REVEALING THE ACTUAL ROLES OF EXPECTATIONS IN CONSUMER SATISFACTION WITH EXPERIENCE AND CREDENCE GOODS

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ABSTRACT

The disconfirmation of expectations model continues to be the dominant model in the study of customer satisfaction notwithstanding its serious conceptual flaws and its weak empirical support. Competing models reveal the two roles that expectations actually play: as a major determinant of the perception of perceived performance of a good, for credence goods, and as the standard of comparison for the determination of satisfaction with information, for both experience and credence goods. A model that uses desires as the standard for determining satisfaction with goods and expectations as the standard for determining satisfaction with information, is shown to generate the most realistic predictions. Some implications for theory and empirical research on consumer satisfaction and complaining behavior are briefly discussed along with some implications for marketing management.

INTRODUCTION

Although various researchers have proposed different standards as the basis of comparison for customers to assess their level of satisfaction with a product/service, the dominant paradigm in the customer satisfaction literature continues to be the disconfirmation of expectations model. This is so even though several researchers have noted serious conceptual problems with the disconfirmation of expectations model (Dixon, Spreng, and Olshavsky 1993; Spreng, MacKenzie, and Olshavsky 1996) and others have found empirical evidence that expectations play only a minor role in the formation of satisfaction judgments (Churchill and Surprenant 1982; Swan and Trawick 1979; Wirtz and Mattila 2001). Spreng et al. (1996) found that desires and expectations both influence overall satisfaction through their effects on satisfaction with goods and satisfaction with information. Their findings suggest that consumers are using both expectations and desires to form satisfaction judgments.

Swan and Trawick (1979) made a conceptual distinction between predictive expectations and desired expectations. Predictive expectation was the consumer's pre-usage estimate of the performance level that the product was anticipated to achieve; i.e., predictive expectation was the expectation term used in the traditional disconfirmation of expectation model of consumer satisfaction (Oliver 1980). Desired expectation was the consumer's pre-usage specification of the level of performance that the consumer wanted from a product. We refer to these desired expectations as desires in this paper to distinguish it from consumer expectations about what they are likely to get from a product.

Swan and Trawick (1979) examined four different scenarios: the effects on overall satisfaction when performance was equal to predictive expectations, less than predictive expectations, equal to desired expectations, and greater than desired expectations. Their empirical findings were contrary to the predictions of the traditional disconfirmation of expectations model, where predictive expectations was considered the comparison standard. In particular, their finding that consumers were indifferent when performance matched predictive expectations but reported high levels of satisfaction when performance matched desired expectations raises questions about expectations being used as the comparison standard by consumers making satisfaction judgments and offers strong support for desires as the appropriate standard in models of consumer satisfaction. However, they conclude that a possible reason they found no

effect of expectation on satisfaction was that consumers were very clear about the product performance in their study; i.e., consumers had no ambiguity or difficulty in assessing product performance. They speculated that when product performance was ambiguous (i.e., product claims were not easily verifiable), consumer expectations were likely to influence consumer assessments of product performance (also see Olshavsky and Miller 1972).

We feel there is a lot of merit in the observations made by Swan and Trawick (1979) about how and when expectations might influence consumer satisfaction. In fact, it is very plausible that clarity of product performance may have influenced prior research outcomes where some researchers found expectations to influence satisfaction (e.g., flu shots) and others found no effect of expectations on satisfaction (e.g., fabric cleaner whose performance in removing coffee stains was illustrated by using fabric samples which clearly had the stain removed). Yet, in the twenty one years since the work of Swan and Trawick (1979) there has not been much work examining the effects of expectations and desires on products whose performance is very discernible to the consumer versus products whose performance is difficult to discern.

This paper attempts to explore this issue in a systematic manner by considering the effect of two levels of the "verifiability of claims" (or clarity of product performance) on overall satisfaction for each of three distinct models of satisfaction. Prior research has classified products/services into three classes based on the ease with which consumers can verify the product claims. "Search" goods are those whose claims can be accurately evaluated before purchase. "Experience" goods are those whose claims can be fully evaluated only after product consumption. "Credence" goods are those whose claims differ from the prior two types in that accurate evaluation is beyond the consumer's capabilities (Darby and Karni 1973; Nelson 1974). We will examine only experience and credence goods because of our focus on post-consumption behaviors. Given the existence of large differences in the types of claims typically made on behalf of various goods, it is important to try and understand how consumers form their judgments of the consumption experience when they purchase and use goods with credence characteristics, i.e., goods where it is difficult for them to judge the performance of the good even after repeated uses. A "good" is defined here as a basic product or a basic service plus all associated services.

