INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI

A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600

PREDICTING AFFECTIVE RESPONSES TO UNEXPECTED OUTCOMES

by

Richard Shannon Coughlan

**A Dissertation Submitted to the Faculty of the
COMMITTEE ON BUSINESS ADMINISTRATION**

**In Partial Fulfillment of the Requirements
For the Degree of**

**DOCTOR OF PHILOSOPHY
WITH A MAJOR IN MANAGEMENT**

In the Graduate College

THE UNIVERSITY OF ARIZONA

1 9 9 8

UMI Number: 9923163

**Copyright 1999 by
Coughlan, Richard Shannon**

All rights reserved.

**UMI Microform 9923163
Copyright 1999, by UMI Company. All rights reserved.**

**This microform edition is protected against unauthorized
copying under Title 17, United States Code.**

UMI
300 North Zeeb Road
Ann Arbor, MI 48103

THE UNIVERSITY OF ARIZONA ®
GRADUATE COLLEGE

As members of the Final Examination Committee, we certify that we have
read the dissertation prepared by Richard Shannon Coughlan
entitled Predicting Affective Responses to Unexpected Outcomes

and recommend that it be accepted as fulfilling the dissertation
requirement for the Degree of Doctor of Philosophy

Terry Connolly

1/6/99

Date

Lisa Ordonez

10/27/98

Date

Lee Beach

10/27/98

Date

Date

Date

Final approval and acceptance of this dissertation is contingent upon
the candidate's submission of the final copy of the dissertation to the
Graduate College.

I hereby certify that I have read this dissertation prepared under my
direction and recommend that it be accepted as fulfilling the dissertation
requirement.

Dissertation Director Terry Connolly

1/6/99

Date

STATEMENT BY AUTHOR

This dissertation has been submitted in partial fulfillment of requirements for an advanced degree at The University of Arizona and is deposited in the University Library to be made available to borrowers under rules of the Library.

Brief quotations from this dissertation are allowable without special permission, provided that accurate acknowledgment of source is made. Requests for permission for extended quotation from or reproduction of this manuscript in whole or in part may be granted by the head of the major department or the Dean of the Graduate College, when in his or her judgment the proposed use of the material is in the interests of scholarship. In all other instances, however, permissions must be obtained from the author.

SIGNED: _____

A handwritten signature in black ink, appearing to be 'D. G. L.', is written over a horizontal line.

ACKNOWLEDGEMENTS

I greatly appreciate the assistance provided by the members of my dissertation committee, especially Terry Connolly, Lee Beach and Lisa Ordonez.

TABLE OF CONTENTS

LIST OF FIGURES	6
LIST OF TABLES	7
ABSTRACT	8
CHAPTER 1: INTRODUCTION	9
CHAPTER 2: LITERATURE REVIEW	11
Expectations	11
Self-Predictions	14
Confidence	16
CHAPTER 3: OUTLINE OF CURRENT RESEARCH	19
CHAPTER 4: THE SCENARIO STUDY	22
The Manager Scenario	24
The Bowler Scenario	29
The Waiter Scenario	32
The Student Scenario	35
The Graduate Scenario	38
CHAPTER 5: A STUDY OF BOWLERS IN A REAL-LIFE SITUATION	43
CHAPTER 6: A STUDY OF HOTEL MANAGERS	52
CHAPTER 7: GENERAL DISCUSSION AND CONCLUSIONS	61
REFERENCES	72

LIST OF FIGURES

Figure 1, “Manager” Scenario: Satisfaction with Outcome X Width of Range ..	28
Figure 2, “Bowler” Scenario: Satisfaction with Outcome X Width of Range.....	31
Figure 3, “Waiter” Scenario: Satisfaction with Outcome X Width of Range	34
Figure 4, “Student” Scenario: Satisfaction with Outcome X Width of Range	37
Figure 5, “Graduate” Scenario: Satisfaction with Outcome X Width of Range..	40
Figure 6, Bowlers’ Predicted Satisfaction with Hypothetical Outcomes	47
Figure 7, Managers’ Predicted Satisfaction with Hypothetical Outcomes	57

LIST OF TABLES

Table 1, Manager Scenario: Satisfaction with Outcomes	26
Table 2, Bowler Scenario: Satisfaction with Outcomes	30
Table 3, Waiter Scenario: Satisfaction with Outcomes	33
Table 4, Student Scenario: Satisfaction with Outcomes	36
Table 5, Graduate Scenario: Satisfaction with Outcomes	39
Table 6, Location of Outcomes Relative to Expectations for All Bowlers	45
Table 7, Bowlers' Actual vs. Predicted Satisfaction.....	48
Table 8, Width of Range: Good and Bad Bowlers	51
Table 9, Managers' Actual vs. Predicted Satisfaction	58
Table 10, Accuracy in Predicting Outcomes by Managers' Level of Experience	59
Table 11, Effect of Time Elapsed Between Prediction and Outcome	60

ABSTRACT

The three studies reported here examined the role of expectations in determining an individual's satisfaction with a real or hypothetical outcome. More specifically, this work looked at the accuracy of individuals in predicting their affective responses to expected and unexpected outcomes in various settings. Finally, three variables thought to have an effect on affective response were manipulated in order to examine their role in judgments of satisfaction with outcomes.

In the first study, undergraduate subjects read scenarios containing the expectations of an individual about some event. Subjects made predictions about how these individuals might feel about outcomes better than, worse than or the same as what had been expected. The second study involved the expectations of bowlers about their scores in an upcoming game. Prior to beginning the game, bowlers predicted their scores and what their affective responses would be for outcomes better than, worse than, or equal to their expectations. After the game, their responses were recorded and compared to the predictions. The final study involved the expectations of hotel managers about important measures of business productivity. Some time before the relevant outcome would be learned, managers made predictions about the outcomes and their affective responses to other potential outcomes better than, worse than, or equal to their expectation.

These studies show that bowlers and managers do very well at predicting affective responses to outcomes, both expected and unexpected. This is especially true for one subset of our subjects, whose predicted affect curve closely resembles the actual responses.

CHAPTER 1: INTRODUCTION

Imagine how you will feel if you are not awarded the pay raise you expect to receive at the end of the year. If the air conditioning system in your new automobile fails to function properly on a very hot day, how might that make you feel? Finally, if your son or daughter who has always struggled in school brings home a perfect report card, how might that make you feel?

These examples are designed to illustrate the affective reactions that result when expectations are violated in some way. While unexpected outcomes naturally create surprise, they also produce a range of other emotional responses in individuals. The ability to accurately anticipate those feelings is critical to many decisions related to consumer, organizational and personal issues.

Expectations have been defined as an “anticipation of future consequences based on prior experience, current circumstances, or other sources of information” (Tryon, 1994). A host of expectations guides us through everyday life, based primarily on our previous experiences. When expectations are violated, we experience affect that can be either positive or negative, depending on the relationship between our expectation and the actual outcome. In conceptualizing violations of expectations, individuals sometimes exclaim, “I can’t imagine how I’d feel if that happened to me.” The studies that follow are designed to ask individuals to do just that – imagine how they would feel if their expectancies were violated. Beyond that, however, real-life situations in which

expectations are violated will be examined, in which subjects are asked to describe their feelings following some unexpected outcome. The answers that subjects provide shed light on several pertinent questions related to affective response to outcomes. The primary aim of this research is to determine the accuracy of individuals in predicting their hedonic responses to violations of expectations. In addressing this question, we will examine two secondary research questions: “What predicts hedonic response to an outcome which violates expectations?” and “What do individuals think predicts hedonic response to an outcome which violates expectations?” Finally, the studies that follow provide evidence about the accuracy of individuals in predicting numerical outcomes in recreational and occupational settings.

CHAPTER 2: LITERATURE REVIEW

Before addressing the proposed methods of inquiry, I will briefly review work from several relevant research streams including expectations, self-predictions, confidence and affective response to outcomes.

Expectations

The answer to our primary research question is an important one for organizations in their dealings with employees and customers. The extensive literature on **employee expectations**, which includes research on realistic job previews, commitment, and turnover, has shown that expectations about a job can have an effect on future satisfaction with that job. For example, a meta-analysis by Wanous et al. (1992) found a relatively high correlation between met expectations and two separate outcome variables: job satisfaction and organizational commitment. On the **consumer side**, expectations play an important role in the decision to buy and the satisfaction that customers experience with purchased products. For example, Stayman et al. (1992) found, in a study involving soft drinks and fruit juices, that satisfaction for a product was highest for subjects who received a drink that was only slightly different from what they expected, compared to a highly congruent or extremely incongruent drink. Other researchers have explored issues involving expectations about product prices. For example, Kalwani et al (1990) found that consumers react more strongly to situations in which the actual price is below expectations than they do when actual price is above expectations.

A vast amount of research exists on the role that expectations play in social and interpersonal settings (see Miller & Turnbull, 1986 for a thorough review). Researchers in social psychology, communication, and sociology have uncovered a great deal about the expectations that individuals have about the behavior of others and the ways in which those expectations affect interpersonal situations. For example, Wyer et al. (1994) found that subjects have better recall of behaviors that violate the normative expectations of politeness and modesty among communicators. Many others have explored different interpersonal settings, including schools, where the effect that teacher expectations can have on students' performance has been examined. Rosenthal & Jacobson (1968) found that students who were expected by their teachers to show an increase in intellectual competence over the course of a school year, showed greater gains in IQ tests compared to other students.

