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# The Influence Of Explanatory Style On The Performance Of Pharmaceutical Sales Representatives In A U.S. Company

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**THE INFLUENCE OF EXPLANATORY STYLE ON THE PERFORMANCE OF  
PHARMACEUTICAL SALES REPRESENTATIVES IN A U.S. COMPANY**

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**Submitted for  
Master of Arts in Corporate and Public Communication  
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**2005**



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Thomas W. Costello

Dedicated to my son, Tom, who is about to begin his third year at Fairfield University in Connecticut. His own hard work and dedication to higher learning has been an inspiration to me in completing this project.

*“A pessimist sees the difficulty  
in every opportunity;  
an optimist sees the opportunity  
in every difficulty.”*

**- Winston Churchill**

## **Abstract**

This field study assessed the influence of explanatory style on the productivity of 52 pharmaceutical sales representatives in a U.S. company. Fifty-two percent of subjects were female, mean age was 33.6 yrs, and mean tenure was 3.8 yrs. All subjects had comparable territory responsibilities and worked in geographical areas with similar economic conditions. The Seligman Attributional Style Questionnaire (SASQ) measured for explanatory style. Productivity was determined using cumulative incentive earnings tied to product market share growth. For statistical analysis, subjects were segmented into top 50% and bottom 50%, based on mean incentive dollars earned over 8 quarters. Each subject was employed for the entire 2-year incentive period. This research demonstrated that those in the top half for optimistic explanatory style were significantly more productive (51%) in terms of average incentive earnings. Overall, they showed superiority in 4 of 6 study variables, including attributions for positive outcomes (CoPos), which they tend to view as internal, stable and global. Scores in three other composite measures (CPCN, CPCNAch & HPHN) reinforced this finding. Contrary to learned helplessness theory, attributions for negative outcomes did not predict for optimism. Mean scores for Composite Negative (CoNeg) were not significant for top half vs bottom half incentive earners. This differs from the Met Life Study results (Seligman,1986), but more closely aligns with attribution research in the U.K., demonstrating the motivational influence of controllability, correlation of sales performance and attributes for positive outcomes (Corr & Gray, 1995) (Corr & Gray, 1996), (Silvester, 2003), and the effect of effort and strategy in overcoming internal, unstable, controllable attributes for negative

outcomes (Sujan, 1986). Study limitations include: a small number of subjects, which could account for results differing from other U.S. studies in sales, and the marginal reliability of the SASQ. Future research should include a more reliable measurement instrument, a retrospective study of 100-200 subjects with a 2-year prospective leg, underscoring application to recruiting, hiring and employee development. The study demonstrated that, in this group of sales representatives, attributions for positive outcomes were the stronger motivational driver. Representatives with optimistic explanatory style were more productive when compared with their pessimistic co-workers.

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## **CHAPTER I**

### **INTRODUCTION**

One of the most challenging responsibilities for a manager of a sales division is finding and hiring the right person for an open territory. Even after closely matching a candidate against a well-tested hiring profile, and using past performance, interviews and reference checks to thoroughly assess the person's aptitude (ability to do the job) and motivation (willingness to do the job), often some small degree of uncertainty remains. In a process that requires both "science and art," a hiring manager never knows for sure if a person will become a strong performer. Often other factors, not observed until the person is actually in the job, play a surprisingly large role in determining whether the new sales representative succeeds or fails.

In the pharmaceutical industry, a promising candidate for a sales representative position is typically an individual with a college degree; the ability to learn highly-technical product information; demonstrated success in sales; strong interpersonal, communication and leadership skills; a high level of motivation to succeed; and the ability to work both independently and as part of a team.

By the time a new hire has completed the formal training program, and begins making sales calls on physicians in an assigned territory, the company has already made a significant financial investment in that representative's recruitment and development.

Using the common formula of 'starting base salary plus 50%,' a new representative who

quits in the first year costs the company in excess of \$90,000 (Meyers, 2004), underscoring the importance of making good hiring decisions.

Despite the best efforts of industry management to hire qualified individuals according to a profile with a heightened chance for success, some representatives fall short of expected levels of sales production, resulting in average annual turnover of 10-14% for both primary care and specialty sales forces (Meyers, 2004). Promotion to other positions accounts for some turnover, but a larger segment is the result of dissatisfaction with compensation or a manager, or poor performance leading to resignation or termination.

Selling pharmaceutical products in a crowded, highly-competitive market is a demanding position that requires persistence and the ability to overcome obstacles on a daily basis. Over the past two decades, there has been a sharp increase in the number of pharmaceutical sales representatives. One estimate places the number at 25,000 in the early-1980s, with a more recent total of over 80,000 (Ross, 2005). Some companies, promoting several products across multiple divisions, are expanding their sales forces in order to double and triple the number of representatives calling on one physician.

Office-based physicians are under ever-tightening constraints in managing a practice, resulting in less time available to representatives for face-to-face selling. Actual selling time has been reduced to five minutes or less (Goldberg, 2005). One study found that, in 43% of calls, the representative sees someone other than the physician, and often just to

leave samples (2005). Physicians seem to have learned that they can access needed drug information from other sources, like medical journals and online websites.

A small minority of physicians has even begun charging representatives the cost of an office visit in exchange for selling time; others will only see representatives if they provide lunch for them and their office staffs. Some have stopped seeing sales representatives entirely.

To compete in this market, pharmaceutical companies are continually looking for better ways to recruit, develop and maintain a salesforce able to deal effectively with these obstacles and grow product sales despite ever-increasing resistance.

The author's interest in this subject stems from twenty-five years of experience in the pharmaceutical industry, with fourteen of those years in sales management with direct responsibility for recruiting, hiring and developing field sales representatives.

### **Purpose of the Study**

Explanatory style relates to the way people explain the causes for events that happen to them, both positive and negative. The term *style* relates more to the "consistency of the causal explanations" than it does to a "fixed personality trait" (Peterson, 1988). The underlying question in assessing explanatory style: "why do some people, when faced

with a difficult situation, find a way to overcome it, while others seem to just give up” (Seligman, 1975).

In 1986, Martin Seligman, who first identified explanatory style, was asked by the president of the Metropolitan Life Insurance Company to help him solve a costly problem: the rapid turnover and poor productivity of their sales agents. His study and recommendations led to significant drops in turnover and a 37% increase in insurance sales (Seligman & Schulman, 1986).

Seligman’s research into explanatory style has since been applied to numerous areas of human behavior and motivation, including academic achievement, athletic performance and worker productivity. The design and widespread impact of the Met Life Study provided the primary motivation behind this study.

The influence of explanatory style on the performance of pharmaceutical sales representatives is an intriguing area of study. While pharmaceutical sales is characterized by similar obstacles of failure and client indifference experienced in insurance, real estate and other face-to-face selling environments, there are clear differences in the magnitude and frequency of those events.

At the time of hire, representatives are provided with a database of established clients (physicians), making it unnecessary to conduct the level of prospecting required in other industries. A secure base salary means they don’t have to deal with the inherent risks of commission-based sales, where much smaller salaries are coupled with the potential to earn significantly more in above-base incentives.

A similar distinction can be drawn between pharmaceutical and medical device sales, where gaining access to the key decision maker is often more difficult and success is dependent on closing the sale as quickly as possible.

For these reasons, pharmaceutical sales is often viewed as a “softer” sell, where the primary client, the prescribing physician, is generally not directly purchasing the product. Success comes after multiple calls, by steadily winning agreement on clinical advantages over competition, and by convincing the physician to write prescriptions. Actually “closing” the sale can take many months or more. One study shows that, following the launch of a new product, it sometimes takes an average of 6.5 additional calls on a physician to generate the first prescription (Tosh, 2005).

As discussed earlier, the obstacles a representative encounters are real and numerous, but not as extreme as those faced by insurance agents, where high levels of frustration and turnover are more common.

So why study explanatory style as it relates to pharmaceutical sales? Past research into explanatory style focuses on a variety of industries, but not pharmaceuticals, arousing the author’s interest in identifying which components of explanatory style motivate this kind of sales representative. Differences in both the nature of the job and the sales person’s causal explanations could point to a different set of motivators than those established in Seligman’s insurance study. Finally, the results of this study could provide valuable insight for hiring managers into how measuring explanatory style could help identify optimistic sales candidates.

## **Research Question**

How does Explanatory Style Influence the Performance of Pharmaceutical Sales Representatives in a U.S. company?

## **Subsidiary Research Questions**

- After segmenting subjects into two halves, top and bottom incentive earners, and cross matching them against specific components of explanatory style, are there statistically significant comparisons to be drawn?
- How will dependent variables identified as significant in this study compare with the literature?
- Are gender, age and sales tenure significant demographic variables in assessing explanatory style?
- Is the SASQ the best instrument for measuring explanatory style in this group of sales representatives?

## **Study Limitations**

This retrospective, productive study examines the performance of a group of 52 sales representatives across three geographical regions, with sales tenure ranging from 2 to 5

years, and compares that performance with an identified explanatory style. Time constraints prevent adding a longitudinal assessment of the same subject group.

