OPTIMISM, ADVERSITY AND PERFORMANCE:
COMPARING EXPLANATORY STYLE AND AQ

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ABSTRACT

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Explanatory Style and Adversity Quotient (AQ) are two models that provide an explanation of the structure within which people make attributions about events. Although there are some differences, both models address the importance of remaining resilient in the face of adversity. This thesis explores the relationship between Explanatory Style and AQ and whether there are correlations between each of the constructs and performance in a high-adversity occupation, sales.

Explanatory Style and AQ correlated, with locus of control being the most important element linking the two models together. Control predicted performance as did attributing negative events to internal causes. The Explanatory Style model's assumption that internalizing negative events leads to helplessness and lack of control was not supported. Based on the results of this study, it appears that the AQ model may provide a more complete and consistent framework for identifying who is empowered and who is helpless.

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There are so many people who contributed to helping me achieve this goal. First, I want to thank the person who has shaped who I am – the love of my life – my husband. Without his support, financially, emotionally, spiritually, I would have never been able to achieve this goal. He is the most gifted human being I've ever met and inspires me to continue to strive for greater things. Second, I want to thank my mother who has offered her endless support along the way and who exemplifies resilience. She is a model for all of us for how to overcome setbacks with grace and dignity. I want to thank my mother-in-law for all of her help and for also being such an extraordinary example of resilience and character. I also want to thank my sisters for lending their support along the way, each in different ways, which contributed immensely to keeping me focused and helping me to finish the task.

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Lastly, I want to thank Dane Smith. This study would never have been possible if he hadn't given this graduate student/salesperson a chance. I will forever be grateful for his kindness and willingness to take a chance on me.

I dedicate this work and everything that went into it to my son, Ryan. My prayer is that you'll always have hope and faith, without which it is impossible to be resilient.

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Abstract

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Optimism, Adversity and Performance:
Comparing Explanatory Style and AQ

Shakespeare said, "There is nothing either good or bad, but thinking makes it so." In the New Testament, Paul tells the Philippians to, "Fix your thoughts on what is true and honorable and right. Think about things that are pure and lovely and admirable. Think about things that are excellent and worthy of praise" (Philippians 4:8). Through the ages, man has had the ability to think about himself, his circumstances, the people around him, etc. It has been said that this is what differentiates humans from other animals. This ability that we have to think about the events in our lives leads us, according to the reformulation of the learned helplessness model (Abramson, Seligman & Teasdale, 1978; Seligman, Abramson, Semmel & von Baeyer, 1979), to develop an explanatory style in which we attempt to interpret or explain the causes of these events. According to this model (hereafter referred to as the Explanatory Style model), some people have an optimistic explanatory style and others have a pessimistic explanatory style. People who have a more optimistic explanatory style explain or attribute negative events to external, temporary and specific causes. In other words, they believe that a negative event is due to something outside of them, that it will be temporary, and that it will only be relevant or specific to that particular situation. Alternatively, people who have a more pessimistic explanatory style attribute negative events to internal, stable and global causes. For example, when faced with an adversity, such people may think it's all their fault, it's going to last forever, and that it will affect all areas of their life.

The way that a person consistently interprets adverse events can profoundly affect many areas of his/her life. While there can be an upside to occasional pessimism, such as

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greater accuracy in assessing events, and some pitfalls in being overly optimistic, such as overestimating the possibilities and underestimating potential hazards (Seligman, 1990), research on Explanatory Style clearly shows the benefits to being optimistic versus pessimistic. For instance, a pessimistic explanatory style can drain motivation, reduce persistence and increase the likelihood of depression, while an optimistic explanatory style can inspire problem solving and foster resilience in the face of adversity (Abramson et al., 1978). An optimistic outlook has been linked to greater health (Peterson, 1988; Peterson & De Avila, 1995), superior athletic performance (Rettew & Reivich, 1995), academic achievement and job productivity (Schulman, 1995).

Building on the Explanatory Style model and based on additional research in the areas of cognitive psychology, psychoneuroimmunology, and neurophysiology is a new conceptual framework called Adversity Quotient or AQ (Stoltz, 1997). The AQ model expands on Explanatory Style and includes elements of hardiness (see Maddi, 2002 for a complete review) and locus of control (Rotter, 1966). AQ combines the components of scientific theory and real-world application and was developed and refined as a result of applying the wedded concepts above to thousands of people in organizations around the world (Stoltz, 1997).