Less explored are the settings that involve impersonal expectancies (Ditto and Hilton, 1990), such as our beliefs about what the weather will be tomorrow or our expectations about the outcome of a football game next weekend. Though these scenarios involve other people, the standard of reference is impersonal. These situations pervade our everyday life, but have not been explored fully. Much of the work that has been done has involved expectations about one of two things: an organization or a product. For example, the concepts of met and unmet expectations have been used in research on employees' socialization into organizations. Porter and Steers (1973) introduced the concept of met expectations as "the discrepancy between what a person encounters on the job...and what he expected to encounter (p.152)." These expectations include such

things as pay and benefits as well as organizational roles and responsibility. According to these authors, unmet expectations lead to dissatisfaction, especially when there is disconfirmation of important expectations. Subsequent work has found a relationship between dissatisfaction and employee turnover (see the meta-analysis by Wanous, et al., 1992).

In advancing the work on consumers, Oliver (1981) proposed a model of consumer satisfaction that consisted of expectations about a product and actual product performance along with the comparison of these two, which may lead to what he termed *disconfirmation*. According to this model, an objective disconfirmation level is formed through the combination of expectations and performance. Oliver (1997) suggests that the relationship between these two depends on the product or service being investigated, and therefore their correlation cannot be specified. This objective disconfirmation provides the basis for a subjective interpretation of the difference between what was expected and what occurred. This interpretation is directly linked to satisfaction. This model has received some support in the consumer behavior literature over the last fifteen years. Examples include Churchill & Suprenant (1982), who found disconfirmation influences among nondurable products, such as a plant, and Bolton & Drew (1991), who found some evidence of these effects among telephone users. Nonetheless, a few of the model's more important aspects must be clarified.

First, *disconfirmation* can take on a positive or negative value. It is positive when performance exceeds expectations and negative when performance falls below

expectations. If performance is equal to expectations, confirmation occurs. According to Oliver (1997), disconfirmation has three components: the event, its likelihood of occurrence, and its desirability or undesirability. Negative disconfirmation takes place when high-probability desirable events do not occur and/or when low-probability undesirable events occur. Positive disconfirmation results from the occurrence of low-probability desirable events and/or the non-occurrence of high-probability undesirable events (Oliver, 1997). Finally, Oliver (1997) suggests that some consumers use all components of the model, while others base satisfaction judgments on only a few of its elements. In the year since Oliver's theory was published, there has been little empirical evidence either supporting or refuting these concepts.

Self-Predictions

For many years, researchers have examined the ability of individuals to make predictions about their future attitudes and behaviors. Most of the self-predictions that have been studied involve predictions of behavior or performance, not affect. Often, these efforts compared self-assessments to more objective methods of predictions, such as intelligence tests, grades or standardized exams. For example, Shrauger and Osberg (1981) reviewed self-assessments in several domains, including academic achievement, vocational choice and post-hospital adjustment. They found that self-predictions were more predictive than other assessment methods in 29 of 39 studies reviewed. Given this finding, they argue that self-assessments should be explored more extensively.

These authors also address the role that experience plays in self-prediction, arguing that increased experience raises the validity of self-predictions of behavior. Finally, they suggest that future research ought to examine reactions to life events, including satisfaction with job situations.

In a recent study involving predictions of affect, Kahneman & Snell (1992) found that subjects didn't do so well at predicting changes in their tastes for ice cream and music. These researchers had subjects consume the same flavor of ice cream each day for eight days and asked subjects on day one to predict how much they would want to eat the ice cream on the last day. In most cases, subjects overpredicted a decline in how much they'd want the ice cream. That is, they liked the ice cream on the last day more than they thought they would.

Klaaren, Hodges & Wilson (1994) asked undergraduates to predict how enjoyable winter vacation would be and then followed up shortly after the break ended to ask how enjoyable it was. They found that ratings of the vacation were predicted in part by the original affective expectation. A second study reported in the same article manipulated expectations and found that subjects with positive affective expectations enjoyed a movie more than subjects with neutral expectations. They offer a "reinterpretation" hypothesis which says that people whose expectations were disconfirmed reinterpreted the aspects of the experience that were inconsistent with expectations.

Confidence

The expectancy-disconfirmation model that was discussed earlier hints at the role that confidence in an expectation may play in satisfaction. According to this model, falling short of expectations will result in dissatisfaction, but the level of dissatisfaction is, in part, dependent on how likely the outcome was judged to be in the first place. The wide-ranging literature on expectations has shown the effect that beliefs about other people and future situations can have on an individual's behavior, emotions and performance. Nonetheless, this work has largely ignored the variability that exists in the confidence we have in our expectations.

For example, most of us have more confidence in the expectation that the sun will rise than we do in the expectation that our car will not break down. This level of confidence is affected by a number of factors including the nature and depth of experience on which the expectancy is based. As direct experience with an object increases, so should the confidence one has in his or her expectation for future outcomes involving that object. On the other hand, if the extent of one's experience with an object is indirect and shallow, the level of confidence is likely to be lower. Additionally, one's level of confidence in an expectation might be influenced by the opinions of others. We might be more certain in our beliefs if many others hold the same view. This may be especially true if an expert echoes our beliefs.

One measure of certainty in an expectation involves the range of all possible outcomes evident to the perceiver, and is termed *subjective confidence* by Olson, Roese and Zanna

(1996). This level of confidence is increased, they say, in situations where expectations are based on direct experience, rather than indirect experience (Fazio & Zanna, 1981). Also, they cite Feather (1966) in claiming that previous successes in a particular realm lead to more certain expectations of future success.

According to Olson, Roese and Zanna (1996), a higher level of confidence about the accuracy of perceived outcomes takes the form of a narrower range while those with very low confidence tend to set very wide parameters for possible outcomes. For example, an inexperienced driver might estimate that a trip across town would take between 30 minutes and an hour, whereas an individual who has made the trip every day recently might provide a range of 40 to 45 minutes. The latter would be more certain or confident in his expectation of how long the trip would take.

Continuing with our earlier example, let us now consider how confidence in an expectation relates to one's emotional response. If I was absolutely sure it would only take 40 minutes to get across town, I would likely be more surprised (and perhaps angry) if it took an hour than if I had little idea about the trip and guessed it would take about 40 minutes. The degree of surprise ought to be related to the confidence I had in the original expectation.

The existing literature suggests a number of hypotheses to be examined in the studies that follow:

Hypothesis 1. Satisfaction with an outcome is affected by the difference between that outcome and the expected outcome.

Hypothesis 2. An outcome that falls outside of one's perceived range of likely outcomes will result in magnified affect.

(2a) Surprisingly good outcomes will result in greater satisfaction than good outcomes that might have been expected.

(2b) Surprisingly poor outcomes will result in greater dissatisfaction than poor outcomes that might have been expected.

Hypothesis 3. An individual who makes a public statement about an expectation and learns of the outcome in the presence of others will experience greater affect than an individual who makes a private prediction and learns of the outcome in private.

Hypothesis 4. Individuals who have more experience in a given realm will be more confident in their expectations compared to relatively inexperienced individuals.

CHAPTER 3: OUTLINE OF CURRENT RESEARCH

In order to examine the accuracy of individuals in predicting their affective reactions to expectancy violations, we conducted three studies. The first study took place in a classroom on campus where undergraduates served as subjects responding to a series of fictitious scenarios. In each story, a person holds some expectation and then learns the outcome of an event that either confirms or disconfirms that expectation. Subjects were asked to imagine the feelings of the individual in the story.

In order to identify the variables that affect an individual's ability to predict his or her emotional reaction to an outcome, three characteristics of the situations were varied. First, we manipulated the amount of experience that the individual has had with situations like the one being investigated. We would expect that more experienced individuals would be more surprised by unexpected outcomes and therefore show more intense affective reactions. A second manipulation involved the certainty that the individual has in the expectation being studied, as reflected in the range of likely outcomes provided around the prediction. The more certain an individual was in his or her prediction, the narrower the range would be. Very certain individuals should be more surprised with unexpected outcomes as show a greater degree of affect. Finally, we manipulated the "publicness" with which the prediction is made and with which the outcome is learned. We would expect that the presence of an audience increases the intensity of affect, while its effect on accuracy is difficult to determine.

The other two studies took place “in the field” and involved individuals in natural settings. The first field study examined individuals participating in sports. Here, subjects were used to gather data about expectations and performance in a particular event, which in this case involved a game of bowling. I decided on bowling because scores are unambiguous and relatively easy to obtain. Additionally, participants have varying degrees of confidence in their performance expectations. A bowler who hasn’t played in a month is likely to be less sure about how he’ll play than will another bowler who plays twice a week.

The primary focus of this research was to examine the accuracy of the predictions that individuals make about their affective response to an expectancy violation. Therefore, each individual was asked to make a prediction about his score in an upcoming match. Each subject was also asked to predict how he or she would react to outcomes equal to, above, and below this expectation. Demographic information including the subject’s experience with bowling was also collected, so that we might analyze what contributes to accuracy in predicting both the outcome and the affective reaction to the outcome. We expected that more experienced bowlers would be more accurate in predicting their reactions. We hypothesized that they would provide narrower ranges and be more accurate in predicting scores.

The second field study involved managers from the hotel industry, which provides an ideal setting for a study of this sort in that, as in many service sector industries, performance on a number of items can be measured on a daily, weekly or monthly basis.

Additionally, expectations are often stipulated in forecasts for occupancy, costs, turnover and other important variables. Finally, actual performance measures are easily gathered so that they can be compared to expectations.

Here, subjects from four different hotels, representing various levels of success allowed me to explore a wide range of expectations, both in absolute magnitude and in the certainty that individuals have in those expectations. Again, we thought that more experienced individuals would be better predictors of affective response. We also thought they would provide narrower ranges and be more accurate in predicting outcomes.

In a manner identical to the bowling study, we asked managers for their expectations on a number of performance measures. For example, we asked reservations managers to predict occupancy for an upcoming weekend, and restaurant managers to predict the number of customers for an upcoming evening. Each manager was asked to predict how he or she would feel with outcomes equal to, above, and below the expectation. Shortly after the appropriate period had expired and outcomes became known, subjects were asked to evaluate their feelings about the outcome.