The study includes a small subset of sales representatives from one company, leaving open the question as to how the findings might apply to a larger, more generalized population.

The marginal reliability scores reported for the measurement instrument used in the study could affect results. Reliability improves when component scores are included.

Seligman is a strong proponent of the potential for a person to change a predominantly pessimistic explanatory style to a more optimistic one (Seligman, 1990). He writes extensively on the subject, particularly as it relates to children. The developmental value of the SASQ and its application to recruiting and hiring, will not be studied here, but would be an interesting follow-up study.

### **List of Definitions**

**Achievement (Ach)** a composite score from the SASQ. It is taken from six work/achievement situations.

**Affiliation (Aff):** a composite score from the SASQ. It is taken from six relationship/affiliative situations.

**Attribution Theory:** relates to how people understand causes for events and how this can affect their thinking, emotions, motivation and behavior. Bernard Weiner is a leading proponent who described outcomes in terms of three causal

dimensions: locus of causality, internality and controllability. His primary focus was on the effect of attribution style on human achievement.

**CAVE:** Content Analysis of Verbatim Explanations – a way to measure explanatory style that overcomes the limitations of a questionnaire by extracting causal explanations from a person's actual statements or writings.

**Composite Positive (CoPos):** the composite of three dimensions (internal, stable & global) of causal attributions for positive events. The score is based on responses to the SASQ.

**Composite Negative (CoNeg):** the composite of three dimensions (internal, stable & global) of causal attributions for negative events. The score is based on responses to the SASQ.

**CPCN:** Composite Positive Composite Negative - a composite score SASQ calculated by subtracting CoNeg from CoPos.

**Explanatory Style:** relates to the human tendency to attribute events to perceived causes and to do so in a consistent, habitual way. Concept developed by Martin Seligman from the Learned Helplessness Model. A person can have an optimistic or pessimistic explanatory style. Seligman was most interested in the connection between pessimistic explanatory style and depression.

**EASQ:** the Extended Attributional Style Questionnaire - it was developed by Peterson & Villanova as a way to improve upon the reliability the SASQ. It contains 24 negative situations to measure explanatory style.

**Globality:** a dimension from the SASQ indicating the pervasiveness of an identified cause.

**Hopelessness (HN):** a composite score from the SASQ. It is the average of scores for stability and globality related to negative situations.

**Hopefulness (HP):** a composite score from the SASQ. It is the average of scores for stability and globality related to positive situations.

**HPHN:** a composite score from the SASQ calculated by subtracting the Hopelessness score from the Hopefulness score.

**Internality:** a dimension from the SASQ indicating a personal locus for an identified cause.

**Learned Helplessness:** a behavioral response to negative events first identified in animal studies by Martin Seligman that later was linked to depression in humans.

**OASQ:** the Occupational Attributional Style Questionnaire is used to measure explanatory style in work settings. It contains 10 situations with an equally divided number of positive and negative.

**Productivity:** refers to the performance of a pharmaceutical sales representative, usually measured by prescription volume and market share of promoted products generated in a territory.

**SASQ:** the Seligman Attributional Style Questionnaire is used to measure explanatory style in any context. It contains 12 situations, equally divided between positive and negative, affiliation and achievement.

**Stability:** a dimension from the SASQ indicating a permanence and persistence over time of the identified cause.

## CHAPTER II

### REVIEW OF THE LITERATURE

While there are numerous studies in sales, including retail, insurance, real estate, telemarketing and financial services, a review of the literature demonstrates that a study examining the role of explanatory style in the performance of pharmaceutical sales representatives has never been done.

It is important to place explanatory style into some historical context, including the origin and evolution of the learned helplessness model, dimensions of explanatory style, various instruments for measurement, attributional theory, and relevant research in sales.

#### **Learned Helplessness Theory**

The concept of explanatory style has its origins in the learned helplessness theory developed by Martin Seligman at the University of Pennsylvania in the 1960s (Overmier & Seligman, 1967) (Seligman & Maier, 1967).

As a young experimental psychology student in 1964, Seligman was conducting Pavlovian conditioning studies in dogs under the direction of Richard L. Solomon, a prominent learning theorist. The objective of the animal studies was to apply insights about mental illness to research in humans. One study involved restraining the dogs and subjecting them to a high-pitched tone and harmless electrical shock...first one, followed

by the other. By pairing the two, the hope was that the dogs would become conditioned and, upon hearing the tone, would react as if they were shocked (1990).

In the second phase of the experiment, the dogs were put into two-compartment “shuttleboxes,” divided by a low barrier. It was expected that, upon hearing the tone, the dogs would associate it with the more unpleasant shock and escape by jumping over the barrier.

At that point, Seligman and his research partner, Bruce Overmier, noticed something unusual. The dogs were not trying to escape from the box; they responded to the tone by just lying down and whimpering. At first, the researchers were annoyed because the dogs were holding up their experiment. Then Seligman realized the significance of their behavior. In the earlier phase of the study, when the dogs were restrained and repeatedly shocked, they learned that, regardless of what they did, they could neither avoid nor control the shocks. They gave up; they had learned to be helpless (1990).

Furthering his research in animals, Seligman soon discovered that, while a segment of dogs became helpless, another segment did not. They resisted. He began to focus on a link between learned helplessness and depression. In 1974, Seligman “proposed that reactive depression and learned helplessness shared critical features, such as causes, symptoms, consequences, treatments and preventions” (Peterson, Buchanan & Seligman, 1995).

Ongoing study began to expose flaws in the learned helplessness model as applied to humans. While it was successful at establishing long-term debilitation as a reality in a segment of the population, the model's reach was inadequate in accounting for all kinds of human response to negative events outside of their control. According to Peterson et al., (1995) "Failures of adaptation that the model was supposed to explain, such as depression, were sometimes characterized by a striking loss of self-esteem, about which the model was silent."

### **Reformulated Helplessness Theory**

Leaving the foundation of learned helplessness intact, Abramson, et al., (1978), reformulated the original model by applying it to humans and adding the important insight that people who experience uncontrollable events reflect on the causes.

According to Seligman (1990), if, after internal dialogue, the person views the cause as stable (long lasting), the "attribution" or explanation will reinforce long-term helplessness. A cause viewed as internal, stable and global, compounds helplessness. A cause perceived as external, unstable and specific, minimizes helplessness. This concept is the cornerstone of explanatory style.

### **Explanatory Style**

Initially, explanatory style was termed "attributional style," a reference to the human tendency to attribute events to perceived causes (Seligman, Abramson, Semmel & von Baeyer, 1979). For the most part, the two terms are used interchangeably. Peterson

(1988) claims his personal shift to the use of the term explanatory style in his studies and writings was due to its ability to capture the primary, specific focus of research: causal explanations. The term “attribution” seemed inadequate because it easily encompassed other, unrelated meanings, such as a “property or characteristic linked to an event or outcome” (Seligman et al., 1984).

As mentioned earlier, causal explanations tie to three core dimensions: internal/external, stable/unstable and global/specific. (Table 1)

**Table 1**  
**Dimensions of Explanatory Style**

---

Internal: “It’s me”

External: “It’s someone or something else”

---

Stable: “It’s going to last forever”

Unstable: “It’s short-lived”

---

Global: “It’s going to affect everything that happens to me”

Specific: “It’s only going to influence this”

---

(Abraham, Seligman & Teasdale, 1978).

A person who tends to see negative events as internal, stable and global has a pessimistic explanatory style. One who views the same negative event as external, unstable and specific has an optimistic explanatory style. Seligman (1990) further clarifies the meaning of the core dimensions by placing them in these three contexts: “personalization, permanence and pervasiveness.” (Table 2).

**Table 2**

**Explanatory Style Dimension: Internal/External (Personalization)**

---

	Positive Event	Negative Event
Optimist	Internal Cause (Personal)	External Cause (Not Personal)
Pessimist	External Cause (Not Personal)	Internal Cause (Personal)

---

For example, the pharmaceutical sales representative with an optimistic explanatory style will say: *“The physician is writing prescriptions for my products because I did a good job conveying the clinical benefits.”* (Internal) or *“The physician is not writing prescriptions for my products because managed care is not reimbursing.”* (External)

The representative with a pessimistic explanatory style will say: *“The physician is writing prescriptions for my products because the previous rep sold him on the benefits.”* (External) or *“The physician is not writing for my products because I don’t use selling time well.”* (Internal)

The same tendency is observed for the stable/unstable dimension (Table 3).

**Table 3**  
**Explanatory Style Dimension: Stable/Unstable (Permanence)**

	Positive Event	Negative Event
Optimist	Stable Cause (Permanent)	Unstable Cause (Transient)
Pessimist	External Cause (Transient)	Internal Cause (Permanent)

The representative with an optimistic explanatory style will say: *“The physician saw me today because I always add value to her practice.”* (Stable) or *“The physician didn’t see me today because she was too busy, but I’m sure she will if I come back later in the week.”* (Unstable)

The representative with a pessimistic explanatory style will say: *“The physician saw me today because I got lucky. The receptionist talked her into it.”* (Unstable) or *“The physician didn’t see me today because I never seem to get there at the right time.”* (Stable)

The same distinction applies to the global/specific dimension (Table 4).