The Explanatory Style model and the AQ model are similar in that each attempts to provide a systematic explanation of the structure within which people make attributions about events. Because of these commonalities, an important question arises concerning the degree with which the two models are conceptually linked. According to the Explanatory Style model, causes of events can be perceived along three different

dimensions: internal vs. external, stable vs. unstable and global vs. specific (Peterson et al., 1982). As mentioned above, those with a pessimistic explanatory style attribute the cause of negative events to be internal, stable and global, and those with an optimistic explanatory style attribute the causes of negative events to be external, unstable (temporary), and specific. According to the AQ model, the causes of events are perceived along four dimensions: C, O, R and E. C stands for "control," O stands for "ownership," R stands for "reach," and E stands for "endurance." Together, the four dimensions of C, O, R and E stand for your CORE and make up your overall Adversity Quotient or AQ (Stoltz, 1997). When adversity strikes, "the higher one's AQ, the more likely one is to perceive some way to influence the situation (Control), take it upon oneself to make it better (Ownership), and perceive it as limited and fleeting (Reach and Endurance). The lower one's AQ, the less control one perceives, and the less ownership one will take for dealing with what appears to be a far-reaching, long-lasting setback" (Stoltz, 2000a, p. 39).

It appears that the Reach and Endurance dimensions of AQ are similar to the global vs. specific and the stable vs. unstable dimensions of Explanatory Style. Also, the Ownership dimension of AQ seems to have some conceptual overlap with the internal vs. external dimension, although not necessarily in the same direction as Explanatory Style. If one has an optimistic explanatory style where they attribute the causes of negative events to be external, they may or may not take ownership. In fact, it would seem that the more likely one is to attribute adversity to external causes or causes outside of

themselves, the more likely they would be to *not* take ownership. The Control dimension is an additional dimension that was not accounted for in the Explanatory Style model.

   Although there are some differences in the two models, they both address the importance of remaining resilient in the face of adversity. Merriam-Webster's (2005) defines resilience as "tending to recover from or adjust easily to misfortune or change." Each model has its own measure that is used to better understand which factors are most important in determining who will succumb to the obstacles in life and who will thrive as measured by the magnitude of the correlations. The Attributional Style Questionnaire (ASQ) is used to measure Explanatory Style (Peterson, et al., 1982), and the Adversity Response Profile (ARP) is used to measure AQ (Stoltz, 2000). The ASQ measures a person's explanatory style for negative events (Composite Negative or CoNeg) and their explanatory style for positive events (Composite Positive or CoPos). Additionally, an overall Explanatory Style score can be obtained by calculating the difference between CoPos and CoNeg (CPCN). The ARP measures a person's AQ based on their responses to questions about negative events only. The ARP yields a score for each of the CORE dimensions along with a total AQ score, which is the sum of all the CORE dimension scores. Both measures have been used in studies which have tried to better understand what makes a person successful in one of the most adversity-ridden occupations, sales (Corr & Gray, 1996; Proudfoot, J.G., Corr, P.J., Guest, D.E., & Gray, J.A., 2001; Seligman, M.E.P. & Schulman, P., 1986; Silvester, J, Patterson F. & Ferfuson, E, 2003; Stoltz, 1996). These studies have included insurance sales, retail sales and business to business sales.

It is unlikely that any other occupation deals with more adversity in the form of rejections and obstacles on a daily basis than sales. It is inherently part of the salesperson's job to be subjected to particularly stressful events. The salesperson's role is one in which resistance and rejection come with the territory. It would make sense that in order to be successful in a position that is fraught with adversity, one must be resilient. Since resilience seems to be more the exception than the rule, this could explain why almost every business in every industry exhibits the Pareto Principle or 80/20 rule: 20% of the sales force produces 80% of the company revenues. According to the research that has been conducted within each framework mentioned, salespeople on average are more resilient in terms of optimism and AQ than any other group tested, higher than managers and even higher than world class athletes (Schulman, 1999; Stoltz, 2000). However, even the most resilient person, when faced with the constant adversity that is so prevalent in the world of sales, may become overwhelmed and develop pessimistic beliefs at times. This may again be the reason for the 80/20 rule within sales organizations.

While there appears to be some conceptual overlap between Explanatory Style and AQ, no studies to date have explored the relationship between the two attributional style models. In addition, relatively few studies have explored the relationship between Explanatory Style and sales performance, and the current body of research concerning this topic has yielded some mixed results. In one study, the sample was comprised of salespeople from an organization where the turnover is extremely high (Seligman & Schulman, 1986). In another study, the sample consisted of senior salesmen who had

been with the company many years (Corr, P.J. & Gray, J.A., 1996). In both of these studies, the focus has been on a specific sales role: selling insurance over the phone. Due to the narrow focus in the prior research and the differences between the sample groups used in the studies, questions remain regarding the mechanism by which attributions influence performance in sales roles more generally. Studies on AQ and sales performance have not been as limited in terms of only studying specific sales roles and have found more consistent results (Stoltz, 1996).

Explanatory Style and Performance

Over the past twenty years, hundreds of studies have explored the correlates of optimistic and pessimistic explanatory styles (Gillham, 2000). However, few studies have explored the relationship between these two explanatory styles and organizational performance - specifically, sales performance.