Consumer Evaluation of Quality of Credence Goods

Prior research (Wilson, Lisle, Kraft, and Wetzel 1989; Hirt 1990) has found that a person's affective expectations can influence his/her affective evaluations of a stimulus and even recalled evaluations of the performance of a stimulus was found to be influenced by prior expectations about the performance of that stimulus. In other words, irrespective of the actual performance of a stimulus, prior expectations about a stimulus' performance could drive the evaluation of a stimulus performance. Though these findings appear to be in line with the predictions based on assimilation effects, Wilson et al.'s (1989) work was unique in empirically demonstrating that *affective* expectations could influence evaluations of a stimulus. The interesting question related to these findings that arises in a consumption context pertains to the conditions under which these effects are likely to occur in consumption contexts. We suggest that evaluation of credence goods is an area where the above effects are likely to be seen. This is because these goods are difficult to evaluate even after they are consumed and hence prior expectations, particularly affective expectations (e.g., I think I will like this product) are likely to influence evaluations.

In this paper, we assume that consumers' assessments of the performance of a credence good will be completely determined by their expectations about the performance of the good. We incorporate this assumption in three different models of consumer satisfaction, namely: Model

1) the disconfirmation of expectations model, Model 2) the desires-as-standard model, and Model 3) an extended desires-as-standard model that incorporates satisfaction with information. First we discuss the process by which consumers are believed to form satisfaction judgments according to these three models of consumer satisfaction. Next, we present some simplifying assumptions concerning the processes by which consumers form satisfaction judgments. Based on these assumptions, for each of the three models, predictions of satisfaction for experience goods and credence goods are generated as a function of expectations, desires, and actual product quality. This systematic exploration of the satisfaction formation process offers interesting and useful insights about the two roles expectations actually play in the determination of overall satisfaction. We conclude that Model 3 is the best model for further research on consumer satisfaction and for guiding marketing decisions.

Model 1: The Disconfirmation of Expectations Model

We begin with the popular disconfirmation of expectations model. According to the disconfirmation of expectations model, satisfaction with a good (**Sg**) is a function of the difference between a good's perceived performance or perceived actual state (**PAS**) and the consumer's pre-purchase expectations (**E**). Following Spreng et al. (1996), we define expectations as *beliefs* about a good's performance at some time in the future. Expectations are determined prior to purchase and are based on information from a variety of sources including the information received from the firm (e.g., advertising, personal selling).

Often, the difference between the perceived actual state and expectations is stated algebraically as (**E-PAS**) because pre-purchase expectations are formed first and the good's performance assessed later. However, we believe it is better to state the comparison as (**PAS-E**) because for most goods when the difference (**PAS-E**)>0, consumer satisfaction is positive and when the difference (**PAS-E**)<0, consumer satisfaction is negative. Spreng et al. (1996) point out however that an exception occurs when consumers have an ideal point on an attribute; e.g., sweetness of a beverage. In these cases, consumers would not be satisfied with either positive or negative differences in (**PAS-E**).

Spreng et al. (1996) also argue that a more accurate conceptualization of the manner in which satisfaction judgments are made involves an assessment of the difference between perceived performance and expectations *followed by* an evaluation of how good or bad that difference is. Hence, they suggest that satisfaction is a *function* of the difference between the perceived actual state and pre-purchase expectations. We adopt Spreng et al.'s (1996) conceptualization and use the following notation to express satisfaction with goods under the disconfirmation of expectations model:

$$S_g = f(\text{PAS-E})$$

However, the word "function" is not meant to suggest any explicit mathematical formula. Instead, the rules for assigning satisfaction scores for various difference scores are described in a later section headed, simplifying assumptions. These assignment rules are used to generate the satisfaction scores presented in the tables.

Model 2: The Desires-As-Standard Model

The only difference between Model 1 and Model 2 is that for Model 2 the relevant comparison standard is now assumed to be pre-existing desires (**D**). Desires are assumed to be formed in a means-end manner; i.e., desires are derived from higher order goals and from beliefs that specify a functional relationship between goals and sub-goals. For example, antilock brakes on an automobile are believed by many to contribute to the achievement of the higher order goal of safety for one's family. Following Spreng et al. (1996), we define desires as an evaluation of the extent to which goods or benefits/attributes

lead to the attainment of higher order goals and use the following notation to express satisfaction with goods under the desires-as-standard model:

$$\mathbf{Sg = f(PAS\text{-}D)}$$

Desires can be very high (optimizers), very low (satisficers), or somewhere between these two extremes (realists). In this paper, we denote these three levels of desires by the following notation: D7 = a very high level of desires, D4 = an intermediate level of desires, and D1 = a very low levels of desires.