**Table 4**

**Explanatory Style Dimension: Global/Specific (Pervasiveness)**

---

	Positive Event	Negative Event
Optimist	Global Cause (Pervasive)	Specific Cause (Limited)
Pessimist	Specific Cause (Limited)	Global Cause (Pervasive)

---

The representative with an optimistic explanatory style will say: *“I won the sales award because I work hard, just like I do in my graduate class and on the softball team.”*

(Global) or *“I didn’t win the sales award this year because a few of my top prescribers moved away, so I’ll uncover new business and win it next year.”* (Specific)

The representative with a pessimistic explanatory style will say: *“I won the sales award because my boss happened to be in a good mood.”* (Specific) or *“I didn’t win the*

*sales award because I never win anything.”* (Global)

## **Measuring Explanatory Style**

### **SASQ**

The Seligman Attributional Style Questionnaire (SASQ) was the first instrument developed to measure dimensions of explanatory style. Seligman, et al., (1979) initially used the SASQ in a study of depressive attributional style.

Following its introduction in the 1970s, the SASQ was used primarily in the study of depression. Since then, its use extends into many other areas, including, the influence of explanatory style on worker productivity, the focus of this study.

The SASQ is a self-report instrument consisting of 12 hypothetical situations, equally divided between positive and negative. Half are interpersonal/affiliation-related and half are work/achievement-related (Table 5).

**Table 5****Situations on the Seligman Attributional Style Questionnaire (SASQ)**

Outcome	Description	Order	Situation
Good	Affiliation	1	You meet a friend who compliments you on your appearance
		6	You do a project that is highly praised
		9	Your spouse (significant other) has been treating you lovingly
Bad	Affiliation	4	A friend comes to you with a problem and you don't try to help
		7	You meet a friend who acts hostilely toward you
		11	You go out on a date and it goes badly
Good	Achievement	3	You become very rich
		10	You apply for a position that you want very badly (e.g., important job, graduate school admission) and you get it
		12	You get a raise
Bad	Achievement	2	You have been looking for a job unsuccessfully for some time
		5	You give an important talk in front of a group and the audience reacts negatively
		8	You can't get all the work done that others expect of you

(Peterson, Semmel, von Baeyer, Abramson, Metalsky, Seligman, 1982)

In the directions for completing the SASQ, the subject is asked to read the description of the situation, vividly imagine themselves in the situation, and write a possible reason (“cause”) for why that event occurred. The three questions that follow use a 7-point rating scale to determine the extent to which the cause is internal/external, stable/unstable and global/specific (Seligman et al., 1979). The cause does not factor into the scoring; however, it is sometimes used by researchers for additional insight into the choices that follow.

Composite scores (CoNeg, CoPos) are obtained separately for the six positive and six negative events by adding and averaging the subject’s ratings for each dimension. These scores determine an explanatory style for both good and bad events. By subtracting the CoNeg from the CoPos, a composite score for explanatory style is achieved (CPCN).

By totaling and averaging scores for stability and globality across each dimension, two additional scores for hopelessness (bad events) and hopefulness (good events) are obtained.

Subtracting the hopelessness score (HN) from the hopefulness score (HP) results in another composite score (HPHN). Additional scores for Affiliation (Aff) and Achievement (Ach) can be determined by totaling ratings for their respective situations, then averaging scores for positive and negative events (Seligman et al., 1979).

In summary, the SASQ generates a total of 18 scores: six individual scores for dimensions (Internal, Stable, Global - 3 positive, 3 negative), three composite scores for dimensions (CoNeg, CoPos, CPCN), two individual scores for HN and HP, one composite score (HPHN), and six composite scores related to affiliation and achievement (CoNegAff, CoPosAff, CPCNAff), (CoNegAch, CoPosAch, CPCNAch). Depending on research objectives, the last nine scores generally are not used as often as the first nine (Reivich, 1995).

### **SASQ Reliability**

According to Reivich (1995), despite its popularity, the reliability of the SASQ is marginal, particularly for individual dimension scores. However, composite scores improve reliability, enough so that the instrument's usefulness is maintained.

Based on "a range of scores from 0 (no reliability) to +1 (perfect reliability)", Abrami, et al., (2001) report that 'reliabilities around .9 are considered excellent; reliabilities below .6 are considered marginal.'" Table 6 shows an assessment of the SASQ's reliability by one group of investigators. These scores are consistent with the literature.

**Table 6****SASQ Reliability Scores**

---

	<u>Positive Events</u>	<u>Negative Events</u>
Internality	.52	.40
Stability	.58	.67
Globality	.52	.66
Composite	.73	.69

---

Chronbach's (1951) alpha                      (Sweeney, Anderson & Bailey, 1986)

Hessling, et al., (2002) point out other weaknesses with the SASQ, including, the inability of the instrument to “assess the key attributional dimension of controllability ... the most important attributional style dimension” and the unclear distinction between affiliation and achievement, where “several of the ‘achievement’ items involve affiliative contexts.”

**SASQ Transparency**

The transparency of the SASQ, (i.e., the ability of a subject to fake responses in order to achieve a better score) was measured by Schulman, et al., (1987) in a study involving 61 college undergraduates. They divided the group into three sections (control, incentives & incentive-plus-coached). The control group was only given the SASQ. The incentive group was given the SASQ and told that the person achieving the highest score would receive \$100. The third group was told the same as the second group, but they were also given information about the objectives of the SASQ. They were told what was being

measured. The study showed no differences in scores among the groups, establishing the SASQ's lack of transparency.

### **Other Measurement Instruments**

In an effort to improve upon the overall reliability and internal consistency of the SASQ, and measure explanatory style in specific contexts, several variations were developed, including the Expanded ASQ, the Occupational ASQ and the Academic ASQ. The CAVE technique uses a unique methodology to achieve the same end result.

The EASQ follows a similar format as the SASQ, but includes 24 events, all negative, versus 12 events on the original questionnaire (6 positive, 6 negative) (Peterson & Villanova, 1988). The increased negative events improve reliability (.66 for internality, .85 for stability and .88 for globality) (Reivich, 1995). One criticism of the SASQ is that it lacks a measure for controllability. For this reason, Peterson added a controllability rating scale to the EASQ, but found in one study of 140 college students that it correlated weakly with depression, contrary to other research (1991).

The OASQ contains 10 events (5 positive outcomes, 5 negative outcomes) in a similar format to the original SASQ. However, all events relate to a work environment (Furham, Sadka & Brewin, 1992).

The AASQ contains 12 negative events, designed to measure explanatory style in the context of school achievement. It also has strong reliability ( $\alpha = .84$ ) (Peterson & Barrett, 1987).

The CAVE technique (Content Analysis of Verbatim Explanations), developed by Peterson & Seligman, overcomes the limitations of a questionnaire by extracting causal explanations from a person's actual statements or writings, such as letters and interviews, rendering a candor and authenticity to described events. One fascinating study by Zullo, et al., (1988) used the CAVE technique to identify explanatory style through the acceptance speeches of presidential candidates from 1948 through 1984, including Lyndon Johnson and Dwight Eisenhower. More often than not, the optimistic candidate won the election. His analysis of the stump speeches of presidential candidates from 1900 through 1944 led to the same conclusion.

### **Met Life Studies**

In the late 1980s, Martin Seligman and Peter Schulman conducted a series of landmark studies of explanatory style in outside sales. The insurance industry had already done its own studies and learned that "78% of life insurance agents hired in the United States [in 1983] quit within three years" (1986).

At the time, the standard industry practice was to give candidates for sales agent positions a test called the Career Profile to measure aptitude and motivation for selling insurance. The test was challenging; only 30% survived the screening. At Met Life, after they

administered the Career Profile and conducted a series of interviews, they hired only “5000 from a pool of 60,000 candidates.” After only four years, “80% had left the company...costing Met Life \$75 million annually” (HR, 1997). Seligman convinced John Creedon, the company CEO, that measuring for optimism was likely the missing piece in their hiring practices (1990).

Seligman’s Met Life Studies took a total of five years to complete and tested the explanatory style of 15,000 agents. The first leg was a concurrent, cross-sectional trial of 94 subjects, designed to assess their explanatory style and overall productivity (commission earnings from new insurance policies sold). Subjects were given the SASQ after hire. They had previously been given the Insurance Industry’s Career Profile, initially called the Aptitude Index Battery (AIB). They were segmented into two groups: top 50% and bottom 50%, based on quarterly production average. (1986).

The investigators found that explanatory style for negative events (CoNeg) significantly correlated with sales productivity. Therefore, “agents with an optimistic explanatory style sold more insurance than agents with a pessimistic explanatory style.” Overall, “agents in the top half of optimistic explanatory style sold 37% more insurance than the agents scoring in the pessimistic [bottom] half” (Seligman,1986).