One of the earliest studies on Explanatory Style and sales performance (Seligman & Schulman, 1986) investigated the relationship between Explanatory Style and productivity among 94 life insurance salesman employed with Metropolitan Life Insurance. Sales experience for this group ranged from several months to several decades. Productivity was measured by collecting data on commissions earned on the sale of life insurance policies for the first two years of employment. Analyses revealed that there was a significant correlation between explanatory style for negative events (CoNeg) and sales performance. CoNeg correlated with sales performance in the first year and second year. The lower an agent was on CoNeg (he attributed negative events to external, unstable and specific causes), the more he sold. Sales agents who scored in the top half

of CoNeg, using the median cutoff, sold 37% more than those in the bottom half. Agents who scored in the top decile of CoNeg sold 88% more than those who scored in the bottom decile. The CoPos score did not correlate with sales performance.

In a second prospective sample of this same study, the overall composite score, CPCN, predicted sales in the second half of the year. Additionally, agents who scored above the median cutoff for CPCN sold 25% more insurance than those who scored below the median.

Corr & Gray (1996) did another study which looked at the relationship between Explanatory Style and sales among life insurance agents in the UK. However, in contrast to Seligman & Schulman's study, they found positive correlations between CoPos and sales performance. An optimistic explanatory style for positive events was found to be a better predictor in this study than an optimistic explanatory style for negative events. Additional studies in the UK have found similar results where high CoPos seems to be a better predictor of performance than low CoNeg (Brewin & Shapiro, 1984; Corr & Gray, 1995a). Additionally, a significant relationship was found between CoPos and motivation in the financial services sector (Proudfoot et al., 2001).

Based on the conflicting findings from the studies mentioned above, it is unclear whether an optimistic explanatory style for negative events, an optimistic explanatory style for positive events, a combination of a low score for the former and a high score for the latter, or the difference between the two is related to sales performance. An examination of the findings from additional studies that have compared and contrasted

the Explanatory Style model with other attributional models within the context of sales have blurred our understanding more.

One study by Silvester et al. (2003) compared the Explanatory Style model with an achievement motivation model (based on Weiner's (1985) work on attributions and motivation) in a study on retail sales performance. According to Weiner, three causal dimensions (locus of causality, stability, and controllability) are important in determining affect and motivation in achievement settings. Locus of causality refers to the self (internal) vs. environmental (external) responsibility for causal explanations and can be compared to the internal vs. external dimension of Explanatory Style. Stability refers to causal explanations that are perceived as unchanging or stable vs. temporary and can be compared with the stable vs. unstable dimension of Explanatory Style. Controllability refers to the level with which the individual has control over their own actions vs. situational factors beyond the control of any individual. (This dimension can be compared to the Control dimension of the AQ model.) The Explanatory Style model doesn't have a dimension to measure control, specifically. According to Weiner, a causal explanation can be internal and uncontrollable or internal and controllable.

The Silvester et al. (2003) study argued that, in contrast to the Explanatory Style model that views high performing salespeople as those who externalize failure, salespeople who attribute negative events to external causes are less successful since they are less likely to learn from their experiences and improve future performance because they do not believe that they can influence outcomes. In addition, their achievement motivation model predicted that a successful salesperson is more likely to attribute both

successful *and* unsuccessful sales to internal and controllable causes. This is consistent with the AQ model in which one who has a high AQ is more likely to perceive some way to influence the situation (Control) and take it upon oneself to make it better (Ownership). Results of the study found a significant correlation between internal-controllable attributions for positive events and sales performance and internal-controllable attributions for negative events and sales performance. No support was found for the Explanatory Style model and sales performance.

AQ and Performance

As mentioned previously, AQ builds on the Explanatory Style model and incorporates elements of additional models as well including hardiness, locus of control, etc. In addition, Weiner's attribution theory also lends important components to this model (i.e., the Control and Ownership dimensions, which assess the individual's perceived control and their ability to take ownership to improve the situation).

 In contrast to the Explanatory Style model where there are limited studies in the literature on its relation to sales performance, AQ was developed through the acquisition of data acquired through research and application in numerous organizations. Some of the corporations who have participated in AQ studies are: Cellular One (SBC Telecommunications), Deloitte & Touche, LLP, and Diversified Collection Services, Inc. (Stoltz, 1996).

In the SBC Telecommunications study, the relationship between AQ and sales performance within their Cellular One division was examined. Performance was measured three ways: percentage of top-line (new sales), percentage of quota and

percentage of net sales, respectively. The results found a statistically significant

difference between the means of those scoring in the top half of AQ and those scoring in

the bottom half of AQ in all three categories. Those who scored in the top half of AQ

sold 166% more in the percentage of top-line category, they sold 106% more in the

percentage of quota category, and 150% more in the percentage of net category (Stoltz,

2000).