To illustrate how level of desires affect satisfaction, we describe a scenario familiar to academics. One encounters many students who desire an A grade in a course, some students who desire a B grade (especially if the course has a reputation of being a difficult course), and a few students who (for various reasons) desire only a C grade. Thus, the desires-as-standard model would predict that receiving a B grade would lead to dissatisfaction for a student with a desire for an A, satisfaction for a student with a desire for a B, and high satisfaction for a student who desires a C. It should be noted that even the student who desires an A may expect a B in a course that they think is likely to be difficult for them. In other words, desires and expectations could easily be very different in this case.

Model 3: The Extended Desires-As-Standard Model

The third and last model is based on the work of Spreng et al. (1996). According to these authors, Models 1 & 2 are incomplete representations of consumer satisfaction because they omit the very important role that satisfaction with information (**Si**) may play in determining a consumer's *overall satisfaction* (**So**) with the consumption experience. For example, a consumer may be very satisfied with a good (e.g., meal in a restaurant) but very dissatisfied with the information received about the good from a salesperson (e.g., information about the meal's ingredients from the waiter) or from some other source (e.g., friends, family) prior to the purchase. Hence, in this example, overall satisfaction will be less than satisfaction with the good because overall satisfaction is determined by *both* satisfaction with the good and satisfaction with the information. Thus, for Model 3, we use the following notation to express consumers' overall satisfaction, **So**:

$$\mathbf{So = W1*Sg + W2*Si,}$$

where **W1** and **W2** are the relative weights assumed to be implicitly assigned by a consumer to satisfaction with goods, **Sg,** and satisfaction with information, **Si**, respectively, as they assess their overall satisfaction. These weights are assumed to vary across consumers, across different shopping contexts, and across repeated consumption experiences. For our predictions in Tables 5 and 6, it is assumed that W1=0.75 and that W2=0.25.

It is further assumed that satisfaction with information is determined by the difference between the perceived actual state and expectations; i.e., $\mathbf{S_i = f(PAS - E)}$. This is because prior to actually experiencing the product, expectations about a product are likely to be based on the information received about the product. In the case of credence goods, we expect satisfaction with information to be always positive because on the basis of our earlier discussion about how consumers assess the quality of credence goods, we believe that for credence goods the perceived actual state is completely determined by expectations (**PAS=E**). For example, consumers cannot easily judge the performance of a flu shot (a credence good). Hence, a consumer who was told by his/her physician that a flu shot is very good at decreasing the odds of getting a bad case of the flu is likely to perceive the performance of the flu shot as very good. Similarly, a consumer who was told by his/her physician that a flu shot cannot do much to decrease the odds of getting a bad case of the flu is likely to perceive the performance of the flu shot as not very good. In both of these examples, **PAS=E**.

For experience goods, the "perceived actual state" (**PAS**) is determined entirely by the actual state (**AS**); i.e., since the consumer can accurately judge the performance of the good, **PAS = AS**. Here, the "actual state" (**AS**) of a firm's goods is synonymous with product quality or service quality. **E** will be determined by the information received prior to purchase. Hence, satisfaction with information will depend upon the judged significance of the difference between **PAS** and **E**. A more precise description of the impact of these perceived difference scores on satisfaction with information will be presented in Tables 5 and 6.

Simplifying Assumptions

To generate "tables" that allow us to better describe how each of these three models predicts consumers' overall satisfaction with experience goods and with credence goods as a function of expectations, desires, and actual state, the following additional "simplifying assumptions" or assignment rules are presented. It is to be noted that these assumptions could easily be studied in future research to test their plausibility and to explore the robustness of each of the models to deviations from these assumptions.

1) So is overall satisfaction. Sg is satisfaction with goods and Si is satisfaction with information. In Models 1 and 2, Sg is the same as So. In Model 3, So is a weighted sum of Sg and Si.

2) Satisfaction is measured on a scale ranging from -3 to +3 where -3 is extremely dissatisfied and +3 is extremely satisfied. The midpoint (0) on this scale indicates that the consumer is neither satisfied nor dissatisfied; i.e., the consumer is indifferent to the outcome. The midpoint of satisfaction is never used in tables we present here.

