November 30, 1985

Impact of Unexpected Events on Intention-Behavior Discrepancy: A Longitudinal Study

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Abstract

The explanations of intention-behavior discrepancy have included various arguments such as the rule of correspondence, the stochastic behavior model and the effects of unexpected events. However, most of the studies in intention-behavior discrepany area were corss-sectional and used behavioral scenario measures for anticipated behavior. A longitudinal laboratory study was conducted in the area of consumers' choices of soft drinks. The 47 subjects were repeatedly measured on 1) their intentions, 2) their overt choices, and 3) their future intentions for a period of twelve times in four weeks. Results from crosstabulations and ANOVA models have indicated that the intention-behavior discrepancy can best be explained by the interference of unexpected events occured simultaneously with the overt behavior.

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Introduction

The purpose of this study is to measure the impact of unexpected events in explaining the discrepacny between a person's actual behavior and his/her stated intentions.

The topic of attitude-intention-behavior discrepancy has been a subject of debates since the early days of social psychology (LaPiere 1934). Many investigators have attempted to enhance behavior prediction by taking variables other then attitudes into account. One of these variables is the person's intention to perform the behavior. It is viewed as the immediate determinant of behavior. There presently exists a variety of behavioral intention models (Dulany, 1968; Fishein and Ajzen, 1975; Jaccard and King, 1977; Triandis, 1977; Sheth, 1974; Warshaw, 1980). However, despite the efforts to predict behavior from behavioral intentions, there is considerable evidence that behavioral intentions also do not correlate with subsequent behavior (Pratt, 1965; Wicker, 1971; Bhagate, Raju and Sheth, 1970). Three different explanations have been provided for this discrepancy.

1. Lack of Correspondence

Fishbein and Ajzen's (1975, 1980) "Theory of reasoned action" suggested that the best predictor of behavior is the actor's intention to perform the behavior. The intention is based on the actor's attitude toward the behavior and the subjective norm regarding the behavior. A number of studies employing

the Fishbein and Ajzen model found that behavioral intentions showed strong correlations with behaviors. The model was generally successfully in accounting for high invlovement issues such as family planning behavior (Davidson and Jaccard, 1979; Vinokur-Kaplan, 1978), alcohol use (Kilty, 1978; Schlegel, Crawford and Sanborn, 1977), re-enlistment in the National Guard (Hom, Katerberg and Hulin, 1979), and voting on a nuclear power plant proposal (Bowman and Fishbein, 1978). In consumer behavior research, positive results have been reported by Wilson, Mathews and Harvey (1975), Harrell (1977), Ryan and Bonfield (1980), Oliver and Berger (1979), and, Siebold and Roper (1979). However, some researchers have reported low predicting power of the model (Ryan and Bonfield, 1975).

Ajzen and Fishbein's (1977) extensive literature review paper concluded that attitudes and behavioral intentions were good predictors of behavior only when the attitudinal and behavioral measures shared a high degree of correspondence. Attitude and behavior measures are said to correspond when they match on action, target, context and time dimensions. The more the attitude measures correspond to the behavioral criteria, the better will be the prediction (Jaccard, King and Pomazal, 1977). The failure of some studies to find significant intention-behavior relationship can probably be attributed to a lack of correspondence in the measures.

On the other hand, a lack of correspondence does not guarantee that attiutdes will be unrelated to behaviors (McGuinnes, Jones and Cole, 1977; Schriesheim, 1978; Hamner and Smith, 1978; Mirvis and Lawler, 1977). Additional measurement factors can also increase the intention-behavior correlation. For example, the clsoer in time the attitude, intention and

behavior measures are taken, the higher the intention-behavior correlation (Davidson and Jaccard, 1979; Schwartz, 1978). Under high commitment conditions intentions would be better predictors of interracial behaviors (Gabrenya and Arkin, 1979). And Duval and Wicklund (1972) suggested that measuring attitudes and behavior under conditions of objective self-awareness would enhance intention-behavior consistency. It is apparant that the use of intention as an intervening variable between attitude and behavior for the explanation of behavior at best produced mixed empirical results.