In a study with Deloitte & Touche, the relationship between AQ and performance

was assessed among 125 new experienced hires. Additionally, it was hypothesized that

higher AQ employees would be promoted sooner than low AQ employees. Results

showed AQ significantly correlated with performance and promotion.

The relationship between AQ and performance was also examined in a study with

Diversified Collection Services. Among 450 subjects, AQ significantly predicted

performance: the AQs of top performers were significantly higher than low performers.

The Role of Control

Based on the findings of previous research described above, it appears that there are

some discrepancies regarding the internal vs. external component. It's important to

understand further the role internality vs. externality plays in both of these models

because of the stated and/or assumed resulting effects this component has on [locus of]

control. According to Rotter's (1966) locus of control theory, an individual with an

internal locus of control believes rewards and punishments are brought about by his or

her own actions, and an individual with an external locus of control believes rewards and

punishments are due to chance factors, fate, someone or something else outside of the individual.

An important component of Explanatory Style is the expectation that one can control events in the environment (Chang, 2001); however, perceptions of control are usually inferred from the causal attributions people give (Peterson, 1991) rather than measured on a control dimension. The AQ model dedicates a dimension to control with the assumption that the more perceived control a person has, the more resilient they will be. In this model the control and ownership dimensions are inextricably linked in that the more one takes ownership when adversity strikes, meaning they don't deflect accountability by attributing the cause of the bad event to something external or outside of themselves, the more perceived control they have. This is in contrast to the Explanatory Style model where the assumption is that attributions for negative events that are internal (as well as stable and global) will be regarded as uncontrollable (Chang, 2001).

According to the reformulation of the learned helpless model from which Explanatory Style is derived (Abramson et al., 1978), stability and globality predict control. However, Peterson (1991) asked college students, in an unpublished study, to describe four bad events, which included a controllable vs. uncontrollable dimension. In this study, Peterson found that stability and globality did not correlate with control. He did find, though, that internality correlated with control. Again, this is more consistent with the AQ theory with respect to the control and ownership dimensions.

Considering the relationship of control to sales, Sujan (1986) argues that salespeople who attribute negative events (i.e., a failed sale) to internal yet unstable and controllable causes are unlikely in the face of similar future situations to give up because they believe themselves able to influence the outcome through increased effort or by changing their strategy.

How to Compare AQ and Explanatory Style

There appears to be a trade-off when looking at individual dimensions versus the overall composite scores that each model's measure produces. If just the composite scores are examined, its' impossible to unpack the specific roles assigned by each model to a particular dimension. On the other hand, the dimensions taken together may capture a higher order notion – a latent variable. Peterson (1991) likens this to mixing apples and oranges in order to produce fruit salad. For example, in the case of the salesperson, traits such as optimism, good personal skills, and the ability to read customer cues may together make a good salesperson, regardless of what the individual emphasis is on each trait.

It is beyond the scope of this study to thoroughly understand the exact role that each dimension plays since another dimension may be interacting with the one being measured which ultimately affects what we're studying – performance. However, since both models are, in essence, measuring the concept of resilience, it's important to test to see if the overall composite scores of each model correlate, and if any of the dimensions correlate as well.

The purpose of the present study is to explore the relationship between optimism (operationalized by Explanatory Style), response to adversity (operationalized by AQ) and sales performance. Specifically, this study will examine whether there is a significant relationship between the two constructs and if there are correlations between each of the constructs and sales performance using the overall scores and the sub scores of each of the constructs.

Research Questions

1) Are AQ and Explanatory Style correlated?

2) Do AQ and Explanatory Style predict sales performance?

Conceptual Definitions

Optimistic Explanatory Style. As noted earlier, Explanatory Style is measured for both positive and negative events. An optimistic explanatory style for positive events, CoPos, occurs when the causes of positive events are attributed to internal, stable and global causes. A high CoPos score is an optimistic explanatory style for positive events. An optimistic explanatory style for negative events, low CoNeg score, occurs where negative events are attributed to external, unstable and specific causes.

Pessimistic Explanatory Style. A pessimistic explanatory style consists of a low CoPos score where positive events are attributed to external, unstable and specific causes and high CoNeg where negative events are attributed to internal, stable and global causes.

According to the Explanatory Style research, there is an inverse relationship between the attributions for positive and negative events. If a person is optimistic, they will be high on CoPos and low on CoNeg. In order to understand a person's overall explanatory

style, a figured is calculated by subtracting CoNeg from CoPos. Therefore, CoPos - CoNeg = CPCN, which is the overall Explanatory Style or composite score (ASQ; Peterson et al., 1982).

Individual dimensions score. An additional score can be computed within this model that gives an overall score across the three dimensions (internal, stable and global), and these additional scores can be computed for both positive and negative events (i.e., InternalNeg, StableNeg, InternalPos, StablePos, etc.) For the purpose of the present study, only the individual dimension scores for negative events will be calculated in order to compare them against the CORE dimension scores in the AQ model, which are for negative events only.