3) The "**f**" or "function" aspect of the equations for Models 1, 2, and 3 implies the following assignments between the difference scores and the satisfaction scores for all three types of satisfaction – goods, information, and overall:

a) Satisfaction is assigned a value of +1 when **PAS=E** or **PAS =D**; e.g., in Table 1 when PAS-E = 0. Satisfaction is assigned a value of +2 when **PAS - E** = +3 or **PAS - D = +3**. Similarly, when **PAS - E** = +6 or **PAS - D** = +6, a value of +3 is assigned to satisfaction.

b) Satisfaction is assigned a value of -2 when **PAS - E** = -3 or **PAS - D** = **-3**. A value of -3 is assigned to satisfaction when **PAS - E** = -6 or **PAS - D** = **-6.** (Note that in the Tables shown below PAS - E takes on only five distinct values: 0, +3, +6, -3, and -6 and the satisfaction values corresponding to these difference scores are +1, +2, +3, -2, and -3, respectively).

4) Expectations are determined prior to purchase and may be based on information from a variety of sources or expectations may be based entirely on the information received from the firm (e.g., advertising, personal selling).

5) The "actual state" (**AS**) of a firm's goods is synonymous with the product quality or service quality.

6) For experience goods, the "perceived actual state" (**PAS**) is determined entirely by the actual state (**AS**); i.e., since the consumer can accurately judge the quality of the consumption experience, **PAS = AS**.

7) For credence goods, the **PAS** is determined by pre-existing expectations based on information received from the firm and from other sources (e.g., friends). Here we assume that for most credence goods, **PAS = E**.

Based on these assumptions, we can explore what happens to the value of overall satisfaction as the actual state of the product or service varies from low to high for experience and credence goods. Tables 1 and 2 examine the predictions made by the disconfirmation-of-expectations model (Model 1), Tables 3 and 4 examine the predictions made by the desires-as-standard model

(Model 2), and Tables 5 and 6 examine the predictions made by the extended desires-as-standards model (Model 3). These tables are for illustrative purposes and they show very clearly how different combinations of desires, expectations, and actual state influence consumers' satisfaction with experience and credence goods by three different models. We will describe in detail how the numbers in Table 1 were generated and then briefly describe how the other Tables differ from Table 1.

Predictions Based on Model 1

Table 1 shows consumers who may be at three different levels of expectations (E1 - low expectations, E4 - moderate expectations, and E7 - high expectations). As it is assumed that desires can exist independently of expectations, Table 1 clearly shows that at any given level of expectation, a consumer could be at any of three levels of desires, e.g., a consumer with low expectations (E1) could have low desires (D1), moderate desires (D4) or high desires (D7). For experience goods, it is believed that consumers can assess the quality of the good after they experience or try the product. Column 2 of Table 1 shows that for low quality goods, consumers correctly assess PAS=1 (low quality) and column 5 shows that for high quality goods, they correctly assess PAS=7 (high quality). In columns 3 and 6, one can see the result of consumers comparing their perceptions of actual state of the product with their expectations, i.e., PAS-E. Hence, for low quality goods, we find that PAS-E=0 when consumer expectations are low and if we go down column 3, we find PAS-E= -6 when consumer expectations are high. It should be noted that for a given level of quality and expectations, the critical comparison that determines satisfaction, PAS-E, is always the same, irrespective of the level of desires (that is an important difference between Model 1 and Model 2). For high quality goods, in column 5, we find that PAS-E=6 when consumer expectations are low and PAS-E= 0 when consumer expectations are high. Finally, columns 4 and columns 7 show the satisfaction (**Sg**) assignments (using the simplifying assumptions) for low and high quality experience goods made by the disconfirmation-of-expectations model. For low quality goods when expectations are low, perceived product performance matches consumer expectations (PAS=E) and so consumers are satisfied with the good at the +1 level. For high quality products when expectations are low, perceived product performance considerably exceeds expectations and consumers are extremely satisfied with the good at level +3.