The second part of the study was longitudinal (one year), and looked at whether explanatory style, measured by the SASQ at the time of hire, could predict for both productivity and turnover. All 103 agents also took the AIB. (Seligman,1986).

As expected, optimistic explanatory style “predicted first year survival [agents did not quit] as well as productivity for the second half of the year. It did not significantly predict productivity for the first half of the year” (Seligman,1986).

In another segment of the longitudinal leg of the study, they tracked sales of 15,000 agents for two years. Both the SASQ and the AIB were administered. Combined test scores resulted in the agents being slotted into three study groups: regular agent (top scores), special agent (middle scores), and special agent control group (bottom scores). Regular agents with an optimistic explanatory style sold more insurance than regular agents with a pessimistic explanatory style. The SASQ significantly predicted survival among low producers, but not for the high producers (Seligman, 1986).

In the fourth and final part of the study, the researchers used the SASQ to help Met Life select 875 new hires (all scored high on the SASQ, but below average on the Career Profile) and found that these agents performed over 18 months as well as agents scoring high on both tests (Seligman,1986).

The significance of these studies is that they clearly demonstrate that an optimistic explanatory style for *negative* events (low CoNeg) successfully predicted both worker productivity and turnover. Put another way, the agent who viewed negative events as internal (personal), stable (permanent) and global (pervasive), markers for a pessimistic

explanatory style, was less persistent in making sales calls, produced less and was more likely to quit the job.

Also of interest is the lack of significance for CoPos, and the “moderate significance” of CPCN. Agents with an optimistic explanatory style for positive events (CoPos), (i.e., they explain them as internal, stable and global), did not produce more or quit less than their pessimistic counterparts.

In the one-year study, agents with “Good CPCN” (low CoNeg and high CoPos) did not produce more in the Top 50%/Bottom 50% division, but did in the quartile and decile breakouts. In the prospective study, CPCN did not correlate in the first six months of production, but did in the second six months (Seligman, 1986).

### **Learned Optimism**

As research in explanatory style expanded over the past two decades, the theory has also evolved. For many years, Martin Seligman’s primary focus was on the negative side of the equation: exploring the pathology associated with learned helplessness (i.e., the way people think about failure can lead to depression). More recently, a rather dramatic shift has occurred, marked by the publication of his book “Learned Optimism” (1990). There Seligman advocates for the power of optimism to “protect you against depression, raise your level of achievement ...enhance your physical well-being.” The central premise of the book is that people can change their negative thought patterns. With practice, pessimists can learn optimism (1990).

For perhaps the first time, Seligman addresses the value of pessimism, suggesting that pessimists often have a better grasp of reality than optimists have, know what they can and cannot control, and are hesitant to take unnecessary risks. Therefore, they have important roles to play in organizations, such as in finance and senior executive positions (1990).

Seligman thinks optimists are better suited for sales and marketing positions due to their visionary abilities and willingness to test boundaries. Therein lies the danger. On the one hand, an optimist is protected from the harshness of reality by distorting it, but can also be victimized by missing the warning signs (1990).

Seligman clarifies that these observations, drawn from years of research, are not hard and fast rules designed to segment and define the population. Most people, to varying degrees, are a blend of both optimism and pessimism, but they tend to have one predominate style (1990).

At the heart of the “learned optimism paradigm” is the traditional learned helplessness model. In a study in sales, Sujan repeats and then challenges this foundational concept: “teaching salespeople to dispute internal, stable or global attributions for their failures improves their expectancy for success...helps performance and reduces turnover, [and] teaching [them] to dispute external, unstable or specific attributions for their successes improves...expectations and performance and alleviates turnover.” His argument, similar

to Weiner's (1986), is the view that "stable and global... attributions impact future expectations but the locus of causality does not" (Sujan, 1999).

The relevance of the internality dimension has been called into question, weakening a core element in the paradigm. This is due to its "inconsistent correlates," low reliability scores, and uncertainty "that it has a direct impact on expectations" (Peterson, 1991). The result is a renewed emphasis on stability and globality, where there are more consistent, robust correlates (1991). Therefore, it does not matter a great deal if a salesperson internalizes or externalizes negative outcomes because a sense of control can serve to protect self-esteem, motivate to create a better strategy, and enhance performance expectations.

Another development in theory of explanatory style separates positive and negative outcomes. One is not the opposite of the other; "optimism is not simply the absence of pessimism" (Peterson, 1990). Studies have shown that CoPos and CoNeg scores on the SASQ generally do not show strong correlation, weakening the validity of the component CPCN (Corr & Gray, 1994). This further undermines the central premise of the learned optimism paradigm.

### **Attribution Theory**

In developing the framework for his theory of attribution, Bernard Weiner identifies three causal dimensions for human success or failure: locus, stability and controllability

(1985). The first two dimensions are similar in meaning to internality and stability from the Learned Helplessness Model. Controllability distinguishes the two theories.

By locus, Weiner is referring to a *locus of causality*, not locus of control. The cause of a person's success or failure is either *internal* (dispositional, emanating from within... such as, ability or intelligence) or *external* (situational, emanating from without...such as, the weather or a car accident). The locus or cause can be *stable* (likely to last) or *unstable* (likely to change). By *controllability*, Weiner contrasts causes that one can control, such as skill or effort, and causes one cannot control, such as luck or intelligence (1985) (Table 7).

**Table 7**

**Attribution Theory**

Attribution	Locus of Causality	Stability	Controllability
Skill	Internal	Stable	Uncontrollable
Personality	Internal	Stable	Uncontrollable
Effort	Internal	Unstable	Controllable
Luck	External	Unstable	Uncontrollable
Task Difficulty	External	Stable	Uncontrollable

(Weiner, 1980)

Weiner's three dimensions (locus, stability & controllability) are primary determinants of emotion and motivation. If a salesperson, for example, meets with some success or failure

during a sales call and attributes the success to a cause that is internal, stable and controllable (such as effort or skill), that person will feel either a sense of pride or shame as a result. Self-confidence and self-esteem could be either reinforced or weakened. Similar experiences in the future, and the emotions created because of them, will further reinforce pride or shame. This strong link between causal dimensions and emotion leads to motivation, either positive or negative (1980).

### **Research in the United Kingdom**

Many U.S. studies support the reformulated learned helplessness model (Abramson, et al., 1978) (Seligman, 1990) by demonstrating that attributions for negative events (CoNeg) are more predictive for optimistic explanatory style than attributions for positive events (CoPos). However, in several UK studies, also in sales, Composite Positive is the more predictive variable, contrary to Seligman's Met Life Studies and other U.S. research.

In a prospective trial involving 130 male sales representatives selling financial services for a U.K.-based insurance company, optimistic explanatory style (CoPos) ( $\alpha = .71$ ) correlates positively with sales (average value of a policy x the number sold) (Corr & Gray (1996). The research also shows that optimistic explanatory style is a strong predictor of performance ranking. Both productivity measures (sales and ranking) correlate positively with CoPosAch ( $\alpha = .67$ ), and sales correlates with CoPosAff. They report that "low alpha coefficients for CoNeg scales [ $\alpha = .52$ ] were striking" (1996).

The investigators propose possible reasons for the discrepancy in results compared to Seligman's Met Life Study (1986), where good CoNeg was the better predictor of performance.

First, they point to another key difference in research: U.S. studies (Seligman, et al., 1987) show greater "response distortion," or sensitivity to faking with CoPos, while studies in the U.K. show CoNeg as more susceptible (Corr & Gray, 1995).

Second, they connect their low CoNeg scores with "inherent poor reliability" and "low validity." Corr et al. (1996) attribute this weak reliability to "highly successful salespeople [who] are achievement oriented and have poorly developed cognitions for unfavorable events," leading to inconsistent responses.

The study raises another interesting issue regarding the "direction of causation". Is CoPos the result or the cause of an optimistic explanatory style (Corr et al., 1996). Is optimism the by-product of a sales representative's successes, or is it the stimulus leading to success, or is it some combination of both?

It is important to note that the subjects in this study were all "senior salesmen" with average selling tenure of 12.82 years (1996). Due to their seniority, they routinely handled the company's more lucrative selling assignments. Is there a difference in how a

tenured, seasoned representative handles adversity versus one with significantly less experience (one or two years)?

In an earlier study, Corr and Gray (1995) assessed a group of 196 newly hired insurance representatives, mostly males, with a mean age of 32 years. The study lasted 12 months. Here they also used the SASQ to measure explanatory style.

Results were similar in that sales correlated positively with CoPos. Sales were measured by the number of insurance policies sold; varying kinds of policies were given comparable weighting. Corr et al. (1995) included a variable, *effort* (i.e., number of appointments + number of prospects), together with a *socialization* scale. The California Psychological Inventory (CPI) measured interpersonal relations.

“Sales effort relates positively to both positive attributional style (CoPos) and socialization, and [relates] negatively to age...[showing] that effort is highest among young salespeople who are high in positive attributional style and interpersonal skills” (Corr et al.,1995).