Adversity Quotient (AQ). The ability to deal with adversity is measured by the four dimensions of CORE (Control, Ownership, Reach, and Endurance) (Stoltz, 1997). The sum of the CORE scores yields a composite AQ or total AQ score. The higher the scores, the higher the AQ.

A table with the terms and definitions for both the Explanatory Style and AQ models is presented in Appendix B.

Based on the findings presented so far, it is hypothesized that the composite AQ score - the total AQ - will correlate with the composite explanatory score – CPCN. It is also hypothesized that the Control and Ownership dimensions will correlate with Internal Neg, since it's believed that those who attribute causes of events to internal causes will have a higher perception of control than those who attribute events to external causes. In addition, it is expected that the Reach dimension will correlate with GlobalNeg, and the

Endurance dimension will correlate with StableNeg. Regarding the anticipated results for the relationship between the two models and sales performance, it is predicted that the total AQ score along with the dimension scores will predict sales performance and the CoPos score and the individual dimension scores for negative events (InternalNeg, StableNeg and GlobalNeg) will predict sales performance. (Note: A positive correlation is predicted between the InternalNeg score and performance since the higher the score, the more you attribute events to internal causes. The other dimensions are predicted to be inversely correlated since the higher the score, the more you attribute the negative event to being stable and global. Due to the reverse scoring for positive and negative events within the Explanatory Style model, there can be some confusion.)

METHOD

Participants

The western area sales region of a leading Fortune 500 company in the computer hardware industry was used to gather data for this study. In order to work for a company of this caliber, it is typically necessary to have at least 6 years of prior sales experience, and most have many more years of experience. The number of years of sales experience was reported in 1 of 4 time ranges, and the modal range was more than 10 years. The number of employees in each of the 4 ranges is given in Table 1.

The company was selected in order to study a relatively homogeneous group of salespeople with respect to business competence and experience in order to reduce error variance due to experience and product knowledge. Because low to moderate correlations were expected, a sample size of one hundred and twenty was deemed

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Table 1 Time Ranges for Number of Years of Sales Experience and Number of Employees in each Range

Years	Frequency (n=112)
Two or Less	3
Three-Five Years	18
Six-Ten Years	19
Ten Plus Years	72

appropriate (Peterson, 1991). The regional vice president encouraged voluntary participation but assured salespeople that in no way would participating in the study affect their job status. Eighty-three were male (69%) and thirty-seven were female (31%). The mean age was 41.37 years (SD = 8.60). The number of years of length of service at the company was also reported in 1 of 4 time ranges, and the modal range was more than 6 years. See Table 2 for the number of employees in each range.

Measures

The Attributional Style Questionnaire (ASQ). The ASQ (ASQ; Peterson, et al., 1982) was used to measure Explanatory Style. The ASQ (see Appendix C) is a self-report instrument that consists of twelve hypothetical situations; six of the situations are positive, and six are negative. Respondents are asked to vividly imagine each situation happening to them and to write down one major cause of the event. On a 7-point rating scale, respondents are asked to indicate the degree to which the cause is perceived to be internal (factors related to the individual) or external (factors related to other people or circumstances), stable (will always be present) or unstable (is fleeting), global (affects all areas of life) or specific (is only specific to the current situation). As mentioned earlier, the ASQ yields a composite score for positive events (CoPos) one for negative events (CoNeg) and an overall composite score, which consists of the difference between CoPos and CoNeg (CPCN). Additionally, individual dimension scores can be computed by summing all of the scores for each dimension (i.e., InternalNeg, StableNeg and GlobalNeg). The three composite scores (CoPos, CoNeg and CPCN) in addition to the individual dimension scores for negative events were used for the analyses.

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Table 2 Time Ranges for Years of Length of Service and Number of Employees in each Range

Years	Frequency (n=113)
One Year	2
Two-Three Years	33
Four-Six Years	31
Six Plus Years	47

The Adversity Response Profile (ARP). The ARP (Stoltz, 2000) was used to measure AQ. The ARP (see Appendix D) is a self-rating questionnaire used to measure an individual's style of responding to adverse situations. The ARP describes fourteen scenarios, only ten of which are actually scored. The additional four questions are included in the measure so that it will be less obvious what the ARP is measuring. Each scenario is followed by four questions, each representing the four dimensions described earlier (i.e., Control, Ownership, Reach and Endurance). Respondents indicate on a 5-point scale the extent to which each statement represents them. The sum of the four scores is the person's AQ or the total AQ score. Both the dimension scores and the total AQ score were used in the analyses.

Performance

Performance was measured by having participants self-report what percentage of quota they achieved for the prior fiscal year. Actual sales revenue data was requested from the company, but they declined to provide it.

