive events.

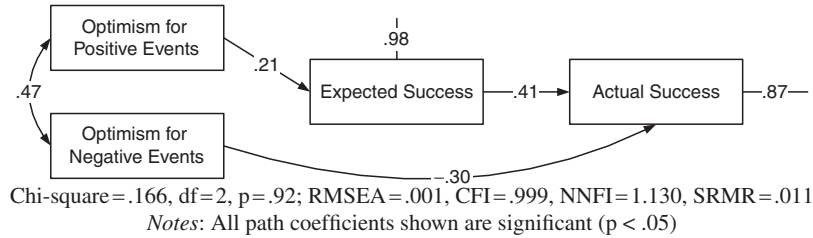


Fig. 14.4 Path diagram of the associations between optimism and examination success

Discussion

The results suggest that moderately pessimistic attributional style for negative events can be beneficial in some academic situations, confirming the previous findings on university students' exam performance (LaForge & Cantrell, 2003; Yee et al., 2003). The probable explanation is that moderately pessimistic students experience more test anxiety and are less confident of success, which motivates them to invest more time and effort into exam preparation. In turn, high optimism exhibited by the unsuccessful entrants may lead to unrealistic success expectations and, thus, undermine performance in complex tasks, which is in line with existing findings on unrealistic optimism (Armor & Taylor, 2002).

The path model revealing that the link between optimistic explanatory style for positive situations and success is mediated by success expectations reproduces the results of Martin-Krumm and Salama-Younes (2007) in the domain of positive life events. Pessimistic explanations of negative events may increase anxiety and motivate a failure-avoidance approach involving additional performance goal setting and preparatory activity. This is associated with higher results, but also higher depression proneness, as the data suggest. Acquired preparedness is likely to be reflected in increased success expectations, but pessimistic attributional style could affect them adversely, which explains the nearly zero association between explanatory style for negative events and success expectations.

In short, the results suggest two different motivational mechanisms behind the relationship of explanatory style to performance. Moderately pessimistic explanations of negative events can elicit anxiety and motivate persistence, concentration on short-term performance goals but can lead to depression and passivity in the long term. In turn, optimistic explanations of positive events may motivate mastery goal setting, persistence and effective coping with difficulties in the long term, but can also result in unrealistically high success expectations, particularly detrimental in difficult activity.

The principal limitation of the study is its modest sample size. However, the study was done in an extremely realistic setting, where school graduates had to make potentially life-changing decisions and take real action by applying to a university. The emerging individual differences were more manifold than it had been expected, and the findings allow drawing meaningful hypotheses for future studies in controlled settings.

General Discussion

The results of the two studies are in line with the existing findings, suggesting that optimistic attributional style is moderately associated with both emotional and cognitive aspects of subjective well-being, predicting higher happiness and lower depression, as well as higher self-esteem and self-efficacy. More importantly, attributional style seems to be the link between well-being and performance. On the one hand, attributional style is the way an individual interprets any given situation in the light of his/her personal dispositions, which results in helplessness or motivated activity, as early studies have shown. On the other hand, attributional style is the way an individual processes feedback from his/her activity, and, therefore, it should moderate the effects of successes and failures upon subjective well-being and future performance.

The findings of the two studies seem to be contradictory at the first glance, but do, in fact, complement each other, demonstrating the relationship of two types of optimism to performance in two academic situations of different types. The Study 1 results reflect the effects of explanatory style for positive life events on long-term, everyday performance in high school learning activity. This activity is continuous, familiar, manageable in terms of difficulty and requires, first of all, motivation for constant persistence, to which optimistic explanations of one's own past successes may contribute. The Study 2 data reflect a short-term positive effect of moderately pessimistic explanatory style for negative events, which is likely to be peculiar to difficult and new situations, such as entering a university. In this case, a realistic prognosis of future difficulties is essential to success, and moderate pessimism may be beneficial, as long as it is not pronounced enough to undermine motivation and activity altogether via the helplessness mechanism.

The findings suggest that optimism is associated with both positive and negative outcomes. It is generally beneficial to both success (via increased self-efficacy) and well-being: in failure situations, optimism may facilitate recovery of positive emotional states, making it easier for one to carry on some difficult activity. However, unrealistically high optimism, particularly concerning negative events, may result in rigid and inaccurate explanations and prognoses of life events. These findings can be seen from different angles: students who have extremely optimistic explanatory style may actually perform worse than those who have a moderate explanatory style *or* who are able to switch and find balance between optimistic and pessimistic explanations. Although attributional style is a stable personality characteristic, it is likely that rigid explanatory style, either pessimistic or optimistic, is less adaptive in terms of resulting performance, than flexible, *realistic* explanatory style, reflecting not only personal dispositions, but also specific features of different situations. Additional studies aimed to test this hypothesis are underway.

The distinction between explanatory style for positive and negative situations, as well as between different types of academic situations, makes it possible to resolve the contradictions between the existing findings concerning the relationship between optimism and performance. The present findings constitute strong evidence in favor of measuring attributional styles for positive and negative events as separate

variables. We propose to conclude that attributional style *is* associated with performance in different situations, but the specific pattern of this association depends on the situation type and perspective (whether long-term or short-term performance is considered). In the light of this conclusion, it seems more productive to study the effects of attributional style using longitudinal approach and in concrete settings of specific situations.

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