The main difference between Table 2 and Table 1 lies in the way the numbers in columns 2 and 5 are obtained. For credence goods, it is assumed that the perceived performance of the good is completely determined by consumers' prior expectations (as in the flu shot example mentioned earlier) and so the numbers in columns 2 and 5 are always equal to the expectation levels. Thus, PAS=1, when E=1 and this is true irrespective of the actual quality of the credence good. Columns 3 and 6 in Table 2 are derived in the same manner as in Table 1, i.e., PAS-E. As the numbers in the PAS column are equal to the expectations level, the PAS-E column will always have a zero for all credence goods. The impact of this is noticed in columns 4 and 7 where it is shown that the disconfirmation of expectations model predicts that consumers will always be satisfied with credence goods, irrespective of the level of desires, the level of actual product quality, and the level of expectations. This suggests that Model 1 makes predictions that are unrealistic and we discuss this issue later in the paper.

With respect to Table 2, it is important to stress that we assumed that the perceived actual state was determined entirely by pre-existing expectations (i.e., **PAS = E**). We recognize that under certain conditions consumers may *believe* that the information received from other consumers about the performance of a credence good is valid (even though, by definition, other consumers cannot judge a credence good's performance either). Hence, **PAS** may be greater than or less than expectations and our predictions

Table 1
For Experience Goods

		Low Quality (1)			High quality (7)		
		PAS	PAS-E	Sg=f(PAS - E)	PAS	PAS-E	Sg=f(PAS - E)
Low E (1)	D1	1	0	1	7	6	3
	D4	1	0	1	7	6	3
	D7	1	0	1	7	6	3
Med E (4)	D1	1	-3	-2	7	3	2
	D4	1	-3	-2	7	3	2
	D7	1	-3	-2	7	3	2
High E (7)	D1	1	-6	-3	7	0	1
	D4	1	-6	-3	7	0	1
	D7	1	-6	-3	7	0	1

Table 2
For Credence Goods

		Low Quality (1)			High quality (7)		
		PAS	PAS-E	Sg=f(PAS - E)	PAS	PAS-E	Sg=f(PAS -E)
Low E (1)	D1	1	0	1	1	0	1
	D4	1	0	1	1	0	1
	D7	1	0	1	1	0	1
Med E (4)	D1	4	0	1	4	0	1
	D4	4	0	1	4	0	1
	D7	4	0	1	4	0	1
High E (7)	D1	7	0	1	7	0	1
	D4	7	0	1	7	0	1
	D7	7	0	1	7	0	1

for So would change accordingly.

Predictions Based on Model 2

The entries in Tables 3 and 4 are derived the same way as in Tables 1 and 2 with the main difference being that columns 3 and 6 show the difference between perceived actual state and consumer desires (PAS-D) and not (PAS-E) as in Tables 1 and 2. Thus, in Table 3, column 3 shows that for a consumer with low expectations, PAS-D could vary from 0 to -6 for a low quality product because a person with low expectations may have desires that vary from low to high. These values

Table 3
For Experience Goods

		Low Quality (1)			High quality (7)		
		PAS	PAS-D	Sg=f(PAS - D)	PAS	PAS-D	Sg=f(PAS - D)
E1	D1	1	0	1	7	6	3
	D4	1	-3	-2	7	3	2
	D7	1	-6	-3	7	0	1
E4	D1	1	0	1	7	6	3
	D4	1	-3	-2	7	3	2
	D7	1	-6	-3	7	0	1
E7	D1	1	0	1	7	6	3
	D4	1	-3	-2	7	3	2
	D7	1	-6	-3	7	0	1

Table 4
For Credence Goods

		Low Quality (1)			High quality (7)		
		PAS	PAS-D	Sg=f(PAS - D)	PAS	PAS-D	Sg=f(PAS - D)
E1	D1	1	0	1	1	0	1
	D4	1	-3	-2	1	-3	-2
	D7	1	-6	-3	1	-6	-3
E4	D1	4	3	2	4	3	2
	D4	4	0	1	4	0	1
	D7	4	-3	-2	4	-3	-2
E7	D1	7	6	3	7	6	3
	D4	7	3	2	7	3	2
	D7	7	0	1	7	0	1

in column 3 are in sharp contrast to Table 1 where column 3 was a constant for a given level of expectations. The level of satisfaction shown in column 4 is a direct result of the numbers derived in column 3; i.e., when PAS-D=0, Sg=1; when PAS-D= -3, Sg= -2; and when PAS-D= -6, Sg= -3. Using the assignment rules presented in the simplifying assumptions, one can easily derive the numbers for high quality experience goods shown in columns 6 and 7. Again, it is important to note that for credence goods we are assuming that **PAS = E**.