Surprisingly, sales and sales effort did not positively relate, meaning that representatives showing strength in socialization (uncovered more prospects and made more appointments) did not necessarily increase sales (Corr et al.,1995).

Silvester, et al., (2003) compare the “predictive validity” of two attribution models, Learned Helplessness and “Achievement Motivation” (Attribution Theory), in a study of the performance of 452 salespeople employed by a large U.K. retail organization. Most of the subjects were female (94%). The retail position requires people who were skilled in customer service. In an effort to tailor a measurement instrument to this type of sales position, the investigators use a series of employee interviews and data from manager-generated performance appraisals to develop a 23-item questionnaire.

The study includes two elements of attribution theory, internal/external and controllable/uncontrollable dimensions, but excludes the third, stability, because the pre-study interviews reveal that most causes were explained as unstable, thereby minimizing validity (Silvester, 2003).

Results mirror those of Corr & Gray (1996) in this important area: “attributions for positive job-related outcomes” proved to be more predictive of performance than negative outcomes. Employees who make internal, controllable attributions for positive outcomes (e.g., initiate customer contacts, provide customer assistance, make more sales) receive better performance appraisals from management (Silvester, 2003).

There was no significant relationship between attributions for negative outcomes and performance, preventing the researchers from “deciding empirically between the Achievement-Motivation Model and the Learned Helplessness Model” (Silvester, 2003).

It is important to note that Silvester (2003) used management evaluations as the primary gauge of employee performance, instead of actual counter sales, for example. The authors highlight the conclusion that sales assistants who viewed positive events in an internal-controllable way received better appraisals from their managers. The study demonstrated that positive outcomes were better predictors of performance than negative outcomes.

### **Learned Helplessness Theory vs Attribution Theory**

A significant difference between Seligman's Learned Helplessness Model and Weiner's Attribution Theory is seen in the element of control.

According to Seligman, a person who fails and explains the cause of failure as internal and stable has a pessimistic explanatory style ("I never get there at the right time"). The same applies if that person externalizes a positive event and views it as unstable ("I just got lucky. That won't happen again"). To Seligman, a habitual pattern of these explanations over time could be a signal for depression. The stronger correlation with depression is the reason why Seligman views CoNeg, not CoPos, as more predictive of an optimistic explanatory style (i.e., a person who attributes negative events to external, unstable and specific causes) (Peterson & Seligman, 1984).

Weiner's view, and that of other attribution-motivation theorists who followed, directly challenges this thinking. If a person sees a cause of failure as internal and controllable (e.g., the amount of effort put into a sales call), the failure could actually motivate the

person to expend more effort on the next call and turn failure into success. The person knows they can control the outcome.

Sujan's sales study (1986) predicts that by working "harder and smarter" (more effort, better strategy), a representative who fails, and views the cause as internal, unstable and controllable, will likely persist and prevail. Again, control is the key element.

In Silvester's study in retail sales (2003), the author concludes that, contrary to learned helplessness theory, counter sales assistants who tend to externalize negative causes and view them as beyond their locus of control, do not perform well. "These individuals are...less likely to strive for success because they perceive no relationship between their own efforts and the sales outcome." As a result, they avoid contact with customers and stifle opportunities. In Seligman's Met Life Study (1986), agents who *externalize* failure sell more insurance. Silvester's top performing retail sales assistants are the ones who *internalize* failure, perceive the causes to be within their control, then are motivated to approach more customers, provide assistance in locating products, or alter their sales pitch. Essentially, they put in more effort to change the outcome.

U.K. studies by Corr et al., (1995) (1996), and research in attribution theory (Sujan, 1996), underscore the importance of attribution for positive events as reliable predictors of performance. Unfortunately, there is a lack of research of attribution theory in a sales context. However, Weiner (1974) draws a strong connection between causal attribution and achievement. He identifies *ability* (internal, stable), *effort* (internal, unstable), *task*

*difficulty* (external, stable) and *luck* (external, unstable) as prominent elements affecting attributions, emotions, motivation and achievement. High achievers will often seek out the more challenging tasks and will succeed because they tend to view their world from an internal locus, have confidence in their ability, as well as their level of effort and persistence to both perform well and repeat that performance in the future. Good results beget good results.

In a study of the effect of positive life events, attributional style and hopefulness on recovery from depression, Needles, et al., (1990) found that “depressives who have an enhancing attributional style for positive events (i.e., make global, stable attributions for such events) will be more likely to regain hopefulness and, thereby, recover from depression, when positive events occur.” The resultant increased hopefulness was also dependent on limiting negative events. The authors conclude that it is the “interaction of cognitive styles [attributional style] and life events that predicts subjects future affective states,” not either one alone.

## **CHAPTER III**

### **RESEARCH DESIGN & DEVELOPMENT**

The sales force of a pharmaceutical company based in the Northeast was chosen for this study for several reasons: 1) it's the author's employer, ensuring knowledge of the business and access to the sales force; 2) its prescription product market shares by representative, district and region are continually tracked and summarized in comprehensive reports; 3) representatives are ranked against their peers based on performance and corresponding incentive dollar payouts are published on a quarterly basis; 4) the stability of the sales force over the past two years (minimal turnover, limited organizational change) made this type of study more feasible.

#### **Subjects**

Representatives with two to five years of sales experience were approached individually at a national sales meeting and asked to participate in a study directly related to selling in the pharmaceutical industry. The support of their management was also obtained. Tenure was the only criterion used to identify potential participants.

Forty-five Seligman Attributional Style Questionnaires (SASQ) were distributed by e-mail to those representatives who agreed to participate. An additional fifteen were e-mailed one week later. The participants were part of 12 sales divisions located throughout the Northeast, Mid-Atlantic and Midwest. A letter of informed consent, which

explained the purpose of the study, and included directions on how to complete the SASQ, assurances of confidentiality, and a target return date, accompanied each questionnaire. The mailing also included three demographic questions related to geographical location, age, and tenure in pharmaceutical sales. Seton Hall's Investigational Review Board reviewed and approved the study design, questionnaire and letter of informed consent prior to mailing. A five-digit code number identified each questionnaire.

Completed questionnaires were returned by e-mail. The "electronic signature" of each mailing served as confirmation of each participant's informed consent. Fifty-five responses were received; 52 were included in the study. Three were excluded due to total sales tenure outside the target range or insufficient performance data available for that territory.

### **Demographic Measures**

The study includes parity in gender distribution. (Table 8).

**Table 8**  
**Subjects by Gender**

	Number	Percent
Female	27	51.9
Male	25	48.1
	52	100.0

The mean age of subjects is 33.6 yrs and mean tenure in pharmaceutical sales is 3.8 yrs. A tight tenure range was maintained because a representative with one year of sales experience or less is still in the throes of a steep learning curve (products and territory). To avoid a wide gap in experience and maintain as much parity as possible in skill development and sales expertise, representatives with tenure beyond five years were not included (Table 9).

**Table 9**

**Tenure in Pharmaceutical Sales**

	Representatives	Percent
Years		
2	7	13.5
3	15	28.8
4	12	23.1
5	18	34.5
	52	100.0

Over half of the study subjects come from the Northeast Sales Region, the focus of the initial SASQ mailing. When additional participants were needed, a second wave was mailed to representatives in the Mid-Atlantic and Midwest Regions (Table 10).

**Table 10**  
**Subjects by Region**

	Number	Percent
Northeast	28	53.8
Mid-Atlantic	16	30.8
Midwest	8	15.4
	52	100.0

All representatives have similar territory responsibilities (number of called-on physicians within target specialties, products promoted, required calls per day). All cover territories with similar economic conditions, so there are no major differences from one territory to another. All are measured by the same performance parameters each quarter to determine rankings vs peers and related incentive payouts. Each subject was employed throughout the eight incentive periods factored into the study. The study did not include subjective performance measures, such as a manager's written appraisal.

To protect confidentiality, completed surveys were only seen by the investigator. Codes were later correlated to names of participants and their corresponding performance rankings over a two-year period.

In selecting an instrument for use in this study, consideration was given to the Expanded ASQ (Peterson & Villanova, 1988), which consists of 24 situations (vs 12 in the SASQ), or the Occupational ASQ, which includes 10 work-related events. The EASQ only measures for negative events (CoNeg). While the reliability of the EASQ is better than

the SASQ in both individual and composite scores, it does not include measures for positive events (CoPos). The OASQ has superior reliability scores, is work specific and includes measurement for “nine dimensions of beliefs” (Furham, Sadka & Brewin, 1992).

It was decided that the SASQ was a good instrument for this study because it included both achievement-related and affiliation-related events (reflective of the dimensions of an outside sales position), as well as a balance of measures for positive and negative events. By relying on all of the SASQ-generated component scores, reliabilities could be raised substantially. Without the benefit of prior studies of explanatory style in pharmaceutical sales, the extensive history behind the SASQ also held appeal.