CHAPTER 4: THE SCENARIO STUDY

The first study asked subjects to respond to scenarios describing an individual's expectation about some numerical outcome such as a bowling score or a test grade. In each of the scenarios, described below, subjects were asked to evaluate the individual's satisfaction with potential outcomes ranging from much better than expected to much worse than expected.

Method

The design of the experiment was a 3 (Outcome: Above Expectation/ Equal to Expectation/ Below Expectation) X 2 (Range: wide or narrow) X 2 (Publicness: public or private) X 3 (Source of Expectation: expert other/ expert self/ inexpert self). The Outcome factor was within-subject and all other factors were between subject. The fully-crossed design resulted in twelve versions of each scenario. These versions were randomized and each subject responded to one version of each of six scenarios. The dependent variable was the judged satisfaction of the individual described in the scenario.

Task

Each subject responded to six scenarios in which an individual's expectation about some numerical outcome was presented, along with a high and low likely outcome.

For each scenario, subjects were asked to evaluate the individual's satisfaction with five specific outcomes reflecting the following categories:

- (1) below the expectation and outside of the range;
- (2) below the expectation and within the range;
- (3) equal to the expectation;
- (4) above the expectation and within the range;
- (5) above the expectation and outside of the range.

Subjects responded to the question, “How do you think [the individual] will feel?” using an 11 point scale that ranged from -5 (Very Dissatisfied) to +5 (Very Satisfied). This scale was identical for all scenarios.

We hypothesized an Outcome X Range interaction, such that subjects would give a higher satisfaction rating to an outcome if it was outside a “likely range” than they would give for that same outcome if it was inside a “likely range.” Second, we hypothesized an Outcome X Publicness interaction, with individuals experiencing magnified affect with surprising outcomes in public situations. Finally, we hypothesized an Outcome X Source interaction, with experienced individuals showing more affect than inexperienced individuals. The magnification of affect would be lowest in situations where some other individual provided the prediction.

Subjects

One hundred twelve undergraduates from the University of Arizona participated in the study in exchange for five dollars. Most were junior or senior business majors.

Procedure

The study was conducted in a classroom setting with each subject responding to six scenarios. Subjects were asked to provide personal opinions and provided as much time as necessary to complete the task. Most subjects completed the assignment in less than 20 minutes.

Results

Prior to the statistical analysis, an error in the text of one of the scenarios was discovered, leading me to eliminate responses to this scenario. The five other scenarios are described in detail below.

I will begin with a brief description of each scenario and discuss the results that each of the manipulations had on judged satisfaction with unexpected outcomes.

The Manager Scenario

The first scenario involved Denise, a reservations manager for a local hotel and her expectation about the number of rooms that the hotel would sell for an upcoming day. Twelve versions of the scenario were created by combining the Range (2), Source (3) and Publicness (2) variables. All versions except those involving the “Expert Other” are shown below, with variations in brackets.

Denise has been the reservations manager at a local hotel for

[Inexpert: one month; Expert: five years].

Her bonus is tied to the number of rooms sold each day.

As part of her daily routine, Denise estimates the number of rooms that will be sold on Saturday,

[Private: though she is never asked to submit a forecast; Public: which she distributes as a forecast at the weekly staff meeting].

This week, she expects that 320 rooms will be sold on Saturday. She thinks that occupancy is unlikely to be less than

[Wide: 260; Narrow: 300] rooms or more than

[Wide: 380; Narrow: 340] rooms.

[Public: At every meeting, the staff reviews results from the previous week; Private: *no additional information*].”

The “Expert Other” versions read as follows, with variations shown in brackets.

Denise has been the reservations manager at a local hotel for one month. Her bonus is tied to the number of rooms sold each day.

[Public: Before the weekly meeting where she will announce Saturday’s forecast; Private: In order to estimate how many rooms will be sold on Saturday],

Denise asks Betty, who has worked in reservations for ten years, what she thinks occupancy will be. She tells Denise that 320 rooms will be sold. According to Betty, occupancy is unlikely to be less than

[Wide: 260; Narrow: 300] rooms or more than [Wide: 380; Narrow: 340] rooms.

[Public: Denise uses this information as her forecast, knowing it will be reviewed at next week’s meeting; Private: *no additional information*].

All subjects were told that Denise expected to sell 320 rooms and were asked to respond to the following questions:

How do you think Denise will feel if occupancy turns out to be ...290 rooms?

...320 rooms?

...350 rooms?

For the “narrow” group, both 290 and 350 represented outcomes outside of the range that Denise provided. For the “wide” group, these two outcomes fell within the range. In all cases, subjects were told that Denise expected that 320 rooms would be sold.

The satisfaction ratings for subjects in each condition are shown in Table 1.

		Below Expectation		Equal to Expectation		Above Expectation	
		Wide	Narrow	Wide	Narrow	Wide	Narrow
Public	Oth/Exp	-1.23(13)	-3.57(14)	1.15(13)	0.93(14)	2.77(13)	4.43(14)
	Self/Inexp	-1.9(10)	-3.21(14)	1.8(10)	1.14(14)	3.6(10)	4.5(14)
	Self/Exp	-0.82(11)	-3.23(13)	1.64(11)	2.38(13)	3.27(11)	4.77(13)
Private	Oth/Exp	-0.08(13)	-3.25(12)	1.85(13)	0.83(12)	3.0(13)	3.83(12)
	Self/Inexp	-1.08(13)	-2.85(13)	1.23(13)	1.23(13)	2.69(13)	4.54(13)
	Self/Exp	-1.0(9)	-3.14(14)	0.89(9)	1.0(14)	3.11(9)	4.64(14)
Total		-0.99(69)	-3.21(80)	1.43(69)	1.25(80)	3.04(69)	4.46(80)

An analysis of variance including a within-subject effect Outcome (3) and three between-subject manipulations (Range (2) X Publicness (2) X Source (3)), was conducted on the satisfaction ratings. This analysis revealed a significant main effect for Outcome, with subjects judging Denise to be most satisfied with 350 rooms, less satisfied with 320 rooms and slightly dissatisfied with 290 rooms. A main effect for Range was also evident ($F(1,137) = 4.5, p < .05$), with subjects in the narrow range condition judging Denise a bit less satisfied than subjects in the wide condition. This ANOVA also revealed two significant interactions: Outcome X Range ($F(2,274) = 89.9, p < .001$), with subjects in the narrow condition judging Denise to be more satisfied with 350 rooms and

less satisfied with 290 rooms than subjects in the narrow condition as shown in Figure 1, and Outcome X Public ($F(2,274) = 4.9, p < .01$), with subjects in the public condition a bit more satisfied with outcomes above expectations and a bit more dissatisfied with outcomes below expectations.

Figure 1
"Manager" Scenario
Satisfaction with Outcome X Width of Range

The Bowler Scenario

The second scenario involved a bowler, Dave, and his expected score in an upcoming game. Again, twelve versions of the scenario were created. All versions except those involving the “Expert Other” case, are shown below, with variations in brackets.

Dave has been bowling for

[Inexpert: one month; Expert: five years].

[Private: On his way to the bowling alley today, he thinks about what he expects his score to be; Public: On the way to the bowling alley today, he and his friends talk about what they expect their scores to be].

Dave thinks that he’ll bowl a 190, and thinks his score is unlikely to be lower than [Wide: 136; Narrow: 172] or higher than [Wide: 244; Narrow: 208].

[Public: After the game, they gather to compare scores; Private: *no additional information*].

The “Expert Other” scenarios read as follows, with variations shown in parentheses.

Dave has been bowling for one month but has paid little attention to his scores so far. Tonight is the first official match so

[Public: the whole team gathers together to talk about how they’ll bowl. Dave asks Jim, who is a great bowler, how he thinks Dave will do; Private: Dave calls Jim, a great bowler who has bowled with him to ask how he thinks Dave will do].

Jim thinks that Dave will bowl a 190, and thinks his score is unlikely to be lower than

[Wide: 136; Narrow: 172] or higher than [Wide: 244; Narrow: 208].

[Public: After the game, the team gathers again to compare scores; Private: *no additional information*].

All subjects were told that Dave expected to bowl a 190 and were asked to respond to the following questions:

How do you think Dave will feel if his score is ...163?

...190?

...217?

For the “narrow” group, both 163 and 217 represented outcomes outside of the range provided by Dave. These outcomes fell within the range provided to the “wide” group. In all cases, 190 represented Dave’s prediction.

The satisfaction ratings for subjects in each condition are shown below in Table 2.

Table 2
Bowler Scenario
Satisfaction with Outcome

		Below Expectation		Equal to Expectation		Above Expectation	
		Wide	Narrow	Wide	Narrow	Wide	Narrow
Public	Oth/Exp	-0.6(10)	-3.14(14)	1.9(10)	1.0(14)	2.9(10)	4.79(14)
	Self/Inexp	-0.73(11)	-3.0(13)	1.45(11)	2.77(13)	3.36(11)	4.69(13)
	Self/Exp	-1.86(14)	-2.46(13)	1.43(14)	1.31(13)	3.21(14)	4.0(13)
Private	Oth/Exp	-0.69(13)	-3.31(13)	1.77(13)	1.46(13)	3.38(13)	4.85(13)
	Self/Inexp	-1.33(9)	-3.79(14)	0.89(9)	0.5(14)	3.22(9)	4.5(14)
	Self/Exp	-2.0(12)	-3.15(13)	0.67(12)	1.15(13)	3.83(12)	4.62(13)
Total		-1.23(69)	-3.15(80)	1.36(69)	1.35(80)	3.33(69)	4.58(80)

As in the manager scenario, an analysis of variance was conducted on the satisfaction ratings. The Outcome (3) X Range (2) X Publicness (2) X Source (3) ANOVA revealed a main effect for Outcome ($F(2,274) = 731.8, p < .001$), such that higher scores yielded more satisfaction. Once again, two significant two-way interactions surfaced: the Outcome X Range interaction ($F(2,274) = 50.3, p < .001$), shown graphically in Figure 2 and the Outcome X Public interaction ($F(2,274) = 3.6, p < .05$). Finally, a three-way interaction Outcome X Range X Source ($F(4,274) = 3.8, p < .01$) was also significant.