2. Stochastic Behavior Explanation

Intention-behavior discrepancy can be explained by the stochastic school of thought on human behavior. Some researchers have noted that in most of the empirical studies, the deterministic models of behavior have failed to explain and predict behavior. They attributed this to certain stochastic elements in a person's brain which could influence choice. Human behavior thus represents a set of random actions. They have argued that most of the comprehensive consumer behavior models do not include all explanatory variables for human behavior. In a soft-drink study, Bass, Pessemier and Lehmann (1972) have found that choice behavior is not necessarily constant even though stated preference and attitude are unchanging. They inferred that attitude-based predictions of choice must be probabilistic. Bass (1974) has introduced a general theory of stochastic preference which reconciles the poor predictions of deterministic models on individual choice behavior. Since measured intentions have been poor predictors of behaviors, a stochastic explanation of human behvior would seem to be appropriate.

3. Unxpected Events Influence

The intention-behavior discrepancy issue can also be explained by the occurrence of unexpected events which influence the overt behavior after a person has stated his/her intention. These extraneous unexpected events are unplanned or unxpected that occurred in between stated intention and behavior, or during overt behavior. Wicker (1971) found that the best single preditor of behavior was judged influence of extraneous unxpected events. Sheth (1974) suggested that behavior is a function of the individual's affect, behavioral intention and a set of unexpected events. The unxpected events concept in his model refers to the antecedent and contiguous stimuli that impinge on the individual at the time and place of the manifestation of behavior. Due to the occurrence of unexpected events, a person may very well change his/her stated intention. Pratt's (1965) longitudinal study on consumer durable goods also provide evidence for the instability of behavioral intention measures. Katona and associates at the Institute of Social Research in Michigan have conducted numerous longitudinal studies on the ideas of the shifting of expectation, changes in aspirations and attitudes on consumer purchases.

All of these theoretical and empirical research are very reasonable explanations for the discrepance between intention and behavior. It is difficult to rule out any of these explanations by logic or deductive reasoning. The purpose of this study is to use the longitudinal experimental method in which we can explain the causes of the intention-behavior discrepancy by either control or eliminate the interference of the correspondence of measurement and the random behavior explanations. Unlike other studies in intention-behavior, this study used actual overt behavior

measures rather than behavioral scenairos or anticipated measures of behavior. Specifically we would like to test the following hypotheses:

1. In general, a specifically stated behavioral intention would be a good indicator for expected behavior.
2. During overt behavior, the interference of unexpected situational events would inhabit the execution of a previously stated intention.
3. Interference of unexpected situational events would be the best explanation for intention-behavior discrepancy.

Design of Study

1.Subjects

The subjects of this study were recruited from the subject pool of college students. A total of ninety-eight students signed up for the study. The experiment was conducted in the behavioral laboratory at a university. A briefing session was held on the Friday before the first experiment. The purpose of the briefing session was to explain the requirement and procedures of the study. They were told that they were to participate in a shopping experiment for carbonated beverages. Subjects were also asked to fill out a background survey at the briefing session. The purpose of this survey was to discourage those subjects who disliked carbonated beverages from participating and to find out the most popular carbonaged beverages among the subjects. The most popular brands would be used in the experiments to encourage participation. Aslo, they were told that an incentive of five dollars would be given to those who have participated and completed at the end of the study. Out of the total of 98 who came for the briefing session, 53 agreed to

participate. At the end of the study, a total of 47 completed the whole experiment. A debriefing session was held at the end to answer questions from the subjects and to explain the purpose of the experiments. Aslo, the rewards were distributed.

2. Design

The study lasted for four weeks and the subjects had to come in during the lunch hour on Monday, Wednesday and Friday for a total of twelve times. Based on the survey, we chose Pepsi, Coca-cola, Mountain Dew, 7-up, Diet 7-up, Tab and Orange Crush for the experiments. Among these seven beverages, Pepsi was the most popular brand, and Coca-cola came in second. Therefore, Pepsi was the beverage under manipulation throughout the study. Another beverage, RC Cola was chosen as a close substitute for Pepsi which was introduced as a competitive brand from time to time, accordingly. Three separate but adjoining rooms were used in the behavioral laboratory. One was the reception area where subjects came in and filled out an record form for the day's purchase. They were told that the purpose of the record was to help the researcher to order and stock enough soda berverages for the experiments. They had to respond to two questions: "What would you like to buy today?" and "What do you intend to buy next time?". Subjects than proceeded to the adjoining room. In this room, chilled soda cans were displayed, similar to the arrangement of an aisle in the supermarket, and with price of each brand clearly marked. Subjects were expected to shop through the aisle and make a choice. The exit of this room led to the third room where the subjects returned their record forms and paid the cashier the appropriate amount. The cashier marked the brand of beverage the subject had chosen. The subjects were only allowed to choose one can of beverage, but they had the option of not buying anything for that day.