Table 5
For Experience Goods

		Low Quality				High quality			
		PAS	Sg	Si	So	PAS	Sg	Si	So
E1	D1	1	1	1	1.00	7	3	3	3.00
	D4	1	-2	1	-1.25	7	2	3	2.25
	D7	1	-3	1	-2.00	7	1	3	1.50
E4	D1	1	1	-2	0.25	7	3	2	2.75
	D4	1	-2	-2	-2.00	7	2	2	2.00
	D7	1	-3	-2	-2.75	7	1	2	1.25
E7	D1	1	1	-3	0.00	7	3	1	2.50
	D4	1	-2	-3	-2.25	7	2	1	1.75
	D7	1	-3	-3	-3.00	7	1	1	1.00

Table 6
For Credence Goods

		Low Quality				High quality			
		PAS	Sg	Si	So	PAS	Sg	Si	So
E1	D1	1	1	1	1.00	1	1	1	1.00
	D4	1	-2	1	-1.25	1	-2	1	-1.25
	D7	1	-3	1	-2.00	1	-3	1	-2.00
E4	D1	4	2	1	1.75	4	2	1	1.75
	D4	4	1	1	1.00	4	1	1	1.00
	D7	4	-2	1	-1.25	4	-2	1	-1.25
E7	D1	7	3	1	2.50	7	3	1	2.50
	D4	7	2	1	1.75	7	2	1	1.75
	D7	7	1	1	1.00	7	1	1	1.00

Predictions Based on Model 3

Tables 5 and 6 are slightly different from Tables 3 and 4. First, we have eliminated the column PAS-D to simplify the table. However, it should be noted that Sg, satisfaction with good, is still determined by PAS-D using the simplifying assumptions. For example, in Table 5, it is shown that consumers with high level of desires will have extreme dissatisfaction (Sg= -3) when product quality is low. This value of Sg is based on the fact that PAS-D (i.e., 1 - 7) equals -6 and by our simplifying assumptions, Sg= -3 when PAS-D= -6.

The other difference between Tables 5 and 6 and the Tables 3 and 4 is that in Tables 5 and 6, we have introduced two new columns called Si and So which represent satisfaction with information and overall satisfaction, respectively. The numbers in column Si are based on the value of the difference PAS-E. To illustrate, when consumers with low expectations experience a product that has low quality, they are satisfied with the information they received about the product, irrespective of the level of their desires, PAS = E, Si = +1. However, if the quality is very low and their desires are very high, they will be extremely dissatisfied with the good even if their expectations are low (see Table 5, column 3, value of Sg corresponding to E1 and D7). And note that in this condition, Si = +1 because PAS = E.

The values of So in columns 5 and 6 for Tables 5 and 6 are calculated using the formula stated previously for Model 3. For instance, for Table 5, in the low quality, E1, D1 condition, So = .75 (1) + (.25) 1 = +1.

DISCUSSION

Some Implications for Theory

The three models discussed above and the tables generated on the basis of these models provide a theoretical extension to the work of Swan and Trawick (1979). They made a conceptual distinction between predictive expectations and desires and found that meeting or exceeding desires resulted in high levels of satisfaction. Although their results suggested that desires as a comparison standard was better than the traditional expectations-as- standard model in predicting consumer satisfaction, they felt that when product performance was ambiguous, expectations could influence perceived performance and hence influence satisfaction. However, they did not speculate on the relative efficacy of the disconfirmation of expectations model versus the desires as standard model.

We stated the main assumptions of three different models and used each of these models to predict overall satisfaction with experience goods and credence goods. The results shown in Tables 1 to 6 are interesting and can offer practical insights for academics and managers about the relative efficacy of the models in predicting overall satisfaction. Although Swan and Trawick (1979) did not examine credence goods and they did not specify levels of predicted satisfaction numerically in their Table 1 (where they predict satisfaction/dissatisfaction for different combinations of desires, expectations and performance), the predicted satisfaction for experience goods and credence goods in our study using the desires as standard model corresponded perfectly with the predicted satisfaction in their Table 1. For example, in our Table 3, the cell corresponding to E4, D1 and low quality product corresponds to their cell where predicted expectations are greater than desires and performance is equal to desires. Based on the assumptions of Model 2, we calculated overall satisfaction in this cell to be 1 which matched their prediction that this cell would have satisfied consumers. The interesting finding is that Swan and Trawick's (1979) predictions held true for credence goods, too. For example, in Table 4, the cell E1, D7, low quality product corresponded to their cell where predicted expectations are less than desires and performance is equal to expectations. Based on the assumptions of Model 2, we calculated satisfaction in this cell to be -3 which matched their prediction that this cell would have dissatisfied consumers.