Figure 2
"Bowler" Scenario
Satisfaction with Outcome X Width of Range

The Waiter Scenario

The third scenario involved a waiter, John, and his expectation about tips. The scenarios, excluding those involving the “Expert Other” case, are shown below, with variations in brackets.

John has worked as a waiter at a local restaurant for

[Inexpert: one month; Expert: five years].

[Private: On his way into work today, he thought about how much he would make tonight;. Public: Just before the start of his shift today, he and the other servers make predictions about the amount of tips they’ll earn].

John [Public: says that he] expects to earn \$40 tonight.

He [Private: thinks; Public: says] that he’s unlikely to make less than

[Wide: \$22; Narrow: \$34] or more than [Wide: \$58; Narrow: \$46] tonight.

[Public: At the end of the night, the servers will reconvene to compare totals].

The “Expert Other” scenarios read as follows, with variations.

John has worked as a waiter at a local restaurant for one month. Just before the start of his shift today,

[Public: he and the other servers make predictions about the amount of tips they’ll earn. Because John is new, he asks another waiter with more experience for his opinion.; Private: John asked another waiter, Bill, to predict how much John will make in tips tonight].

Bill, who has worked in the restaurant for ten years, predicts that John will make \$40 tonight. According to Bill, John will likely earn between

[Wide: \$22; Narrow: \$34] and [Wide:\$58; Narrow: \$46].

At the end of the night, [Public:the servers will reconvene to compare totals; Private: when he returns home, John will count his tips].

All subjects were told that John expects to earn \$40 and were asked to respond to the following questions:

How do you think John will feel if he earns	...\$31?
	...\$40?
	...\$49?

For the “narrow” group, \$31 and \$49 fell outside of the likely range, though each was inside the range of the “wide” group.

The satisfaction ratings for subjects in each condition are shown in Table 3.

Table 3
Waiter Scenario
Satisfaction with Outcome

		Below Expectation		Equal to Expectation		Above Expectation	
		Wide	Narrow	Wide	Narrow	Wide	Narrow
Public	Oth/Exp	0.54(13)	-2.27(11)	2.77(13)	2.55(11)	3.46(13)	4.36(11)
	Self/Inexp	-1.31(13)	-4.07(14)	1.31(13)	1.64(14)	3.0(13)	4.29(14)
	Self/Exp	-1.6(10)	-3.71(14)	1.9(10)	1.21(14)	3.3(10)	4.57(14)
Private	Oth/Exp	-1.29(14)	-2.56(9)	0.64(14)	1.0(9)	2.86(14)	4.0(9)
	Self/Inexp	-0.31(13)	-3.83(12)	1.92(13)	1.17(12)	3.15(13)	4.58(12)
	Self/Exp	-1.0(13)	-3.38(13)	1.31(13)	1.46(13)	2.77(13)	4.23(13)
Total		-0.80(76)	-3.38(73)	1.62(76)	1.51(73)	3.08(76)	4.36 (73)

An analysis of variance, Outcome (3) X Range (2) X Publicness (2) X Source (3), was conducted on the satisfaction ratings, showing a main effect for Outcome ($F(2,274) = 927.9, p < .001$) as well as a main effect for Range ($F(1,137) = 7.4, p < .01$). Three separate two-way interactions were also significant: Outcome X Range ($F(2,274) = 96.4, p < .001$), which is illustrated in Figure 3, Outcome X Source ($F(4,274) = 3.6, p < .01$), and Source X Public ($F(2,137) = 6.4, p < .01$).

Figure 3
"Waiter" Scenario
Satisfaction with Outcome X Width of Range

The Student Scenario

The fourth scenario involved a student, Susie, and her expected grade on an exam she has just taken.

[Inexpert: Susie is a senior taking chemistry for the first time; Expert: Susie is a senior majoring in Chemistry].

She has just finished her midterm exam. On the way out of the exam,

[Private: she is thinking about how well she did on the test; Public: she and some friends are talking about how they think they did].

Susie [Private: thinks; Public: says] that she got a 144 out of 200. She thinks that her score is unlikely to be less than

[Wide: 120; Narrow: 136] points or more than [Wide: 168; Narrow: 152] points.

[Public: When the exams are returned, she and her friends will meet to compare scores; Private: *no additional information*].

The “Expert Other” scenarios read as follows, with variations.

Susie is a senior taking Chemistry for the first time. She has just finished the midterm exam and gone to talk with her professor to get an idea about how she did. Though he hasn’t looked at the exams, he knows her well enough to estimate her score. He tells her that she probably got a 144 out of 200 points. He says that her score is unlikely to be less than [Wide: 120; Narrow: 136] points or more than [Wide: 168; Narrow: 152] points].

[Public: She shares this information with her friends, who will want to compare scores when the exams are returned; Private: *no additional information*].

All subjects were told that Susie expects to score 144 points out of 200 and were asked to respond to the following questions:

How do you think Susie will feel if her score is ...132?

...144?

...156?

Both 132 and 156 fell outside of the range presented to the “narrow” group. These same outcomes fell within the range presented to the “wide” group.

The results for subjects in each condition are shown in Table 4.

Table 4
Student Scenario
Satisfaction with Outcome

		Below Expectation		Equal to Expectation		Above Expectation	
		Wide	Narrow	Wide	Narrow	Wide	Narrow
Public	Oth/Exp	-1.62(13)	-3.17(12)	1.62(13)	0.33(12)	2.31(13)	3.5(12)
	Self/Inexp	-1.62(13)	-3.31(13)	1.31(13)	1.08(13)	2.69(13)	4.15(13)
	Self/Exp	-1.89(9)	-2.93(14)	1.33(9)	0.64(14)	2.67(9)	4.14(14)
Private	Oth/Exp	-0.69(13)	-3.36(11)	1.54(13)	0.55(11)	2.38(13)	3.0(11)
	Self/Inexp	-1.08(13)	-3.43(14)	1.15(13)	1.07(14)	2.85(13)	3.57(14)
	Self/Exp	-1.2(10)	-3.71(14)	1.6(10)	0.86(14)	2.9(10)	4.07(14)
Total		-1.32(71)	-3.32(78)	1.24(71)	0.77(78)	2.62(71)	3.77(78)

This analysis revealed the familiar main effect for Outcome ($F(2,274) = 709.6, p < .001$) and a main effect for Range ($F(1,137) = 6.2, p < .05$). The Outcome X Range interaction was also significant ($F(2,274) = 54.4, p < .001$) and is shown in Figure 4.

Figure 4
"Student" Scenario
Satisfaction with Outcome X Width of Range

The Graduate Scenario

The final scenario involved a college senior and his salary expectations.

Bill is scheduled to graduate in May with a degree in Communications. He has spent [Expert: a great deal of time; Inexpert: very little time] researching job options.

[Public: He and some friends are discussing what their salaries will be next year; Private: He is trying to predict what his salary will be next year].

Bill [Public: says; Private: thinks] that he will probably earn \$28,000 and [Public: says; Private: thinks] that he is unlikely to earn less than

[Wide: \$22,000; Narrow: \$26,000] or more than Wide: \$34,000; Narrow: \$30,000].

[Public: At the end of the year, he and his friends will discuss the salary offers they have accepted; Private: *no additional information*].

Bill is scheduled to graduate in May with a degree in Communications. Yesterday, Bill went to see a placement advisor in order to get an idea about what his salary will be next year. The advisor told him that he will probably earn \$28,000 and thinks that he is unlikely to earn less than

[Wide: \$22,000; Narrow: \$26,000] or more than [Wide: \$34,000; Narrow: \$30,000].

[Public: Bill shared this information with his friends, who will be comparing salaries with each other after graduation; Private: *no additional information*].

All subjects were told that Bill expected to make \$28,000 next year and were asked to respond to the following questions:

How do you think Bill will feel if he earns ...\$25,000?

...\$28,000?

...\$31,000?

Both \$25,000 and \$31,000 fell outside the range presented to the “narrow” group, though these same outcomes were within the range presented to the “wide” group.

The satisfaction ratings for subjects in each condition are shown in Table 9.

Table 5
Graduate Scenario
Satisfaction with Outcome

		Below Expectation		Equal to Expectation		Above Expectation	
		Wide	Narrow	Wide	Narrow	Wide	Narrow
Public	Oth/Exp	-0.69(13)	-3.54(13)	1.38(13)	1.23(13)	3.23(13)	4.23(13)
	Self/Inexp	-0.89(9)	-3.0(14)	0.89(9)	1.14(14)	3.11(9)	3.71(14)
	Self/Exp	-1.0(12)	-2.77(13)	0.67(12)	1.46(13)	2.75(12)	4.15(13)
Private	Oth/Exp	-0.77(13)	-2.93(14)	1.08(13)	1.29(14)	2.85(13)	4.14(14)
	Self/Inexp	-1.4(10)	-2.5(14)	1.8(10)	1.5(14)	3.4(10)	4.57(14)
	Self/Exp	-0.55(11)	-2.69(13)	1.82(11)	2.15(13)	3.27(11)	4.54(13)
Total		-0.87(68)	-2.9(81)	1.26(68)	1.46(81)	3.09(68)	4.22(81)

The ANOVA revealed a main effect for Outcome ($F(2,274) = 789, p < .001$) and a significant Outcome X Range interaction ($F(2,274) = 66, p < .001$), which is shown in Figure 5 on the following page.