Three manipulations were used in this study: price, availability and the introduction of a competitive brand. The treatment brands were Pepsi and RC Cola. The descriptions for the three manipulations are as follows:

1. price

All brands were charged a uniform price of 15¢ per can during the normal shopping day. However, on an experimental day, price of Pepsi or RC Cola could go up to 30¢ per can or could go down to 10¢ per can.

2. Availability

During an experimental day, Pepsi would not be available.

3. Competitive Brand

During an experimental day, RC Cola would be introduced to replace Pepsi or compete with Pepsi at regular, lower or higher price.

3. The Experiment Trials

Subjects had to participate in twelve experimental trails for the study. The random manipulations of the twelve trials are as follows:

1. 1, 4, 9, 12 : Benchmark trials, no manipulations.
2. 2 : Increase price for Pepsi.
3. 3 : Reduce price for RC Cola.
4. 5 : Reduce price for Pepsi.
5. 6 : Increase price for Pepsi and introduce RC Cola at regular price.
6. 7 : Withdraw Pepsi.
7. 8 : Reduce price for Pepsi and introduce RC Cola at regular price.
8. 10 : Withdraw Pepsi and introduce RC Cola at higher price.
9. 11 : Both Pepsi and RC Cola are available at regular price.

In order to isolate the lack of correspondence as an explanation for the discrepancy, the experiments were designed so that all the reasons cited by Fishbein-Ajzen could be eliminated. The behavioral intention was asked only a few seconds and a few feet from the actual overt choice behavior. Similarly, the intention was a choice among alternatives and no other attitudinal questions were asked, so that there were no scale effects of a measuring instrument. The physical surroundings were kept constant through out the study. We used the same experimenters for all twelve trials. The shopping aisle was set up in an identical fashion and the carbonated beverages were placed on the same shelf positions through out all twelve trials. Furthermore, to make sure there was no learning effect over time, we randomly selected four time periods at which the effect of stochastic choice would be observed. Trials one, fourth, ninth and twelfth were benchmark trials without any manipulation.

Finally, to measure the impact of unxpected events, we selected the most common practices in the market. Marketers have tried unadvertised sales, price reduction, stock-out, price markup or by introducing a new brand to manipulate sale. We chose the price, availability and new brand introduction for our manipulations because they were most common task, easy to manipulate and directly observable.

In summary, it was a longitudinal laboratory experiment which controlled, as best as possible, alternative effects. The three adjoining rooms were free of interference during all experiments. The experiments were set in term of the personal lunchtime consumption period. It was very natural for the

subjects, who were soda drinkers, to buy a can of soda during lunch hour. Most importantly, the time and space between the expression of intention and overt behavior were kept as contiguous as possible to minimize a lack of correspondence. The product and brands we chose were highly familiar and common, so that subjects could express intention freely without any interference from variables such as social stereotyping and other motivational factors.

Results

Three pieces of relevant data were collected from each of the 47 subjects during each of the twelve trials. They were the intention, the actual choice behavior and the intention for the next purchase. A series of cross-classificatons were used to generate comparisons of behavioral intentions and instantaneous behavior under various manipulations. The first set of cross-classifications was the comparison of intention-behavior across all choices. The second set of cross-classifications was for Pepsi choice only. We examined intention-behavior for benchmark trials, the price effect, the availability effect and the combination of price and availability effect. Also, analysis of variance models were constructed. Since this was a repeated measures study with dichotomous data, Cochran's Q was used as the test statistic instead of the F test. Cochran's Q tests the hypothesis of no change in the proportion of sucessful outcomes over time.

Insert Table 1 Here

During the bechmark trials where there were no experimental manipulations, the choice behavior were highly consistent. Only an average of 8.5% of all choices were discrepant from thier stated intentions across all four benchmark trials. The majority of subjects did carried out their intentions over four different observations. Some of the discrepancy infact were postponement of purchase rather than change of brand preference. We observed more postponement during the ninth trial. The intention-behavior consistency over time would rule out the stochastic argument of behavior. Also, these results would eliminate the learning or conditioning effect over time and the novelty, curiosity argument of behavior for the experiments. With identical setting, free of interference and free of manipulations, subjects did follow through with their stated intentions. We also examined the intention-behavior for the Pepsi choice only. The Pepsi intention-behavior consistency were high across all four benchmark trials, with few brand switching and postponement of choice. The Cochran's Q test for all four benchmark trials was 7.4 with 3 df. The test had indicated that all four benchmark trials were equivalant.