Procedure

The ASQ, the ARP and a demographic data sheet were distributed to all of the salespeople in the western region during training sessions. Each participant was assigned a code number, and a third party calculated the results and sent them to the researcher to protect anonymity.

<div align="center">RESULTS</div>

Descriptive Data

ASQ. The means and standard deviations for the ASQ scores are presented in Table 3 along with the normative data provided by the Seligman & Schulman (1986) study. It appears the current sample was less optimistic (as much as one standard deviation lower on the CPCN score) than the normative data group. For the individual dimension scores, the means and standard deviations were: InternalNeg *M* =4.33, *SD* = .88; StableNeg *M* = 4.27, *SD* = .96; GlobalNeg *M* = 4.56 *SD* = 1.09. There were no significant differences in ASQ scores for men vs. women or length of service.

AQ. The means and standard deviations for the AQ scores are presented in Table 4 along with the normative data provided by the Stoltz (2000) study. All of the AQ scores except Reach are higher than the normative data group. Although the current sample was slightly above the normative data, the magnitude of the difference is less than a standard deviation for each of them. There were significant differences between AQ and length of service (Ownership *r* = .22, *p* < .05; Endurance r = .19, p < .05), indicating those who had been with the company longer were better at taking ownership and seeing negative events as temporary. There were also significant differences between men and women (Total AQ *t* = 2.21 *p* < .02; Endurance *t* = 1.66, *p* < .05; men did better).

Performance. The performance measure was the percent of assigned sales quota that a salesperson reported achieving. Thus, numbers above 100 indicates that they exceeded quota, and below 100 that they failed to achieve quota. The mean and standard deviation for performance were *M* = 82.70, *SD* = 24. On the average, for the fiscal year the performance data was collected, the subjects performed below expectations by 17.3 percent. There were no significant differences between men and women or length of

Table 3 Mean Scores and Standard Deviations for the ASQ

ASQ	Current Study	Seligman & Schulman Normative Date (1986)
CPCN	2.60 (2.60)	5.42 (2.92)
CoNeg	13.17 (2.18)	12.00 (2.42)
CoPos	15.74 (1.92)	17.43 (1.83)

Standard deviations are presented in parentheses.

Table 4 Mean Scores and Standard Deviations for the ARP

ARP	Current Study	Stoltz Normative Data (2000)
Total AQ	152.78 (21.70)	149.50 (15.70)
Control	40.77 (4.88)	37.20 (5.60)
Ownership	45.00 (5.00)	41.30 (5.00)
Reach	35.42 (6.10)	37.10 (6.90)
Endurance	38.50 (5.68)	34.00 (6.70)

Standard deviations are presented in parentheses.

service; although, length of service exhibited a negative trend with respect to performance ($r = -.13$, *n.s.*).

Relations among Measures

Explanatory Style and AQ. The composite Explanatory Style (CPCN) score significantly correlated with the composite or total AQ score ($r = .21$, $p < .05$). CoNeg positively correlated with the Control dimension ($r = .17$, $p < .05$), as did CoPos ($r = .34$, $p < .01$), and InternalNeg ($r = .22$, $p < .05$), indicating that the higher the subject was on Control, the higher their CoNeg score, the higher their CoPos score, and the higher their InternalNeg score (they attributed negative events to internal causes). CoPos also significantly correlated with the Ownership dimension ($r = .25$, $p < .01$); the Reach dimension ($r = .22$, $p < .05$); the Endurance dimension ($r = .21$, $p < .05$), and the total AQ score ($r = .21$, $p < .05$). See Table 5 for a correlation matrix for these variables.

Explanatory Style and performance/AQ and performance. There was a significant positive correlation between StableNeg and performance ($r = .26$, $p < .01$), indicating that the more salespeople saw negative events as stable, the better their performance. This did not support the hypothesis that there would be an inverse relationship between this dimension as well as the GlobalNeg dimension and performance. None of the other Explanatory Style scores correlated significantly with performance. There were no significant correlations between any of the AQ scores and performance.

Additional Analyses

Additional analyses were performed to further investigate the relationship between Explanatory Style and performance and AQ and performance. As mentioned previously,

Table 5 Correlation Matrix for ASQ and ARP

	Total AQ	C	O	R	E
CPCN	.21*	.07	.13	.16	.18
CoNeg	-.09	.20*	.04	-.01	-.04
CoPos	.21*	.34**	.25**	.22*	.21*
InternalNeg	.01	.22*	.02	.18	.03
StableNeg	-.10	.09	.03	-.06	-.10
GlobalNeg	-.10	.13	.03	-.08	-.05

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level

length of service and performance were negatively correlated, although not significantly, indicating that there is a chance that the longer the salesperson was employed with the company, the lower their performance would be compared to their assigned quota. It is suggested that the longer a salesperson is with a company, there is a possibility that the indices used to measure performance would degrade. For example, it is common practice within sales organizations to increase the quotas of salespeople based on past performance. The more one sells, the more likely their quota will continue to increase versus the quotas of less performing individuals. Although the top performers may be bringing in substantially higher percentages of revenues, their percentage to quota may not be as high as someone bringing in less. Although this organizational practice may or may not be universal or characteristic of the organization in this study, we can avoid the problems it introduces by using only short-term employees. Therefore, additional analyses were performed by selecting only for those who had been with the company 3 years or less ($n = 25$) hereafter called short-term employees.