Similarly, we find from Tables 5 and 6 that predictions of Model 3, the extended desires as standard model, which had satisfaction with information included as a component contributing to overall satisfaction, also corresponded well with the empirical evidence from Swan and Trawick's (1979) study. In fact, the results in Tables 5 and 6 follow the same pattern as the results in Tables 3 and 4; i.e., there is a good match between the predictions of satisfaction/dissatisfaction for all the cells under the two models. However, it should be pointed out that this match may be a function of the weights we chose for satisfaction with goods and satisfaction with information (W1=0.75 and

W2=0.25). If we decrease the weight for satisfaction with good to 0.25 and increase the weight for satisfaction with information to 0.75, we could expect results that differ considerably from the predictions of the desires as standard model that does not include satisfaction with information. In contrast, we find from Table 1 that the disconfirmation of expectation model would make erroneous predictions for three of the six cells for which we have empirical evidence from Swan and Trawick's (1979) study using an experience good.

For credence goods, though we don't have empirical evidence to compare the relative efficacy of the different models, the predictions based on the disconfirmation of expectation model seem a bit unrealistic; i.e., irrespective of expectations, desires, and product quality, consumers will always have the same low level of satisfaction with the product or service. If this were true, there would be no way for marketers to influence consumers' overall satisfaction with a product/service based on product performance, expectations and desires. It would seem more realistic that even if consumers can't assess product performance accurately, their satisfaction with the good would vary as a function of the interaction among expectations, desires, and actual performance as predicted by the desires as standard model.

It is important to note that the dichotomy proposed in the form of "experience" goods vs. "credence" goods is perhaps better viewed as extreme points on a continuum. In reality most goods are comprised of multiple benefits/ attributes and some of these benefits/attributes and the claims made on behalf of some of these benefits/attributes may be verifiable while others may not be verifiable. Further, even for certain types of experience goods, we expect differences among consumers in their ability to verify claims. Some of these differences among consumers may be sensory in nature (e.g., the ability or inability to detect differences in the taste of similar brands of foods or beverages) while some of these differences may be cognitive in nature (e.g., the knowledge or skills required to judge the quality of computer software, artwork, furniture, or rugs). Hence, we expect these complications to continue to create difficulties interpreting the results of past and future studies of consumer satisfaction/ dissatisfaction. Clearly, empirical tests of our predictions, even though greatly simplified, must be conducted before we can draw really firm conclusions.

Based on the models we present here and the empirical support provided by Swan and Trawick's (1979) research, we believe that Model 1 (the disconfirmation of expectations model) has serious deficiencies, both conceptual and empirical. However, as demonstrated in Models 2 and 3, expectations are an important determinant of satisfaction for goods that have one or more salient credence benefits/attributes and for experience goods being evaluated by consumers who do not have the necessary ability to evaluate them. Specifically, expectations play at least two important roles in the determination of overall satisfaction: 1) as a potentially powerful determinant of the perceived actual state for credence goods and for experience goods for some consumers, and 2) as the standard of comparison for satisfaction with information for both experience and credence goods. (The empirical support found in past studies for expectations as the standard may be attributed to one or both of these roles.)

Finally, we believe that Model 3 (especially with additional assumptions about the role of attributions and appraisals) may have some important implications for furthering our understanding of complaining behavior. Prior research has shown that differences in the attributions consumers make about the causes for product failure can lead to different kinds of behavior (Folkes 1984) and attributions have been shown to be the antecedents of cognitive appraisals which in turn result in various kinds of emotions (Smith et al. 1993; Kumar and Olshavsky 1996). Thus, it is very likely that different attributions about product performance and product information will lead to different appraisals of a consumption experience which in turn would result in differences in the emotions

evoked in the consumer and also in his/her level of satisfaction with the good and satisfaction with the information. Hence, we would argue that one implication of Model 3 (or a slight variation of Model 3) would be that the different combinations of satisfaction with good and satisfaction with information could result in quite different types of complaining behavior. To illustrate, a 2 X 2 table can be formed with high and low levels of Sg and high and low levels of Si. For each of the four resulting cells, differential predictions can be made concerning the types of complaining behavior that are most likely to occur. Consumers who are very dissatisfied with the good *and* very dissatisfied with the information, can be expected to react very differently from those who are very dissatisfied with the good, but very satisfied with the information. Similarly, consumers who are dissatisfied with the information and believe that a salesperson lied to them to increase his/her own profit are likely to engage in more active forms of complaining behavior (e.g., seek the manager out and accuse the firm of deception) than consumers who are dissatisfied with the information and believe that salesperson's inexperience (e.g., young salesperson who informs you that it is his/her first day on the job) was responsible for the inaccurate information they received.