In a similar soft drink study (Bass, Pessemier and Lehmann ,1972), they found that choice behavior was not constant even when attitude remained the same. They suggested that attitude based predictions of choice must be probabilistic rather than deterministic. However, the results in Table One show that intention and behavior are highly consistent even over time. We used a simple intention measure and overt behavior observation rather than a survey instrument to compare the discrepancy. This would eliminate any explanations based on scale of measurement and other rule of correspondence arguments.

Secondly, we examined the effect of price on intention-behavior discrepancy (Table 2).

Insert Table 2 Here

On the aggregate level, when the price of Pepsi was reduced, 25.2% of the subjects did not carry out their intentions. A same percentage also occurred when we reduced the price of RC Cola. A price reduction had attarcted others to switch to Pepsi or RC Cola. However, a price increase for Pepsi reduced the discrepancy rate to 8.5%. It did not have a substantial impact on brand switches. Apparantly, price reduction, which was a positive unexpected event, induced a larger number of brand swtiches. For those who had stated their intentions for Pepsi, a price increase inhibited a majority of them from carry out those intentions.

The third set of results were for the availability effect (Table 3).

Insert Table 3 Here

We had two manipulations, either RC Cola was introduced or Pepsi was withdrawn from the experiment. The results indicated that the introduction of a similar brand together with Pepsi at the same price did not induce a drastic change of intentions from the subjects. Only 14.9% changed their intentions. However, the withdrawal of Pepsi created a 29.8% discrepancy. Those subjects who intended to purchase Pepsi had to seek other brands or to postpone their purchases. To observe the Pepsi buyers only, very few had changed their intentions with the introduction of RC Cola at compatible price.

he fourth set of results were for the combinations of price and
ılability effect (Table 4).

Insert Table 4 Here

der the combination effect of price reduction for Pepsi and the introduction RC Cola at regular price, 42.6% of the subjects did not carry out their ıtentions. When we increased the price of Pepsi and added RC Cola, the iscrepancy rate dropped to about 24%. Same discrepancy rate was observed for he withdrawal of Pepsi and increased the price for RC Cola. In general, a ɔrice increase would not attract many brand switches. However, when we examined the Pepsi choices only, a price increase had inhibited many Pepsi buyers from carried out their intentions, especially when they could find a substitute.

Three analysis of variance models were constructed (Table 5, Table 6 and Table 7).

Insert Table 5 & Table 6 & Table 7 Here

The models were used to test the hypothesis of no change in the proportion of sucessful outcomes over time. The first ANOVA model (Table 5), indicates the degree of intention-behavior discrepancy of the benchmark trials. The between measures were .79 with 3 degree of freedom and were not significant at the .05 level. This led us to conclude that there was no significant change in the proportion of sucessful outcomes over time. Without any interference from external events, the subjects did carry out their intentions. The second ANOVA model (Table 6), indicates the degree of intention-behavior discrepancy

across all experimental trials. The between measures were 2.50 with 7 degree of freedom and were significant at the .10 level. The third ANOVA model (Table 7), indicates the degree of intention-behavior discrepancy across all trials. The between measures were 5.87 with 11 degree of freedom and were significant at the .01 level. This led us to conclude that there was a significant change in the proportion of sucessful outcomes over time. The subjects did not carry out their stated intentions. It was attributed to the interference of extraneous events.

Discussion

This controlled longitudinal study has demonstrated that stated intention is not a good surrogate indicator for overt behavior when under the effect of extraneous influence. Some researchers have suggested that as the time of measured intention and observed behavior are close to each other, we should have less intention-behavior discrepancy. However, we have found that even only within a few seconds and a few feet away from where the subjects have stated their intentions, they would not carry out those intentions while encountered unexpected events. We have noted that the occurrence of unexpected events during overt manifestation of behavior affects a perviously formed intention. Intention is an appropriate construct for behavior only when there is no extraneous events impinge on the overt behavior.

In consumer behavior research, many models were developed to explain how consumers react to marketing stimuli and make buying decisions. Many of these models have assumed consumers would form purchase intentions as a result of favorable attitudes toward the brand. Also, these intention constructs are

linked to behavior without the consideration of the extraneous event construct. In constructing consumer behavior model, the construct of unexpected event is an important intervening variable to explain intention-behavior discrepancy.