Explanatory Style and performance for short-term employees. There was a significant negative relationship between CPCN and performance ($r = -.39$, $p < .05$), indicating that the more pessimistic one was, according to the Explanatory Style model, the better they did. There was a significant positive correlation between CoNeg and performance ($r = .45$, $p < .05$), indicating that the higher one was on CoNeg, the better they performed. There was a significant positive relationship between InternalNeg and performance ($r = .54$, $p < .01$), indicating that the more they attributed negative events to internal causes, the better they did.

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AQ and performance for short-term employees. There was a significant relationship between the total AQ score and performance (r = .50, p < .05). Additionally, there were significant correlations between the Control dimension and performance (r = .44, p < .05) and the Reach dimension and performance (r = .40, p < .05), indicating the more the salesperson perceived they had control and believed the negative event was limited, the better their performance. Salespeople who scored in the top half of AQ, using the median cutoff, sold 25% more than those who scored in the bottom (*t* = 1.8, *p* < .04). Using more selective cutoffs, the results are even more impressive. Salespeople who scored in the upper decile on AQ sold 59% more than those who scored in the bottom (*t* = 10.42, *p* < .001). Salespeople who scored in the top half for Control, using the median split, sold 22% more than those in the bottom half (*t* = 1.7, *p* < .05).

DISCUSSION

The purpose of this study was to compare Explanatory Style to AQ to see if there is any conceptual overlap, and to examine the relationship between each model and sales performance. The hypothesis that the overall composite score of each model would be significantly correlated was supported. Additionally, the Control dimension positively correlated with CoPos, CoNeg and InternalNeg. The hypothesis that the Control dimension and InternalNeg would be significantly correlated was also supported. According to the AQ model, an individual's perception of control strikes directly at empowerment and influences and impacts all other AQ dimensions. If one is high on accountability and ownership, they will enlarge their control and empowerment. (Stoltz, 1997). According to the Explanatory Style model, those who attribute negative events to

internal (as well as stable and global) causes should feel a sense of helplessness and an expectation of uncontrollability (Abramson, et al., 1978). The findings from the current study support the position that the more likely one is to attribute causes of events to being due to internal causes, the more perceived control they'll have, regardless of whether the events are positive or negative. This is an important finding since the Explanatory Style model considers the lack of control to be the essential cause of helplessness (or, rather, lack of empowerment); however, the numerous studies on Explanatory Style have failed to measure this dimension (Tennen & Affleck, 1991).

All of the AQ dimensions (CORE), including the overall AQ score mentioned above, positively correlated with the Explanatory Style model's composite score for positive events, indicating conceptual overlap between AQ and the CoPos score. For instance, those who were high on CoPos (they attributed positive events to be due to internal, stable and global causes) were also high on AQ. (Remember, a high AQ individual is one who, in the face of adversity or negative events, is more likely to perceive some way to influence the situation (Control), take it upon oneself to make it better (Ownership), and perceive it as limited and fleeting (Reach and Endurance).

Regarding the two models and their relationship to performance, the only significant relationship that was found was between StableNeg and performance. This was in contrast to what was hypothesized. A possible explanation for this is that the performance measure itself was not a valid measure of performance. As mentioned earlier, it is quite possible that the longer the salesperson remains with the company, the more likely the

indices used to measure performance, namely percentage to quota, may degrade. The use

of self reports for collecting performance data may also lead to inaccurate data.

When the length of service variable is controlled for, the relationship found between

each of the measures and performance are more consistent with what was predicted and

what has been previously found in the literature. For instance, there was a significant

relationship between the total AQ score and performance and the control and reach

dimensions and performance, although remember, control and reach are not independent

of the total AQ score. This indicates the higher the salesperson's AQ, the better they

performed. More specifically, the more they perceived they had control and that negative

events were limited, the better they did. The InternalNeg dimension of Explanatory Style

also significantly correlated with performance, providing further support for the argument

that the more one attributes events to internal causes, the better they perform – most

likely due to control. Interestingly, there was a significant negative relationship between

the overall composite score for Explanatory Style (CPCN) and CoNeg, indicating that the

more pessimistic one was, the better they did. However, this could be due to the emphasis

placed on the internality dimension. It's interesting to note that the current sample was

more pessimistic than the normative data provided by Seligman & Schulman (1986) but

higher on AQ than the normative data provided for by Stoltz (2000). As mentioned

earlier, salespeople are among the most optimistic and resilient (as a group) as assessed

by the two measures. Again, it could be possible that the emphasis on the internality

dimension of the Explanatory Style model is why this group scored less optimistically

than the normative data; however, it shows more support for the AQ model and the importance of control in being resilient.