Most studies, particularly in the U.S., support learned helplessness theory by demonstrating that attributions for negative events (CoNeg) are more predictive of optimistic explanatory style than attributions for positive events (CoPos). However, several UK studies, also with sales representatives, found that Composite Positive was the more predictive variable, contrary to U.S. research.

### **Dependent Measures**

Questionnaires were scored for six attributional style dimensions (internal/external; stable/unstable; global/specific), two summary values (Composite Negative or *CoNeg* & Composite Positive or *CoPos*), and an overall composite score (Composite Positive minus Composite Negative or *CPCN*). Separate scores were also determined for the six

analysis, subjects were segmented into top 50% and bottom 50% based on mean incentive dollars earned over a two-year period. They were further sub-divided into quartiles.

affiliative situations (*CoNegAff*, *CoPosAff*, *CPCNAff*) and the six achievement situations (*CoNegAch*, *CoPosAch*, *CPCNAch*). The resulting scores indicate whether a person has a predominately optimistic or pessimistic explanatory style (Peterson, 1990).

### **Performance Measures**

Statistical analysis included use of frequency tables of demographic variables (gender, age, tenure, and region), the dependent variables listed above, and independent t-tests (two-tailed) for measuring variance between the top and lower 50 percentiles of the incentive pay scale (explanation follows).

Sales representative performance is measured and reported each quarter in a regional ranking based on market share growth in two primary products. This same measurement system and ranking is consistent across all regions in the country. Points are assigned based on product weightings and share attainment in each product. The lower the number of points, the higher the representative's ranking. Fixed incentive dollar amounts correspond to each individual ranking. This same measurement and ranking system is consistent across all regions in the country. Therefore, the top and bottom ranked representatives in the Northeast Region would earn the same incentive as those ranked top and bottom in the Midwest or Mid-Atlantic Regions.

Cumulative incentive dollars earned was used in this study because it was the most accurate and consistent way to capture representative performance over time. For statistical

## CHAPTER IV

### RESEARCH RESULTS

Study results, including statistical analysis of six dependent variables (SASQ Scores) and two independent variables (Average Incentive Earnings for Top 50% and Bottom 50%) are summarized in Tables 11 & 12.

**Table 11**

**SASQ Scores compared to Average Incentive Earnings (Productivity) over 2 Years**

Superior Composite Scores		<i>n</i>	<i>t</i>	<i>p</i>	Avg Incentive	Productivity
Good CoNeg	<i>M</i> = 11.85	26	.446	.657	\$ 34869	
Bad CoNeg	<i>M</i> = 12.13	26			36023	+ 3 %
Good CoPos	<i>M</i> = 16.87	26	2.82	.007	\$ 44608	+ 78 %
Bad CoPos	<i>M</i> = 15.46	26			25040	
Good CPCN	<i>M</i> = 5.03	26	2.65	.011	\$ 46276	+ 35 %
Bad CPCN	<i>M</i> = 3.33	26			35001	

*Note:* CoNeg: Composite negative explanatory style. Good CoNeg: Optimistic explanatory style for negative events. Bad CoNeg: Pessimistic explanatory style for negative events. CoPos: Composite positive explanatory style. Good CoPos: Optimistic explanatory style for positive events. Bad CoPos: Pessimistic explanatory style for positive events. Composite Good CPCN: Optimistic explanatory style for positive and negative events. Bad CPCN: Pessimistic explanatory style for positive and negative events. (Abramson, Seligman & Teasdale, 1978)

A statistical analysis using a t-test for two independent variables (upper half and lower half of incentive pay), revealed that the Good CoNeg has a mean of 11.85 and the Bad CoNeg, a mean of 12.13. The mean difference is .28 and each group has (n) 26 respondents. The

resulting t value is .446, with significance (p) at .657 (2-tailed). These results are not statistically significant, indicating the means for both groups on this composite score are essentially the same.

Continuing the statistical analysis using a t-test for two independent variables, revealed that the Good CoPos has a mean of 16.87 and the Bad CoPos, a mean of 15.46. The mean difference is 1.41 and each group has (n) 26 respondents. The resulting t value was 2.82, with significance (p) at .007 (2-tailed). These results are statistically significant, indicating the means for this composite score are statistically different. The upper half of incentive scale had scores exceeding the lower half and the associated statistical significance is deemed not due to random chance.

Continuing the statistical analysis using a t-test for two independent variables, revealed that the Good CPCN has a mean of 5.03 and the Bad CPCN, a mean of 3.33. The mean difference is 1.70 and each group has (n) 26 respondents. The resulting t value was 2.65, with significance (p) at .011 (2-tailed). These results are statistically significant, indicating the means for this composite score are statistically different. The upper half of incentive scale had scores exceeding the lower half and the associated statistical significance is deemed not due to random chance.

**Table 12****SASQ Scores compared to Average Incentive Earnings (Productivity) over 2 Years**

Superior Composite Scores		<i>n</i>	<i>t</i>	<i>p</i>	Avg Incentive	Productivity
Good HPHN	<i>M</i> = 1.89	26	2.75	.009	\$ 44473	+ 43 %
Bad HPHN	<i>M</i> = 1.16	26			30992	
Good CPCNAff	<i>M</i> = 5.65	26	2.05	.045	\$ 38511	+ 6 %
Bad CPCNAff	<i>M</i> = 3.94	26			36425	
Good CPCNAch	<i>M</i> = 2.47	26	2.61	.012	\$ 42739	+ 47 %
Bad CPCNAch	<i>M</i> = 1.24	26			29060	

*Note:* Good HPHN: Optimistic explanatory style for stability and globality of events. Bad HPHN: Pessimistic explanatory style for stability and globality of events. Good CPCNAff: Optimistic explanatory style for positive and negative affiliative situations. Bad CPCNAff: Pessimistic explanatory style for positive and negative affiliative situations. Good CPCNAch: Optimistic explanatory style for positive and negative achievement situations. Bad CPCNAch: Pessimistic explanatory style for positive and negative achievement situations. (Abramson, Seligman & Teasdale, 1978)

A statistical analysis using a t-test for two independent variables (upper half and lower half of incentive pay), revealed that the Good HPHN has a mean of 1.89 and the Bad HPHN, a mean of 1.16. The mean difference is .73 and each group has (n) 26 respondents. The resulting t value is 2.73, with significance (p) at .009 (2-tailed). These results are statistically significant, indicating the means for this composite score are statistically different. The upper half of incentive scale had scores exceeding the lower half and the associated statistical significance is deemed not due to random chance.

Continuing the statistical analysis using a t-test for two independent variables, revealed that the Good CPCNAff has a mean of 5.65 and the Bad CPCNAff, a mean of 3.94. The mean difference is 1.72 and each group has (n) 26 respondents. The resulting t value was 2.05, with significance (p) at .045 (2-tailed). These results are statistically significant, indicating

the means for this composite score are statistically different. The upper half of incentive scale had scores exceeding the lower half and the associated statistical significance is deemed not due to random chance.

Continuing the statistical analysis using a t-test for two independent variables, revealed that the Good CPCNAch has a mean of 2.47 and the Bad CPCNAch, a mean of 1.23. The mean difference is 1.24 and each group has (n) 26 respondents. The resulting t value was 2.61, with significance (p) at .012 (2-tailed). These results are statistically significant, indicating the means for this composite score are statistically different. The upper half of incentive scale had scores exceeding the lower half and the associated statistical significance is deemed not due to random chance.

### **Analysis of Study Results**

Mean composite scores for four of six dimensions of explanatory style, as measured by the SASQ, were statistically significant, demonstrating that representatives with optimistic explanatory style in those dimensions had superior performance to their coworkers with pessimistic explanatory style.

Composite Positive (CoPos) determines a person's explanatory style for positive events. A person with an optimistic explanatory style explains causes for positive events as internal, stable and global. The average incentive earnings (productivity measure) of sales representatives who score in the Top Half of CoPos exceed the average earnings of those

in the Bottom Half by 78%. This result closely parallels findings in several studies conducted in the U.K. and is reflective of research in attribution theory. It provides a valuable insight into what motivates this group of sales representatives and separates it from other study groups.

Composite Positive-Composite Negative (CPCN) is obtained by subtracting CoNeg from CoPos. The greater the differential between the two scores, the higher the CPCN, indicating a more optimistic explanatory style. A representative with a high CPCN score, relative to the study group, tends to explain the cause of negative events as external, unstable and specific, and positive events as internal, stable and global. The average incentive earnings of sales representatives who score in the Top Half of CPCN exceed the average earnings of those in the Bottom Half by 35%.

Hopefulness-Helplessness (HPHN) is another composite score obtained by subtracting Helplessness (HP) from Hopefulness (HN). The Helplessness score ties to negative events and is an average of stability and globality scores. Hopefulness ties to positive events and is an average of stability and globality scores. The greater the differential between the two scores, the higher the HPHN, indicating a more optimistic explanatory style. A representative with a high HPHN score, relative to the study group, tends to explain the cause of negative events as unstable and specific, and positive events as stable and global. The average incentive earnings of sales representatives who score in the Top Half of HPHN exceed the average earnings of those in the Bottom Half by 43%.