In conclusion, we believe that Model 3 offers researchers the best basis for future studies of consumer satisfaction. We believe greater empirical testing of Model 3 will be helpful in assessing its efficacy for predicting consumer satisfaction and also for understanding consumers' responses to dissatisfaction.

Some Marketing Management Implications

The three models differ greatly in terms of their implications for marketers. To get some practical insights into how marketers of credence goods can influence consumers' overall satisfaction, we examine, using each of the three models, the effects of increasing consumer expectations and product performance on overall satisfaction. We chose expectations and performance as these are more under the direct influence of a manager's actions; i.e., marketing communications can influence expectations while a firm has the choice of making high or low quality products/services.

For experience goods, Model 1, the disconfirmation of expectations model, predicts that as expectations increase, satisfaction with the good decreases because the difference between perceived performance and expectations becomes increasingly less favorable (see Table 1). This difference increases because consumers can accurately assess the performance of an experience good and this assessment of performance is assumed to be independent of the level of expectations. Thus for a given level of product quality, an increase in consumer expectations about the good's performance will lead to lower levels of satisfaction. For experience goods, desires are not part of the Model 1.

For experience goods, Model 2, the desires as standard model, predicts that as consumer expectations increase, satisfaction is not affected because the difference between perceived performance and desires does not change as expectations increase (see Table 3). For experience goods, expectations are assumed to play no role in Model 2. Because consumers can assess performance accurately, satisfaction is solely a function of the difference between perceived performance and desires. In Model 2, expectations and desires are assumed to be independent of each. (It is recognized that consumers' desires may be influenced by a firm's promotions but this has not been incorporated in this version of Model 2 in order to simplify presentation of our more basic points.) Therefore, for experience goods both Model 1 and Model 2 imply that marketers of experience goods cannot be successful only by allocating resources to increase consumer expectations without doing something to increase product quality. However, the two models differ in their implications for credence goods.

For credence goods, consumers cannot determine the quality of the goods and their perceptions of performance are determined

entirely by their expectations; e.g., most buyers of precious stones cannot accurately judge the quality of these stones and their decision to buy from a known, reputable jeweler versus a discount store is driven by their belief that the goods sold by the known jeweler is likely to be of higher quality than similar looking goods sold at the discount store. Hence, for credence goods, perceptions of performance and expectations are always equal, at all levels of expectations (see Table 2). This is true for both low and high quality credence goods. Model 1 predicts that as expectations increase, satisfaction does not change because the difference between perceived performance and expectations always remains constant for credence goods. Model 2 predicts that as expectations increase, satisfaction increases because the difference between the perceived actual state and desires becomes larger and therefore increasingly more favorable. This difference increases because perceived performance is assumed to be determined by expectations (see Table 4). This is true for both low and high quality credence goods. Model 2 therefore implies that marketers of credence goods should allocate resources to attempt to increase consumer expectations. Although this fact is known to most casual observers of the marketing practices of firms, Model 2 offers a simple explanation of when such practices will influence consumer satisfaction and when they will not. We hasten to add however that Model 2 makes clear that marketers of credence goods that have achieved high levels of consumer satisfaction merely by forming high expectations are on very shaky ground (e.g., a product-testing organization using sophisticated laboratory techniques may one day reveal the actual level of product quality, as happened when Consumers Union reported on the relative purity of various brands of bottled water vs. tap water).

Model 3 has implications for marketers that are similar to Model 2. However, Model 3 has the additional implication that overall satisfaction is determined by both satisfaction with the good and satisfaction with the information. Hence, the level of satisfaction or dissatisfaction with the overall consumption experience (which should be of most interest to marketers) can be increased or decreased depending upon the consumer's satisfaction with the information about the good received prior to the purchase. While information about goods can and does come from many sources (e.g., friends, product-testing organizations, packaging), one very important source takes the form of the various promotions (e.g., advertising, sales promotions, personal selling, public relations, the firm's website, direct marketing) undertaken by the firm. It therefore behooves marketers to carefully monitor and control the impact of all of their promotional efforts on consumer's satisfaction with information as well as on satisfaction with the good.

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