It was stated earlier that there was a trade-off regarding using composite scores or dimension scores when measuring concepts like Explanatory Style. If you only measure composite scores, you lose any understanding of the role the dimensions play; if you use only dimension scores, you may be missing some higher order notion or latent variable. According to Tennen & Affleck (1991), unless this latent variable is specifically defined, we won't know what it should or should not predict or how to measure it. In essence, it's putting the cart before the horse.

Although there were significant relationships between the overall composite score for Explanatory Style and the composite score for AQ, assumptions about the degree of overlap conceptually between the two models should be limited to the findings from the dimension scores since the component of control seems to be the most important element linking the two models together and cannot be fully understood from the composite level. In addition, since control plays a prominent role in the relationship to performance as well, it is also necessary to look at the findings from the dimension scores, specifically those from the Explanatory Style model.

It was mentioned earlier that low correlations were expected. Peterson (1991) notes that the typical correlation with Explanatory Style is in the .20 to .30 range. He argues that this is not necessarily low since given variables, either experimental or correlational, rarely account for more than 10% of the variance in other variables. Also, he argues that when the data is recast from a different angle, the magnitude of the relationship may be

much more impressive. For example, he mentions a study where Explanatory Style and number of days ill one reports a month had a moderate correlation of .27. However, he said when he split the sample into the top and bottom based on pessimism scores, those in the top showed a twofold difference in the number of days ill compared to those in the bottom. To illustrate the magnitude of the relationship between the control dimension and performance (with the short-term employees group), those who scored in the top half of the AQ Control dimension performed 22% better than those who scored in the bottom half. (It should also be noted that the actual correlation (r = .44, p < .05) was actually higher than the typical .20 to .30 range of Explanatory Style.)

Demonstrated by the findings from this study and the other studies mentioned earlier, the control dimension seems to be pivotal in understanding the results and relates directly to empowerment – the opposite of helplessness. Since many studies have shown the impact locus of causality has on control, there's strong evidence to support the notion that the more one attributes events to internal causes, the more ownership one takes, which in turn leads to the increased perception of control. It appears that the assumption of the Explanatory Style model that the more negative events are internalized, the more one will feel helpless and lack control, is not correct.

Further research is needed to better understand the relationship between Explanatory Style and AQ and the relationship between each of these models and performance. As mentioned earlier, there were some limitations in the study in that the indices used to measure the performance variable may not have high validity. In addition, the use of self-reports may also hinder the accuracy of the data. A better approach for future studies

may be to include multiple measures of performance. A larger sample size is also needed, and it may be helpful to sample salespeople who have little or no sales experience in order to obtain a sample in which performance can be measured more validly. In addition, it would be helpful to perform multiple regression analyses to better understand the unique contribution of each of the models variables to performance.

However, this study provided an additional test of both models, and to date, no studies have compared and contrasted the two. By comparing the two models, more insight was obtained on the role control plays in empowerment and helplessness – two essential elements of each model - that can either aid or hinder sales performance. Based on the results of this study, it appears that the AQ model may provide a more complete and consistent framework for identifying who is empowered and who is helpless. Additional studies are needed to further illuminate how Explanatory Style and AQ predict performance.

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Appendix A

Approval Letter from SJSU Human Subject Institutional Review Board

Appendix B

Explanatory Style and AQ Terms and Definitions

Explanatory Style

Optimistic Explanatory Style. The causes of positive events are attributed to

internal, stable and global causes while the causes of negative events are attributed to

external, temporary and specific causes. A high CoPos score and low CoNeg score

would be more optimistic.

Pessimistic Explanatory Style. The causes of positive events are attributed to external,

temporary and specific causes while the causes of negative events are attributed to

internal, stable and global causes. A low CoPos score and high CoNeg score would be

more pessimistic.

Individual dimensions score. The overall score across each dimension (i.e., the

internal/external overall score, the stable/temporary overall score, and the global/specific

overall score). The individual dimension scores are only calculated for negative events

for the present study in order to compare them against the CORE dimension scores in the

AQ model, which are for negative events only.

AQ

Adversity Quotient (AQ). The ability to deal with adversity is measured by the four

dimensions of CORE (Control, Ownership, Reach, and Endurance) (Stoltz, 1997). The

sum of the CORE scores yields a composite AQ or total AQ score. The higher the scores,

the higher the AQ.

Appendix C

Attributional Style Questionnaire
(ASQ)

Appendix D

Adversity Response Profile®
(ARP®)

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