The SASQ contains 12 situations (six positive, six negative) (six related to affiliation, six related to achievement). Composite Positive-Composite Negative for Achievement (CPCNAch) ties only to the six achievement-related situations. A higher score reflects a more optimistic explanatory style. It has added importance because it reflects scores drawn from the only work situations in the questionnaire. Sales representatives tend to be achievement-oriented people, motivated by both intrinsic rewards (pride, sense of accomplishment) and extrinsic rewards (monetary incentives and other awards). The average incentive earnings of sales representatives who score in the Top Half of CPCNAch exceed the average earnings of those in the Bottom Half by 47%.

Mean scores for Composite Negative (CoNeg) were not significant for Top Half vs Bottom Half incentive earners. This is an important finding because it demonstrates that, even if representatives tended to explain the cause for negative events as external, unstable and specific, indicative of an optimistic explanatory style according to the Learned Helplessness Model, it did not translate into higher incentive earnings vs their more pessimistic coworkers. This differs from Seligman's Met Life Study results (1986), but is similar to findings in several U.K. studies in sales by Corr & Gray (1995) (1996), Silvester (2003), and Sujana (1986).

## CHAPTER V

### SUMMARY & CONCLUSIONS

#### **Answer to Research Question**

Explanatory style does influence the performance of pharmaceutical sales representatives in a U.S. company. Representatives with demonstrated optimistic explanatory style are the better performers. They earn considerably more incentive dollars, reflecting their ability to affect product market shares. However, there is one surprise. Prior to the study, it was anticipated that the optimism of top performers would tie to their explanations for negative, not positive, occurrences and align them with subjects in other studies in sales.

Instead, attributions for positive events were more significant. This finding seems to point to a distinct motivational quality of this group of representatives. It could indicate that they do not encounter negative obstacles on a regular basis, or, when they do, they are able to deflect the potentially adverse effect on attitude. The many interactions they have with healthcare providers, their small and large accomplishments, a positive environment to work in, are all factors that could be fueling their motivation and optimism.

## Answers to Subsidiary Research Questions

- *After segmenting subjects into two halves, top and bottom incentive earners, and cross matching them against specific components of explanatory style, are there statistically significant comparisons to be drawn?*

There were significant differences in explanatory style between the top half and bottom half in four of six components, making it possible to connect optimistic explanatory style with higher incentive earnings (greater productivity).

- *How will dependent variables identified as significant in this study compare with the literature?*

Four of six dependent variables were significant for an optimistic explanatory style. However, it was expected that CoNeg would be the better predictor for optimism, in line with learned helplessness research in the U.S. Instead, CoPos was the better predictor, reflecting sales research from the United Kingdom. This result, together with significant scores for HPHN and CPCNAch, reflects research in attribution theory. It also supports the more current view that explanatory style for negative events should be considered separate from positive events. The outcomes are mutually exclusive.

*Are gender, age and sales tenure significant demographic variables in assessing explanatory style?*

There were no significant differences in SASQ scores for men vs women, although CoPos scores for men were slightly higher. There were no significant differences related to tenure in pharmaceutical sales, and no significant differences based on geographical region.

- *Is the SASQ the best instrument for measuring explanatory style in this group of sales representatives?*

This study demonstrates that, as reported throughout the literature, SASQ reliabilities are marginal for individual dimensions. However, reliability improves when composite scores like CPCN, HPHN and CPCNAch are utilized, as in this study. The SASQ proved to be an effective instrument in this small population.

One unanswered question relates to how results might have been different if significantly more subjects were included. One valid criticism of the SASQ is that there are limited situations (12), with only half tied to achievement. In retrospect, some combination of the Expanded ASQ and the Occupational ASQ, with a balance of negative and positive situations, all work-related, might have proven to be a better instrument.

It appears that this study demonstrates a significant difference in the attributions and motivators in this type of sales representative, contrasting with those who encounter failure on a much larger scale (e.g., insurance and real estate agents).

## **Conclusions**

This field study demonstrates that, within this group of 52 pharmaceutical sales representatives, those in the top half for optimistic explanatory style were significantly more productive in terms of average incentive earnings tied to product share growth. Overall, they showed superiority in four of six study variables, including attributions for positive outcomes, which they tended to view as internal (“it’s me”), stable (“it’s going to last”) and global (“it will affect everything”). Scores in two other composite measures (CPCN & CPCNAch) further reinforced this finding, with a third highlighting stable and global attributions for both positive and negative outcomes (HPHN). Contrary to learned helplessness theory, attributions for negative outcomes did not predict for optimism. There was essentially no difference in CoNeg between the top and bottom half producers in the study group.

Without the benefit of previous explanatory style research in pharmaceutical sales, it was the investigator’s hypothesis that results would likely mirror learned helplessness studies in sales, with the best example being Seligman’s (1986) work with insurance agents. However, this research more closely aligns with attribution theory and its emphasis on the influence of three dimensions of locus, stability and controllability on motivation in a sales environment. It is also reminiscent of two sales studies by Corr & Gray (1995) (1996) where sales correlated with attributes for positive outcomes, and sales and ranking correlated with CoPosAch; one by Silvester (2003) where positive outcomes were better predictors of performance in a large group of retail sales assistants; and one by Sujan

(1986) in sales showing that internal, unstable, controllable attributes for negative outcomes could be overcome by greater effort and better strategy. Needles, et al. (1990) showed that stable, global attributions for positive events led to increased hopefulness.

This study indicates a different motivational force at work in this group of representatives vs Seligman's insurance agents. While they certainly encounter resistance and other negative obstacles in their work, they do not seem affected by them. It does not matter if they internalize the negative event ("It's my fault") because they also view it as unstable ("won't last for long") and controllable ("I can turn this around"). In this way, they are able to deflect and neutralize the potentially debilitating effect through a sense of control and ability to step up effort to make the outcome better the next time. The HPHN score (higher for hopefulness) also demonstrates the predominance of the stable and global vs the internal.

These representatives are clearly motivated by the positive. Their positive thinking leads to positive results that serve to further reinforce the permanence and pervasiveness of their positive thinking. It is a self-promulgating, self-fulfilling prophecy. Weiner's attribution theory asserts that "past performance and causal attributions regarding that performance influence expectations of future success" (Badovick et al, 1992). This ability to draw motivation from repetitive successes, both large (incentive awards) and small (a good sales call) could be connected to a variety of factors, including, the culture of the company that fosters a positive work environment and rewards performance; the quality

of their field managers' direction, feedback and support; the strength of their initial and ongoing training that equips them well to handle adversity, etc.

Pharmaceutical sales representatives work independently and are given a great deal of autonomy in managing their territories. They are responsible and accountable for their business. They work from their homes, are issued company-leased cars, given laptop computers to maintain and reference physician records, and generally have a work environment where they can exert control. They also have the benefit of small district sales teams, located in a similar geography with the same responsibilities. Periodic strategy meetings, both in large and small groups, hotel and field-based, provide them with support and the opportunity to sharpen selling skills. In this environment, a representative with an optimistic explanatory style is better able to challenge negative thinking and find ways to focus on opportunities to excel.

The optimistic salespeople in Silvester's study (2003), who were also top performers, were the ones who initiated more sales encounters, and were more willing to risk failure in doing so. Although call productivity was not a measure in this study, it is a common understanding in the pharmaceutical business that success is a "numbers game." To win physician commitment and generate prescriptions, a representative has to make a large number of face-to-face calls. As discussed earlier, one of the main obstacles a sales representative encounters is difficulty gaining access to the most productive physicians. The top producers in this study were also the most optimistic. Their business growth, reflected in their higher average incentive payouts, was not handed to them. They had to

develop it. Based on their results, they found ways to reach and influence their physicians. It is more than likely that the person with an optimistic explanatory style found a way, while the pessimist gave up when faced with resistance.

While gaining access and adequate selling time with physicians are daily obstacles for these representatives, the nature of the sales interaction between representative and physician is very different vs that of an insurance agent and client. They do not meet with the same level of rejection and failure. An insurance agent might have to fail nineteen times before meeting with success on the twentieth try. This poor success/failure ratio can and does foster a negative mindset that leads to more failure. It is also why Seligman found that optimistic agents sold more insurance and stayed in the job longer.

Pharmaceutical sales representatives are well-trained in the technical and clinical aspects of their products. They must be able to converse with physicians on their level about the benefits of products in a specific therapy area. They add value to the physician's practice by providing product samples and patient education material. These factors, together with relatively short selling time and the "softer" close, are in sharp contrast to the hard-nosed, more aggressive approach common in selling insurance, cars, real estate and financial services. Surely, a more positive environment to sell in, with more opportunities to influence outcomes and succeed, contributes to the optimism and performance of the representative, as shown in this study.