Figure 5
"Graduate" Scenario
Satisfaction with Outcome X Width of Range

Analysis

In each of the five hypothetical scenarios presented to subjects, unexpected outcomes are judged differently depending on whether they lie inside or outside of a given range. In all cases, outcomes that are better than expected are judged more satisfying if they lie above the upper limit of an expected range than if they lie within the range. Likewise, outcomes that are worse than expected are judged less satisfying if they lie below the lower limit of the expected range as opposed to within the range.

Interestingly, the additional satisfaction that a surprisingly good outcome brings is not as large as the increase in dissatisfaction associated with a surprisingly bad outcome. This asymmetric effect has previously been found in research on prospect theory (Kahneman & Tversky, 1979), in which the psychological impact of any given loss is greater than the psychological impact of a gain in the same amount. In our scenarios, outcomes below expectations generate greater affective response in a negative direction than outcomes above expectations generate on the positive side.

Taken together, the results of this first study suggest that surprise magnifies the effects that an expectation has on an individual's satisfaction with a given outcome. A good outcome is satisfying, but a surprisingly good outcome is even more satisfying.

The results of these five scenarios show little support for the idea that either publicness or source has an effect on satisfaction with unexpected outcomes. The predicted Outcome

X Public interaction was significant in only two of five scenarios. The predicted Outcome X Source interaction was significant in only one scenario.

As a follow-up to this initial lab study, we conducted two field studies designed to examine the ability of individuals to predict their own reactions to unexpected outcomes in situations similar to those presented in the hypothetical scenarios described above.

These field studies also allowed us to explore the effect that the width of range of likely outcomes around an expectation has on subsequent reactions to an actual outcome.

Finally, we collected information about individuals' experience in a particular realm in an attempt to view its effect on accuracy in predictions.

CHAPTER 5: A STUDY OF BOWLERS IN A REAL-LIFE SITUATION

The second study examined expectation effects on the satisfaction of bowlers with their bowling scores. This field study was designed to follow up on Study 1 by exploring similar issues in a natural setting. Bowlers were asked to share their expectations about scores in an upcoming game and to predict their satisfaction with outcomes at, above and below expectations. At the conclusion of the game, each subject was asked how satisfied he or she was with the actual outcome.

This study allowed us to examine the potential role that several different factors play in determining satisfaction with an outcome. I collected several measures with possible ties to satisfaction, including years of bowling experience and average score, while asking each individual to make a prediction about an upcoming game. I also measured subjects' level of confidence in the prediction by soliciting a range framed by highest and lowest likely scores.

Expectation effects would suggest that satisfaction with an outcome is driven not only by actual outcome, but also by differences between that outcome and one's expected outcome. Confidence in the expectation might also affect satisfaction, as described earlier.

Method

This field study was designed to explore satisfaction with actual outcomes in a setting where expectations could be gathered before the outcome was known. All data were collected in a bowling alley.

Task

Bowlers who agreed to take part in the study were asked for an expected score in an upcoming game. Following this, they were asked to provide a “likely” range around their expected score by responding to questions about the highest and lowest scores they would likely achieve in the upcoming game. In addition, they were asked to predict their level of satisfaction with five different potential outcomes ranging from much worse than expected to much better than expected, based on the range they had provided. A detailed description of the process by which these potential outcomes was determined is provided below. After the game had been completed, bowlers provided their actual score and their level of satisfaction with that score. Demographic measures including years bowled and average score were also recorded.

Subjects

Eighty-five bowlers took part in the study in exchange for a coupon entitling them to a free game. Forty-two of these bowlers were asked for two predictions, resulting in 127 total predictions. The data were collected on four different evenings at a bowling alley in Tucson, Arizona. Bowlers had been bowling for an average of 8 years and bowled on average 6 times per month. The mean self-reported bowling average was 150.

Results

Before a discussion of the bowlers' success in predicting their own satisfaction with unexpected outcomes, let us examine their accuracy in predicting the actual outcomes. Table 6 shows the number of actual outcomes that fell at, above, or below expectations for all bowlers.

Table 6
Location of Outcomes Relative to Expectation for All Bowlers

Outcome fell below expectation and outside of range	14
Outcome fell below expectation and inside of range	64
Outcome fell at or above expectation and inside of range	47
Outcome fell above expectation and outside of range	<u>2</u>
	127

As this table shows, 111 of 127 bowlers (87%) had an outcome inside of their likely range. Of the 16 bowlers whose outcome fell outside the range they had provided, 14 failed to achieve their lowest likely score while only 2 surpassed their highest likely score. In all, 78 bowlers (61%) failed to reach their predicted score, while 49 bowlers (39%) met or exceeded their predictions.

It should be noted that this group of bowlers tended to predict scores about 5 pins higher than their self-reported averages, with 80% predicting a score at least one pin above average and 21% predicting a score more than 15 pins higher than average. Actual scores

were, on average, 10 pins below the prediction, with 42% of our subjects having actual scores 10 or more pins below their predictions.

In order to examine the success of individual bowlers in predicting their affective responses to outcomes, we divided them according to their predictions of affect for the hypothetical outcomes we created around their predicted score. More specifically, we examined the shape of the curve describing their predicted affect for the five hypothetical outcomes, creating three separate groups reflected in Figure 6 below.

Figure 6
Bowlers' Predicted Satisfaction with Hypothetical Outcomes (N=85)

Group 1 consists of those bowlers who predicted that the slope of the curve would be steeper as it moved toward the region containing outcomes that fell below expectations. Group 2 consists of those bowlers who predicted that the slope of the affect curve would remain relatively constant as one moved from outcomes above expectations to outcomes below expectations. Group 3 consists of those bowlers who predicted a relatively flat curve for outcomes above expectations, followed by a significant decrease in satisfaction as one moved into the region containing outcomes below expectations.

These three groups showed some difference in their ability to predict affect, as reflected in the table below, which shows the number of subjects in each group whose actual satisfaction was above, below or equal to their predicted satisfaction. This table reflects the location of actual outcome and actual satisfaction on an individual graph of the predicted affect curve. To provide more detail, the bowlers have been divided into two groups, according to the relationship between actual and predicted outcomes. Because some bowlers provided two predictions, a total of 126 predictions are included in the analysis.

Table 7						
Bowlers' Actual vs. Predicted Satisfaction						
Group	Outcome Above Expectation			Outcome Below Expectation		
	Sat < Pred	Sat = Pred	Sat > Pred	Sat < Pred	Sat = Pred	Sat > Pred
1	6	3	3	13	2	13
2	6	4	14	20	1	11
3	1	3	6	7	1	12

Note: The actual score for one subject matched his predicted score. This subject has been omitted from the analysis in the table above.

One of the most significant findings evident in the table above is that subjects in Group 2, who had predicted an affect curve with a fairly constant slope, were more satisfied than they had predicted with outcomes above expectations and less satisfied than they had predicted with outcomes below expectations. This group consisted of 38 bowlers, or 45% of our subjects.

Subjects in Group 3 were, for the most part, more satisfied than they had predicted they would be with outcomes both above and below expectations. This group consisted of 20 bowlers, representing 24% of our subjects. Finally, subjects in Group 1 showed a fairly even split between those who were more satisfied than anticipated and those who were less satisfied than anticipated. Taken together, the data seem to suggest that the curve predicted by subjects in Group 1 is most indicative of actual affect. 27 of 85 bowlers, or 32%, predicted such a curve.

Using raw data without interpolation, we find that 67 of the 127 bowlers (53%) were within a point of their predicted satisfaction (for the relevant comparison outcome), and an additional 23 bowlers (18%) were within 2 points. To make these comparisons, we examined the location of the actual score relative to the prediction and determined whether the outcome fell above or below the expectation. Next, we determined whether the outcome was within or outside of the likely range provided by the bowler. Finally, we compared the predicted satisfaction for that category of outcomes to the actual satisfaction the bowler experienced. This does not take into account any differences between the actual score and the score on which the predicted satisfaction was based, as

in the analysis above. Nonetheless, it suggests that many of our bowlers experienced satisfaction that was very close to what they had predicted for a similar, hypothetical outcome.

The importance of the expectation as a reference point for determining satisfaction is also illustrated in our finding that actual satisfaction is more closely correlated to the difference between actual and predicted score ($r = .71$) than it is to actual score alone ($r = .44$). These bowlers clearly use their expectations as reference points in judging how well they bowled.

As a follow up to the findings of the first study, I examined the width of the ranges that bowlers provided around their predictions and the effect that this range had on satisfaction with outcomes. In an attempt to standardize measurement of the range width, I divided the difference between the upper and lower limits of the range by the initial prediction, creating a new variable, "rangewidth." For example, a bowler predicting his score to be 150 who gave 120 as his lower limit and 180 as his upper limit would have a rangewidth of .40. The mean rangewidth for the 127 predictions was .61, but differed significantly between "good" and "bad" bowlers, according to a median split of self-reported averages, as shown in Table 8 below.

Table 8
Width of Range: Good and Bad Bowlers

	Mean Bowling Avg.	Avg. Yrs. of Experience	Mean Prediction	Mean Act. Score	Mean Rangewidth
Bad Bowlers (N=64)	128	5	135	129	.65
Good Bowlers (N=63)	176	10	184	171	.57

*All numbers, except rangewidth, have been rounded to the nearest whole number.

The data in the table above support the idea that better bowlers provided relatively narrower ranges ($F(1,126) = 4.73, p < .05$). It should be noted that in absolute terms, the ranges of good bowlers were, on average, a bit larger than the ranges for bad bowlers. Among all 127 bowlers, the correlation between bowling average and rangewidth was found to be significant ($r = -.28, p < .01$), with better bowlers providing narrower ranges.