For many years, marketers have focused their attention on changing consumer attitude through advertising. Large sum of advertising budget have spent on visual and audio media. With the persuasive power of advertising message, marketers have assumed the consumers would form favorable attitude and therefore purchase intention toward the advertised brands. However, the effect of promotion should also be recognized. A fair proportion of advertising budget should be allocated to the promotion effort. It may become important to recognize that behavioral change is as important as attitude change. Through various promotional strategies at the point-of-sale, consumer intention could be changed without the change of their attitude. A in-store coupon, a point-of-sale demonstration and a well trained sales staff would have changed consumer behavioral intention. As a consequence of the effect of actual usage of the brand by the consumer could generate favorable attitude for the brand and thus may prompt future repurchases.

Table 1: Instantaneous Behavior and Discrepancy for Benchmark Trials

A. For all Choices

Trials	I=B	I≠B	Prob
1	93.6%	6.4%	.25
4	91.5%	8.5%	.12
9	85.1%	14.9%	.10
12	95.7%	4.3%	.50

B. For Pepsi Only

Trials	I=B	I≠B	Postpone	Total
1	12(80%)	3(20%)	0	15
4	9(100%)	0	0	9
9	8(61.5%)	3(23.1%)	2(15.4%)	13
12	10(100%)	0	0	10

Table 2: Instantaneous Behavior and Discrepancy for Price Effect

A. For all Choices

	I=B	I≠B	Prob
1. Increase Price for Pepsi	91.5%	8.5%	.12
2. Decrease Price for Pepsi	74.5%	25.5%	.00
3. Decrease Price for RC Cola	74.5%	25.5%	.00

B. For Pepsi Only

	I=B	I≠B	Postpone	Total
1. Increase Price for Pepsi	6(60%)	4(40%)	0	10
2. Decrease Price for Pepsi	9(75%)	3(25%)	0	12
3. Decrease Price for RC Cola	6(66.7%)	3(33.3%)	0	9

Table 3: Instantaneous Behavior and Discrepancy for Availability Effect

A. For all Choices

	I=B	I≠B	Prob
1. Introduce RC Cola	85.1%	14.9%	.01
2. Withdraw Pepsi	70.2%	29.8%	.00

B. For Pepsi Only

	I=B	I≠B	Postpone	Total
1. Introduce RC Cola	11(73.3%)	2(13.3%)	2(13.3%)	15
2. Withdraw Pepsi	0	11(84.6%)	2(15.4%)	13

Table 4: Instantaneous Behavior and Discrepancy for Availability and Price Effect

A. For all Choices

	I=B	I≠B	Prob
1. Decrease Price for Pepsi and introduce RC Cola	57.4%	42.6%	.00
2. Increase Price for Pepsi and introduce RC Cola	74.5%	25.5%	.00
3. Withdraw Pepsi and Increase Price for RC Cola	76.6%	23.4%	.00

B. For Pepsi Only

	I=B	I≠B	Postpone	Total
1. Decrease Price for Pepsi and introduce RC Cola	10(76.9%)	2(15.4%)	1(7.7%)	13
2. Increase Price for Pepsi and introduce RC Cola	1(9.1%)	7(63.7%)	3(27.3%)	11
3. Withdraw Pepsi and introduce RC Cola	0	7(77.7%)	2(22.3%)	9

Table 5: Analysis of Variance for Benchmark Trials

Analysis of Variance Table

Source of Variation	Sum of Sq.	DF	Mean Sq.	Q	Prob
BETWEEN PEOPLE	7.40	46	.16		
WITHIN PEOPLE	15.00	141	.11		
BETWEEN MEASURES	.79	3	.26	7.4	.060
RESIDUAL	14.21	138	.10		
TOTAL	22.40	187	.12		

TABLE 6: ANALYSIS OF VARIANCE FOR EXPERIMENTAL TRIALS

ANALYSIS OF VARIANCE TABLE

SOURCE OF VARIATION	SUM OF SQ.	DF	MEAN SQUARE	Q	PROB.
BETWEEN PEOPLE	14.3670	46	.3123		
WITHIN PEOPLE	61.7500	329	.1877		
BETWEEN MEASURES	2.5000	7	.3571	13.3198	.0647
RESIDUAL	59.2500	322	.1840		
TOTAL	76.1170	375	.2030		

TABLE 7: ANALYSIS OF VARIANCE FOR ALL TRIALS

Analysis of Variance Table

Source of Variation	Sum of Sq.	DF	Mean Sq.	Q	Prob
BETWEEN PEOPLE	14.60	66	.32		
WITHIN PEOPLE	86.50	517	.17		
BETWEEN MEASURES	5.87	11	.54	35.10	.00
RESIDUAL	80.63	506	.16		
TOTAL	101.11	563	.18		

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