The results of this study have value from a recruiting, hiring and development perspective. With average annual turnover in the 10-14% range, an initiative to identify candidates with optimistic explanatory style, as well as aptitude and motivation to do the job, could significantly reduce turnover and increase productivity. Seligman's study confirmed this on both fronts. Seligman's ideas on learned optimism could be incorporated into training programs to assist representatives in changing pessimistic attributions, reinforcing optimistic ones, and improving their chances for longer-term success.

Another study conclusion relates to the structure of the incentive program. Even in a small group of subjects, it was clearly demonstrated that optimistic representatives sell considerably more than their pessimistic counterparts (average of 51% across four measures). If the study size were expanded, it would be impossible to repeat these results with equal significance because the opportunities for incentive earnings are capped. In a larger study, with a wider distribution and more robust t scores, the strongest performers would tend to cluster near the top incentive payout, exposing the inability of the program to reward those performers fairly. The present structure does not allow for that kind of differentiation. It would seem in the interest of the company to allow employees with the most optimistic explanatory style to earn incentives commensurate with their level of performance.

## **Recommendations for future research**

There is need for additional research in this industry to confirm and broaden these results. A prospective study from time of hire, 1-2 years duration, similar to the Met Life Study, could be combined with a larger retrospective leg similar to the current study, allowing for measures of both productivity and turnover.

The small sample size in this study could account for results that are inconsistent with the literature, particularly in the U.S. It would be interesting to increase the number of subjects substantially (e.g., 100) and repeat the same study to test for confirmation of significance for CoPos, CPCN, HPHN and CPCNAch, and insignificance for CoNeg.

In another study similar to this one, it would be important to improve measurement reliability. The SASQ could be tailored to more closely match the subject profile and study objectives (e.g., add both positive and negative situations, decrease the 7-point scale to a 5-point Likert Scale in order to provide a true midpoint of 3) or the EASQ could be used with added positive situations. Other instruments could be included to measure for locus of control and achievement, two elements that emerged as important in this study and in the literature in other studies in sales.

The subject of learned optimism raises the question of how explanatory style research and an improved SASQ could be applied to employee recruiting, training and development in the pharmaceutical industry.

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## Appendix

### Seligman Attributional Style Questionnaire

#### Directions:

Do not put your name on the questionnaire.

Read each situation and vividly imagine it happening to you.

Decide what you believe would be the one major cause of the situation if it happened to you.

Write this cause in the blank provided. (The cause that you provide is not part of the questionnaire. Its purpose is to help you to focus on the next three questions).

Answer three questions about the cause by circling one number per question. Do not circle the words. Go on to the next question.

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Note that some of the questions provide for a range of responses on a scale of 1 to 7.

For example, if you were walking in a yard and tripped and fell, the response choices might be:

<b>The accident was</b>										<b>The accident was</b>
<b>totally due to other</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>			<b>totally my fault</b>
<b>circumstances</b>										

If you believe that the accident was totally due to others (maybe someone left a rake in the yard that you tripped over), you would circle the 1. If you believe that the accident was totally your fault (i.e., you didn't look before walking), you would circle the 7. If it were some of both (i.e., someone left a water hose in the yard, but you were in a hurry and didn't look carefully), you would choose 4, etc.

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## Situations

**You meet a friend who compliments you on your appearance.**

- 1) Write down the one major cause \_\_\_\_\_  
\_\_\_\_\_
- 2) Is the cause of your friend's compliment due to something about you or something about other people or circumstances?  
  
Totally due to other people or circumstances    1   2   3   4   5   6   7    Totally due to me
- 3) In the future, when you are with your friend will this cause again be present?  
  
Will never again be present    1   2   3   4   5   6   7    Will always be present
- 4) Is the cause something that just affects interacting with friends, or does it also influence other areas of your life?  
  
Influences just this particular situation    1   2   3   4   5   6   7    Influences all situations in my life

**You have been looking for a job unsuccessfully for some time.**

- 1) Write down the one major cause \_\_\_\_\_  
\_\_\_\_\_
- 2) Is the cause of your unsuccessful job search or due to something about you or something about other people or circumstances?  
  
Totally due to other people or circumstances    1   2   3   4   5   6   7    Totally due to me
- 3) In the future, when you look for a job, will this cause again be present?  
  
Will never again be present    1   2   3   4   5   6   7    Will always be present
- 4) Is the cause something that just influences looking for a job, or does it also influence other areas of your life?  
  
Influences just this particular situation    1   2   3   4   5   6   7    Influences all situations in my life

**You become very rich.**

1) Write down the one major cause \_\_\_\_\_  
\_\_\_\_\_

2) Is the cause of your becoming rich due to something about you or something about other people or circumstances?

Totally due to other people or circumstances    1   2   3   4   5   6   7    Totally due to me

3) In your financial future, will this cause again be present?

Will never again be present    1   2   3   4   5   6   7    Will always be present

4) Is the cause something that just affects obtaining money, or does it also influence other areas of your life?

Influences just this particular situation    1   2   3   4   5   6   7    Influences all situations in my life

**A friend comes to you with a problem and you don't try to help him/her.**

1) Write down the one major cause \_\_\_\_\_  
\_\_\_\_\_

2) Is the cause of your not helping your friend due to something about you or something about other people or circumstances?

Totally due to other people or circumstances    1   2   3   4   5   6   7    Totally due to me

3) In the future, when a friend comes to you with a problem, will this cause again be present?

Will never again be present    1   2   3   4   5   6   7    Will always be present

4) Is the cause something that just affects what happens when a friend comes to you with a problem, or does it also influence other areas of your life?

Influences just this particular situation    1   2   3   4   5   6   7    Influences all situations in my life

**You give an important talk in front of a group and the audience reacts negatively.**

1) Write down the one major cause \_\_\_\_\_  
\_\_\_\_\_

2) Is the cause of the audience's reaction due to something about you or something about other people or circumstances?

Totally due to other people or circumstances    1   2   3   4   5   6   7    Totally due to me

3) In the future, when you give a talk, will this cause again be present?

Will never again be present    1   2   3   4   5   6   7    Will always be present

4) Is the cause something that just influences giving talks, or does it also influence other areas of your life?

Influences just this particular situation    1   2   3   4   5   6   7    Influences all situations in my life

**You do a project that is highly praised.**

1) Write down the one major cause \_\_\_\_\_  
\_\_\_\_\_

2) Is the cause of your being praised due to something about you or something about other people or circumstances?

Totally due to other people or circumstances    1   2   3   4   5   6   7    Totally due to me

3) In the future, when you do a project, will this cause again be present?

Will never again be present    1   2   3   4   5   6   7    Will always be present

4) Is the cause something that just affects doing projects, or does it also influence other areas of your life?

Influences just this particular situation    1   2   3   4   5   6   7    Influences all situations in my life



**Your spouse (boyfriend/girlfriend) has been treating you more lovingly.**

1) Write down the one major cause \_\_\_\_\_  
\_\_\_\_\_

2) Is the cause of your spouse (boyfriend/girlfriend) treating you more lovingly due to something about you or something about other people or circumstances?

Totally due to other people or circumstances    1   2   3   4   5   6   7    Totally due to me

3) In future interactions with your spouse (boyfriend/girlfriend), will this cause again be present?

Will never again be present    1   2   3   4   5   6   7    Will always be present

4) Is the cause something that just affects how your spouse (boyfriend/girlfriend) treats you, or does it also influence other areas of your life?

Influences just this particular situation    1   2   3   4   5   6   7    Influences all situations in my life

**You apply for a position that you want very badly (e.g., important job, graduate school admission, etc) and you get it.**

1) Write down the one major cause \_\_\_\_\_  
\_\_\_\_\_

2) Is the cause of your getting the position due to something about you or something about other people or circumstances?

Totally due to other people or circumstances    1   2   3   4   5   6   7    Totally due to me

3) In future, when you apply for a position, will this cause again be present?

Will never again be present    1   2   3   4   5   6   7    Will always be present

4) Is the cause something that just influences applying for a position, or does it also influence other areas of your life?

Influences just this particular situation    1   2   3   4   5   6   7    Influences all situations in my life

**You go out on a date and it goes badly.**

1) Write down the one major cause \_\_\_\_\_  
\_\_\_\_\_

2) Is the cause of the date going badly due to something about you or something about other people or circumstances?

Totally due to other people or circumstances    1   2   3   4   5   6   7    Totally due to me

3) In future when you are dating, will this cause again be present?

Will never again be present    1   2   3   4   5   6   7    Will always be present

4) Is the cause something that just influences dating, or does it also influence other areas of your life?

Influences just this particular situation    1   2   3   4   5   6   7    Influences all situations in my life

**You get a raise.**

1) Write down the one major cause \_\_\_\_\_  
\_\_\_\_\_

2) Is the cause of your getting a raise due to something about you or something about other people or circumstances?

Totally due to other people or circumstances    1   2   3   4   5   6   7    Totally due to me

3) In the future on your job, will this cause again be present?

Will never again be present    1   2   3   4   5   6   7    Will always be present

4) Is the cause something that just affects getting a raise, or does it also influence other areas of your life?

Influences just this particular situation    1   2   3   4   5   6   7    Influences all situations in my life