We next decided to explore the issues raised in the first two studies in a different realm, the world of business. We were interested in seeing whether these results might be duplicated in an environment where individuals were sometimes compensated on their ability to accurately predict outcomes. Also, we wondered if the perception that many managers shared of having limited control over outcomes might make a difference in how they reacted to unexpected outcomes.

CHAPTER 6: A STUDY OF HOTEL MANAGERS

The final study asked hotel managers for predictions on a variety of numerical outcomes including occupancy and revenue measures. As in Study 2, subjects were asked to predict their own satisfaction with possible outcomes at, above and below their predicted outcome. In addition, subjects responded to questions about their control of and accountability for each outcome. In order to examine the effects of time, some subjects made their predictions as little as one day in advance of the outcome while others made predictions as many as six weeks before the outcome would be known. The primary focus of this third study was to examine the accuracy of hotel managers in predicting their satisfaction with unexpected outcomes.

Procedure

Initially, the general manager at each of four hotels in Tucson was contacted and asked about the possibility of interviewing other managers in the hotel about their expectations on some numerical outcomes. Once permission had been granted, managers were contacted by phone individually to set an appointment for a face-to-face interview. Each interview began with background questions designed to identify numerical outcomes that were important to the manager. When one or more of these measures had been identified, the manager was asked the following questions:

- (1) What do you expect the outcome to be?
- (2) What would be the highest likely outcome?
- (3) What would be the lowest likely outcome?

These three questions created a prediction and range, which were used in the five questions that followed. Each question began with the following phrase:

“How will you feel if the outcome turns out to be...”

Five outcomes were inserted at the end of the phrase, based on the prediction and range provided by the manager.

- (1) The first question asked about an outcome below the lowest likely outcome. The hypothetical outcome was determined by subtracting one-half of the difference between the lowest likely outcome and the prediction from the lowest likely outcome.
- (2) The second question asked about an outcome between the lowest likely outcome and the prediction. This hypothetical outcome was the halfway point between these two numbers.
- (3) The third question asked about an outcome equal to the manager's prediction.
- (4) The fourth question asked about an outcome between the prediction and the highest likely outcome. This hypothetical outcome was the halfway point between these two numbers.
- (5) The final question asked about an outcome above the highest likely outcome. This hypothetical outcome was computed by adding one-half of the difference between the prediction and the highest likely outcome to the highest likely outcome.

Each manager was also asked to provide the typical outcome for the measure being discussed. After responding to these questions, managers were asked about their control of and accountability for the outcome. Finally, each manager was asked how long he or she had worked in the hotel industry and for his or her current employer.

Within a week after the outcome was known, the manager was interviewed a second time. In this interview, the manager reported the actual outcome and responded to a question about his or her reaction to that outcome. Finally, managers were asked to recall the predictions they had made.

This entire process was repeated in cases where managers made multiple predictions. Most initial interviews lasted about 30 minutes. Follow-up interviews were about 5 minutes length on average.

Task

Subjects responded to questions about hypothetical outcomes using a scale that ranged from -5 (Very Dissatisfied) to +5 (Very Satisfied). This same scale was used to record reactions to actual outcomes.

Questions regarding control and accountability were answered using a scale that ranged from 0 (Not at all in my control or Not accountable at all) to 7 (Completely in my control or Completely accountable).

Subjects

Eighteen managers from four different hotels in Tucson participated in the study. These managers came from a variety of functional areas, including sales, catering, housekeeping and food and beverage outlets. The managers had an average of 12 years experience in the hotel industry and had been with their current employer for an average of 4.7 years. Most managers provided two or three predictions about measures such as hotel occupancy, monthly departmental revenue, employee turnover or customers served. Predictions were made one to 45 days before the outcome was learned.

Results

In order to address the primary research question of the study, I examined the difference between actual and predicted satisfaction with outcomes. First, we will examine the raw data concerning actual and predicted satisfaction. To do this, we will compare the managers' predicted satisfaction for the relevant comparison outcome with the actual satisfaction rating they provided.

In 11 of 44 cases (25%), the manager reacted exactly as he or she had predicted. 12 other times (27%) the manager was within a point of his or her predicted satisfaction. Finally, 12 additional cases (27%) were 2 points from the prediction. In total, 35 of 44 managers (80%) were within 2 points of their predicted satisfaction.

Of the 33 managers who failed to accurately predict their actual satisfaction level, 19 were less satisfied than they had thought they would be (58%). Interestingly, 12 of these 19 had outcomes that were **above** expectations, while only 6 were less satisfied than they

thought they would be with outcomes **below** expectations. One manager whose outcome matched her prediction was a point less satisfied than she thought she would be.

14 of 33 managers (42%) who failed to predict their satisfaction level were more satisfied than they had predicted they would be. Eight of these managers experienced outcomes below expectations while the other six had a better than expected outcome.

Next, we divided the managers according to their predictions of affective response for the hypothetical outcomes, as in the bowling study. Here, we will categorize managers exactly as we divided bowlers (see Figure 7): Group 1 consists of those managers who predicted that the slope of the curve would be steeper as it moved toward the region containing outcomes that fell below expectations. Group 2 consists of those managers who predicted that the slope of the affect curve would remain relatively constant as one moved from outcomes above expectations to outcomes below expectations. Group 3 consists of those managers who predicted a relatively flat curve for outcomes above expectations, followed by a significant decrease in satisfaction as one moved into the region containing outcomes below expectations.

Figure 7
Managers' Predicted Satisfaction with Hypothetical Outcomes (N=44)

The relationship between actual and predicted satisfaction for each of the three groups is presented below, in Table 9.

Table 9
Managers' Actual vs. Predicted Satisfaction

Group	Outcome Above Expectation			Outcome Below Expectation		
	Sat < Pred	Sat = Pred	Sat > Pred	Sat < Pred	Sat = Pred	Sat > Pred
1	6	2	2	3	0	7
2	4	3	3	2	1	4
3	1	1	1	0	2	1

ñ The one manager whose outcome matched her prediction has been omitted from this analysis. As a result, the N for Group 1 above is 20.

Perhaps the most interesting result here is the finding that managers in Group 1, whose affect curve is relatively concave and steepest in the realm of outcomes below expectations, were more satisfied than they anticipated with those poor outcomes and less satisfied than they anticipated with outcomes that exceeded expectations. In Groups 2 and 3, actual satisfaction was no more likely to be above the expected level than it was to be below the expected level, regardless of whether the actual outcome was better or worse than anticipated.

Based on our findings of the bowling study, where more experienced bowlers were shown to be more confident in their prediction, our pool of hotel managers was divided into groups based on the number of years they had worked for their current employer.

First, we explored the effect of experience on the width of the likely outcome range and on managers' abilities to predict actual outcomes. Like better bowlers, more experienced managers gave narrower ranges than their less experienced colleagues, .40 vs. .72 ($F(1,43) = 2.87, p < .10$). However, these more experienced managers were not better predictors of outcomes, as shown in Table 10, where 62% of inexperienced managers and 65% of experienced managers had outcomes within their likely ranges:

Table 10
Accuracy in Predicting Outcomes by Managers' Level of Experience

<u>Experience Level</u>	Outcome (relative to expectation and range)			
	Below Expectation		At or Above Expectation	
	Outside Range	Inside Range	Outside Range	Inside Range
3 years or less at hotel (N=21)	3	6	7	5
More than 3 years at hotel (N=23)	4	7	8	4

This nature of this study allowed us to examine an additional variable – the time between the prediction and the actual outcome – and its effect on range width and accuracy.

Predictions were recorded as little as one day and as many as 45 days in advance of the actual outcome being learned. No predictions were made in the period between 16 and 41 days in advance, creating two groups with very different time horizons, as shown in Table 18 below. The first group of 17 predictions was made within 15 days of the outcome while the remaining 27 predictions were made six weeks or more in advance of the outcome.

Table 11
Effect of time elapsed between prediction and outcome

<u>Time between prediction and outcome</u>		<u>Width of Range</u>	<u>Below Expectation</u>		<u>At or Above Expectation</u>	
			Inside	Outside	Inside	Outside
15 days or less	(N=17)	.39	2	5	8	2
42 or more days	(N=27)	.66	5	8	7	7

Width of Range: $F(1,43)=1.95, p=.17$

The group that provided short-term predictions gave narrower ranges, yet was more accurate, with 13 of 17 (76.5%) outcomes falling within the given range. The group that provided “long-term” predictions had only 15 of 27 (55.6%) of outcomes fall within the given range.

CHAPTER 7: GENERAL DISCUSSION AND CONCLUSIONS

The primary aim of this research was to examine the accuracy of individuals in predicting their emotional reactions to unexpected outcomes. The evidence suggests that our subjects are fairly adept at this task. In separate studies, 71% of bowlers and 80% of managers using an 11-point scale to indicate satisfaction with an actual outcome had actual responses within 2 points of their predicted responses. More specifically, 25% of the managers and 27% of bowlers reacted exactly as they had predicted they would. These findings are based on 127 predictions from bowlers of all levels of experience, from less than one month to more than forty years. The hotel managers who provided the 44 predictions discussed in our final study had been in the hotel industry for between 6 and 27 years. These bowlers and managers were examined in real-life settings, where they shared their expectations about actual outcomes and provided reactions shortly after the outcome was known. The results of these studies are important for researchers and managers in a variety of fields, including organizational behavior, marketing and psychology, as I will discuss below.

The first study reported here allowed us to examine the effects of three variables on judgments of satisfaction with outcomes in hypothetical situations. The central finding was that a surprising outcome, defined as an outcome that falls outside of one's range of "likely outcomes," results in greater affect than does the same outcome when it is within the likely range. For example, an individual's satisfaction with a salary offer of \$30,000 would be higher if he expects \$24,000 to \$28,000 than it would be if he expects \$20,000

to \$32,000. The same is true for outcomes below expectations, where an outcome outside of one's range results in a greater degree of dissatisfaction. In each of the five hypothetical situations we created for Study 1, subjects judged individuals to be more satisfied with a better-than-expected outcome if it fell outside of the range we had provided than if it was inside the range. Additionally, in all five scenarios, subjects judged individuals to be more dissatisfied with a worse-than-expected outcome if it fell outside of the range we provided than if it fell within that range. These scenarios included predictions about widely varied items including test scores, salary offers, bowling scores, gratuities and hotel occupancy. Nonetheless, the finding of magnified affect for surprising outcomes surfaced in each set of examples. While the finding seems somewhat intuitive, it provides important evidence about the role that expectations play in serving as a standard for comparison in judging outcomes.

Previous research has shown the importance of expectations as referents in determining satisfaction with a job (Porter & Steers, 1973) and with various products (Bolton & Drew, 1991; Anderson & Sullivan, 1993). The results of our first study broaden these findings to include the realm of numerical outcomes such as test scores or bowling scores. According to our subjects, the expectation that an individual carries into an exam or a bowling match about the outcome of that event shapes his or her satisfaction with the actual outcome. While it may be obvious that better outcomes lead to greater satisfaction, we also found that more surprising outcomes, both better and worse than expected, generate greater affect. This effect is more pronounced for outcomes below expectations than it is for outcomes above expectations.

For managers involved in extending salary offers or preparing budgets, these findings have great relevance. Our results suggest that an initial expectation shapes an individual's reaction to the offer or budget, raising the importance of identifying the perceived range of likely outcomes before presenting the relevant numbers. Failing to do so increases the likelihood of magnified affect in response to the offer or budget. Of course in some cases greater positive affect is the desired result. Actual expenses that fall well below the boss's expectation will almost always lead to happiness. In order to accomplish this, you must first uncover or manipulate the expectation.

A second variable in our initial study involved the public versus private nature of the prediction and outcome. We hypothesized that predictions made aloud in the presence of others would result in magnified affect for individuals in our hypothetical examples. We expected that announcing an expectation in advance and learning of the actual outcome in the presence of others would make an individual more satisfied with an unexpectedly good outcome and more dissatisfied with an unexpectedly bad outcome. Individuals are more committed to predictions documented by others, we thought, so that surprising outcomes would lead them to be more emotional. Surprisingly, there was no evidence of this effect in any of the five scenarios we presented to subjects in our first study. Subjects judged public predictions similar to private ones in the affect each produced for unexpected outcomes.

Finally, we hypothesized in Study 1 that the degree of experience that one had in the realm in which he or she was making a prediction would have an effect on emotional reactions to unexpected outcomes. We thought that more experienced individuals would be less likely than inexperienced individuals to be surprised by a given outcome. This follows from earlier work in which researchers found that the validity of self-predictions is increased in situations where individuals have had more experience (Dollard, 1949; Melei & Hilgard, 1964). This lower likelihood of surprise among more experienced individuals should translate into more moderate affective reactions. We would expect that novices would react more strongly to unexpected outcomes. Surprisingly, our five scenarios in Study 1 showed no evidence for this effect. Our subjects judged an “experienced” individual’s reaction to a surprising outcome similar to the reaction of an “inexperienced” individual in each case.

The second study took one of the hypothetical scenarios from Study 1 into the real world, where we asked bowlers to predict their scores and their affective reactions to a range of possible scores equal to, better, or worse than their predictions. In this field study, we allowed individuals to provide their own ranges of likely outcomes around their expected scores. Therefore, an outcome outside of this range could be viewed as a true surprise, allowing us to examine emotional reactions to such outcomes. Finally, as a follow-up to Study 1, we also collected data about the skill level and degree of experience of these subjects. As a result, we were able to examine the effect of one’s experience on his or her ability to predict reactions to surprising outcomes.

Overall, bowlers did very well at predicting their reactions to surprising outcomes. More than half of our subjects' actual satisfaction ratings fell within one point of their predicted satisfaction ratings and nearly three-fourths of the bowlers were within two points.

Detailed analysis through interpolation indicated that good bowlers (according to self-reported bowling average) were more satisfied with better-than-expected outcomes and more dissatisfied with worse-than-expected outcomes than they had predicted they would be.

One possible explanation is that good bowlers asked to predict their likely reaction to an outcome slightly below their expectation think back to previous games in which they achieved similar scores. In making this recollection, they call to mind the worst scores they have achieved and decide that this outcome is not so dissatisfying. However, when they are asked for a reaction immediately after the game in which they have fallen a bit short of the prediction, the more relevant referent is the expectation, not the worst games of all time. As a result, their affect is magnified by the disappointment of failing to achieve the expected score. The same process could be true for positive outcomes, with bowlers recalling their highest scores when asked for a prediction, then focusing on the expectation as a referent immediately after the game. Here, the joy of having surpassed the expected score creates a greater degree of satisfaction.

The satisfaction ratings of bad bowlers, on the other hand, are very close to what that group had predicted they would be for outcomes slightly better and slightly worse than expected. Though they lacked the bowling talent of their colleagues, they showed an

ability to anticipate their reactions to unexpected outcomes. In general, this group was neither satisfied nor dissatisfied with an outcome slightly below expectations, as they had predicted they would be. Likewise, their reactions to an outcome slightly better than expected were very close to what they'd predicted. Following the earlier explanation for the finding that good bowlers predicted less affect than they experienced, we would conclude that bad bowlers have fewer memories from which to base their original predictions of affect. As a result, they use their expectation as the primary referent both before the game and after in deciding how satisfied they are with an unexpected outcome.

The results of Study 1, in which the width of one's range around an expected outcome was shown to have an effect on satisfaction, suggested that we examine the width of bowlers' ranges around the predictions they provided in Study 2. A number of interesting findings surfaced surrounding this issue. First, good bowlers provided ranges that were relatively narrower than the ranges provided by bad bowlers. One explanation for this effect is that good bowlers are more confident in their predictions. Perhaps their level of experience leads to more certainty in how the game will turn out, which is reflected in a smaller range of likely outcomes. Bad bowlers who are relative novices may be less certain about how the game will turn out and therefore provide a wider range of likely outcomes. As their level of experience increases, so does their certainty about their ability. Interestingly, the groups showed little difference in ability to predict actual outcomes, with 91% of bad bowlers and 84% of good bowlers having outcomes that fell within the likely ranges they'd provided. This suggests that the good bowlers' certainty

and the bad bowlers' uncertainty may be warranted. Each group seems to have an accurate idea about its talent level.

The same could be said for the hotel managers who took part in Study 3. The 21 managers who had worked in their current hotel for three years or less gave much wider ranges than the 23 managers with more than three years experience at their current hotel. Nonetheless, 62% of the former group and 65% of the latter had actual outcomes that fell within the range of likely outcomes they had provided. Again, the certainty of the more experienced individuals seems justified.

One interesting difference between the managers and the bowlers can be seen in the degree of control over the outcomes on which the predictions were based. While we did not ask bowlers directly about perceived control over their scores, the nature of the sport suggests participants have a high level of control over outcomes. On the other hand, many managers told us that some portion of the outcome they were predicting was out of their control. Only 5 of 44 subjects scored their control over the outcome a "6" or "7" on a scale from 0 to 7. The mean perceived control was 4.3 for the 44 predictions. In the two field studies then, managers seemed to have less control over outcomes than bowlers did, and predictably, managers showed lower accuracy in predicting outcomes.

In addressing the question about how the width of the range affects satisfaction ratings in the final study, we looked at the ranges provided by experienced and inexperienced managers. As expected, those who had been at their current hotel more than three years

provided narrower ranges. We then separated the experienced and inexperienced groups according to the region in which their outcomes fell so that we might compare satisfaction levels of the two groups in each region. In every case, the group of less experienced managers judged outcomes more dissatisfying (in regions 1 and 2) or more satisfying (in regions 4 and 5) than more experienced managers judged their actual outcomes in those four regions. Relative novices showed magnified affect above and below expectations among this group of hotel managers. This is a surprising result given our findings in Study 1, where our experience manipulation had no effect on satisfaction in hypothetical scenarios.

I will outline a few possible explanations for this finding. First, these less experienced managers may have a more difficult time determining the reason behind the unexpected outcome. As a result, they might be more likely to make a self-attribution for both good and bad outcomes, blaming themselves when things turn out worse than expected and believing themselves to be the cause of better-than-expected outcomes. More experienced managers would have an easier time attributing unexpected outcomes to outside factors, having seen many more unexpected outcomes over their careers. These external attributions would reduce the affect they feel in relation to unusual outcomes. While this experience factor should have been reflected in ranges that are relatively wide, we actually found the opposite to be true. Perhaps experienced managers, who recall these outcomes after an unexpected event, fail to take these “unusual” outcomes into account when making future predictions.

Beyond the primary research question involving predictions of affect, these two field studies also allowed us to examine the ability of individuals to predict actual outcomes. In the bowling study, although only 1 bowler correctly predicted his score, 87% of our subjects experienced an outcome that fell within the range of likely outcomes they had provided. Bad bowlers, who provided slightly wider ranges as a group, were a bit more likely than good bowlers to have an outcome fall within the ranges they had provided. Furthermore, more than 30% of these bowlers had an actual outcome within five percent of their predicted score.

Among hotel managers, 1 of 44 correctly predicted the actual outcome and 64% of the group experienced an outcome that fell within the range of likely outcomes they had provided. More than 27% had actual outcomes within five percent of their predictions.

As expected, the level of predictive accuracy seems to be related to the time between prediction and actual outcome, with more distant predictions being less accurate. In the hotel study, 77% of predictions made less than 15 days before the outcome occurred corresponded to a “hit,” defined as an actual outcome falling within the likely range of outcomes. This compares to a hit rate of 56% for predictions made 42 or more days before the outcome. It is important to note here that managers’ uncertainty about distant outcomes is reflected in wider ranges for predictions made well in advance. Nonetheless, these ranges are evidently not wide enough to accommodate the eventual outcomes in almost half of the cases we studied.

There are obvious limitations in using undergraduates as subjects, as in the first study reported above. Some of these individuals may not be able to fully anticipate how individuals responding to job offers or evaluating nightly gratuities or monthly occupancy would feel about outcomes in those situations. We have attempted to address this concern by conducting two studies in which individuals in real-life setting were used as subjects. Nonetheless, these studies may have limitations as well. The bowlers that we interviewed may have been affected by our presence and not performed or reacted in their usual manner. While we were able to monitor and record actual scores for most bowlers, our analysis relied in part on self-reported averages, which may have been erroneous. In the hotel study, we relied on manager's reports of actual outcomes in instances where documentation could not be provided, leaving open the possibility that managers erred in providing us these details. Additionally, the small pool of managers used in this study makes generalization difficult, even to other situations involving managers.

Conclusions

Previous literature has explored the accuracy of individuals in making predictions about future behavior (Shrauger & Osberg, 1981, 1982) and tastes (Kahneman & Snell, 1992). Separate studies have examined accuracy in predicting pain and fear (Arntz and Lousberg, 1990). The current research looks at accuracy in predicting emotional reactions to outcomes and finds that individuals do fairly well at this task. In the three studies reported here, we examined situations involving numerical outcomes, making it easier for subjects to respond to questions about hypothetical outcomes. While it may be

more difficult to consider how you might feel about outcomes without numerical guidelines, it is important to consider how our results might generalize to other arenas.

As an example from the realm of marketing, we might address whether consumers know how they'll feel if the car they have just purchased performs much better or much worse than they expected it to. An important related question is whether they imagine this range of outcomes and their likely reactions to those outcomes before making the purchase. We could identify numerical outcomes attached to such a purchase, like miles per gallon or dollars spent on maintenance and create hypothetical outcomes rather easily. We would expect that our findings would be replicated in such a study.

Attempting to create hypothetical outcomes for the amount of enjoyment (or frustration) that the car brings would be more difficult, but if these results generalized to similar situations, marketers might gain insight into the reactions of disgruntled customers. It would be helpful to know which potential outcomes these consumers imagine before buying the car. If previous experience shapes expectations, we would expect that first-time buyers (like novice bowlers) would imagine wider ranges of outcomes on the premise that they have limited knowledge about how the purchase will turn out. Experienced shoppers might be more certain about likely outcomes, resulting in them being more dissatisfied than they anticipate if the car turns out to be less than they expected. In many instances involving marketing and management, our expectations about affect are still to be explored.

REFERENCES

- Adams, S.J. (1965). Inequity in social exchange. In L. Berkowitz (ed.), Advances in Experimental Social Psychology, New York: Academic Press.
- Arntz, A. & Lousberg, R. (1990). The effect of underestimated pain and their relationship to habituation. Behaviour Research and Therapy, 28, 29-41.
- Boles, T.L. & Messick, D.M. (1995). A reverse outcome bias: The influence of multiple reference points on the evaluation of outcomes and decisions. Organizational Behavior and Human Decision Processes, 61, 262-275.
- Connolly, T., & Dean, D. (1997). Decomposed versus holistic estimates of effort required for software writing tasks. Management Science, 43, 1029-1045.
- Connolly, T., Ordóñez, L.D., & Coughlan, R. (1997). Regret and responsibility in the evaluation of decision outcomes. Organizational Behavior and Human Decision Processes, 70, 73-85.
- Conway, M., & Ross, M. (1984). Getting what you want by revising what you had. Journal of Personality and Social Psychology, 47, 738-748.
- Ditto, P.H. & Hilton, J.L. (1990). Expectancy processes in the health care interaction sequence. Journal of Social Issues, 46, 97-124.
- Festinger, L. (1954). A theory of social comparison. Human Relations, 7, 117-140.
- Gleicher, F., Kost, K.A., Baker, S.M., Strathman, A.J., Richman, S.A., & Sherman, S.J. (1990). The role of counterfactual thinking in judgments of affect. Personality and Social Psychology Bulletin, 16, 284-295.
- Hirt, E.R. (1990). Do I see only what I expect? Evidence for an expectancy guided retrieval model. Journal of Personality and Social Psychology, 58, 937-951.
- Iacobucci, D., Grayson, K., & Ostrom, A. (1994). The calculus of service quality and customer satisfaction: Theoretical and empirical differentiation and integration. In Swartz, T.A., Bowen, D.E., & Brown, S.W. (eds.), Advances in Services Marketing and Management: Research and Practice, vol.3. JAI Press: Greenwich, CT.
- Kahneman, D., & Snell, J. (1992). Predicting a changing taste: Do people know that they will like? Journal of Behavioral Decision Making, 5, 187-200.

Lackner, J.M., Carosella, A.M., & Feuerstein, M. (1996). Pain expectancies, pain, and functional self-efficacy expectancies as determinants of disability in patients with chronic lower back disorders. Journal of Consulting and Clinical Psychology, 64, 212-220.

Major, D.A., Kozlowski, S.W.J., Chao, G.T., & Gardner, P.D. (1995). A longitudinal investigation of newcomer expectations, early socialization outcomes, and the moderating effects of role development factors. Journal of Applied Psychology, 80, 418-431.

McFarland, C., Ross, M., & Giltrow, M. (1992). Biased recollections in older adults: The role of implicit theories of aging. Journal of Personality and Social Psychology, 62, 837-850.

Miller, D.T., & Turnbull, W. (1986). Expectancies and interpersonal processes. Annual Review of Psychology, 37, 233-256.

Oettingen, G., & Wadden, T.A. (1991). Expectation, fantasy, and weight loss: Is the impact of positive thinking always positive? Cognitive Therapy and Research, 15, 167-175.

Oliver, R.L. (1977). Effect of expectation and disconfirmation on postexposure product evaluations: An alternative interpretation. Journal of Applied Psychology, 62, 480-486.

Oliver, R.L. (1981). Measurement and evaluation of satisfaction processes in retail settings. Journal of Retailing, 57, 25-48.

Oliver, R.L. (1997). Satisfaction: a behavioral perspective on the consumer. McGraw Hill: New York.

Olson, J.M., Roese, N.J., & Zanna, M.P. (1996). Expectancies. In Higgins, E.T. & Kruglanski, A. (Eds.), Social Psychology: Handbook of Basic Principles (pp. 211-238). Guilford Press: New York.

Porter, L.W. & Steers, R.M. (1973). Organizational, work, and personal factors in employee turnover and absenteeism. Psychological Bulletin, 80, 151-176.

Rosenthal, R., & Jacobson, L. (1968). Pygmalion in the Classroom. New York: Holt, Rinehart, & Winston.

Ross, M. (1989). Relation of implicit theories to the construction of personal histories. Psychological Review, 96, 341-357.

Scheier, M.F., & Carver, C.S. (1992). Effects of optimism on psychological and physical well-being: Theoretical overview and empirical update. Cognitive Therapy and Research, 16, 201-228.

Shrauger, J.S. & Osberg, T.M. (1981). The relative accuracy of self-predictions and judgments by others in psychological assessment. Psychological Bulletin, 90, 322-351.

Shrauger, J.S. & Osberg, T.M. (1982). Self-awareness: The ability to predict one's future behavior. In G. Underwood (ed.), Aspects of Consciousness, New York: Academic Press.

Stayman, D.M., Alden, D.L., & Smith, K.H. (1992). Some effects of schematic processing on consumer expectations and disconfirmation judgments. Journal of Consumer Research, 19, 240-255.

Stotland, S., & Zuroff, D.C. (1991). Relations between multiple measures of dieting self-efficacy and weight change in a behavioral weight control program. Behavior Therapy, 22, 47-59.

Thibaut, J.W. & Kelley, H.H. (1959). The Social Psychology of Groups, New York: Wiley.

Tryon, W.W. (1994). Expectation. In Ramachandran, V.S. (ed.), Encyclopedia of Human Behavior. Academic Press: San Diego.

Tybout, A.M. & Artz, N. (1994). Consumer psychology. Annual Review of Psychology, 45, 131-169.

Urbany, J.E. & Dickson, P.R. (1991). Consumer normal price estimation: Market versus personal standards. Journal of Consumer Research, 18, 45-51.

Wanous, J.P., Poland, T.D., Premack, S.L., & Davis, K.S. (1992). The effects of met expectations on newcomer attitudes and behaviors: A review and meta-analysis. Journal of Applied Psychology, 77, 288-297.

Wilson, T.D., Lisle, D.J., Kraft, D., & Wetzel, C.G. (1989). Preferences as expectation-driven inferences: effects of affective expectations on affective experience. Journal of Personality and Social Psychology, 56, 519-530.

Zwick, R., Pieters, R., & Baumgartner, H. (1995). On the practical significance of hindsight bias: The case of the expectancy-disconfirmation model of consumer satisfaction. Organizational Behavior and Human Decision Processes, 64, 103-117.

IMAGE EVALUATION TEST TARGET (QA-3)

APPLIED IMAGE, Inc
1653 East Main Street
Rochester, NY 14609 USA
Phone: 716/482-0300
Fax: 716/288-5989

© 1993, Applied Image, Inc., All Rights Reserved