

## ABSTRACT

### THE MODERATING EFFECTS OF CONSUMER LOYALTY ON THREAT TO FREEDOM OF CHOICE AND PSYCHOLOGICAL REACTANCE

By Ryan Wright

Psychological reactance is triggered when there is a threat to a freedom of choice. The following study manipulated a situation to present both a high and a mild message threatening the participants' freedom of choice. In addition, the loyalty of the participant is thought to affect the amount of reactance felt from each threat level. I propose that a more threatening message given by an organization to a consumer can lead to stronger feelings of reactance. However, the consumers' level of loyalty will have an impact on the amount of reactance felt from the different messages. Utilizing a sample of 43 undergraduate psychology students, I found minimal support upholding my hypotheses. Specifically, the results indicated that those with high loyalty felt more reactance with the more threatening message and those with low loyalty felt more reactance in response to the mild message. The implications of the study and future directions are given at the end.

THE MODERATING EFFECTS OF CONSUMER LOYALTY ON THREAT  
TO FREEDOM OF CHOICE AND PSYCHOLOGICAL REACTANCE

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## INTRODUCTION

Psychological reactance theory states that people will react against threats to their freedom of choice, and, more generally, attempts to control their behavior by experiencing a motivational state called “reactance” (Brehm, 1966). When reactance is triggered, the individual becomes motivated to cope with those threats by restoring their original freedom. Research has shown that reactance can occur in response to promotional or persuasion attempts, feeling obligated to return a favor, wanting something that is no longer available to them, and censorship (Brehm, 1966; Brehm & Brehm, 1981; Miron & Brehm, 2006).

### Types of Threats

Brehm (1966) describes two different types of threats; interpersonal and impersonal (see also Clee & Wicklund, 1980). The difference between the two is that interpersonal threats are influences from other people while impersonal threats are more of barriers, such as a discontinuation of a product or a deadline to make a decision.

An *interpersonal* threat takes place when, for instance, two friends are looking to go out to eat and one of them suggests that they should eat at a certain restaurant because of a review in the local newspaper. According to psychological reactance theory, reactance would be aroused in the other friend because now he or she feels obligated to go to a certain restaurant, thus threatening the freedom to choose a different restaurant. Interpersonal threats can be viewed as social influences; therefore, when a person is free

to choose between two alternatives, any attempt by another person or group of people to influence their choice could be perceived as a threat to his or her freedom. These social influence attempts may frequently produce two opposing forces: toward compliance, where the individual accepts the suggestion or, against compliance, where the individual moves to reestablish their freedom (Brehm & Sensenig, 1966).

When individuals react by performing the opposite action of what is intended or favoring the option that was eliminated, a boomerang effect occurs. The magnitude of reactance, however, may be modified as a function of the type of relationship that exists between the freedom-threatening agent and the target person. Past research has shown that relationships may heighten reactance arousal (Brehm & Mann, 1975). When a person has a strong relationship with another, they are committed to each other. This commitment, along with the perception of threat from influence pressure, suggests that even small amounts of influence can arouse a substantial amount of reactance. However, this commitment also gives way to a greater pressure for positive influence due to the need to be liked and to get along with the other person. Therefore, it is important to realize that the interpersonal relationship strength between two individuals or groups of people can enhance psychological reactance. Brehm and Mann (1975) support this claim through their findings that the greater the attraction to other group members there is and the less important the threatened freedom, the greater is the group influence on the participants' opinions. However, when the importance of freedom was high, high attraction to the group enhanced reactance in the pressured group member.

Another form of interpersonal threat was examined by Brehm and Cole (1966). They predicted that a favor could reduce an individual's freedom and can subsequently arouse psychological reactance. This study found that when the importance of being free in regard to the individual giving the favor was relatively low, the favor increased the tendency to perform the return favor. However, where the importance of being free was relatively great, the favor created reactance and subsequently decreased participants' tendency to perform the return favor.

Another type of threat is *impersonal*. Impersonal threats can be thought of as barriers to one's freedom of choice, such as product shortages, discontinuations, long waiting lines, and physical distances (Clee & Wicklund, 1980). An example of an impersonal threat is when an individual has the option to select from three classes, each class being the exact same but with different professors. After contemplating for too long, one of the classes fills up which causes reactance to be instigated in the individual. He or she begins to want the class that is no longer available and ends up evaluating that class as the best of the three. Psychological reactance theory states that it is not the class the individual longs for but rather it is the freedom to choose that class that is missed. As with personal threats, impersonal threats to freedom increase the desire of the eliminated choice and decrease the attractiveness of the imposed choice. The example given here is of scarcity. Wanting the class that is no longer available can be interpreted as the desire to reestablish the freedom to choose that class (Brehm, 1966; Clee & Wicklund, 1980). One way of reducing reactance is by direct social restoration. In order to restore the freedom that is sought, an outside person would act in such a way as to remove the threat.

This person may or may not be under the same threat to their freedom (Worchel & Brehm, 1981). For the example previously given, one possibility for the restoration of freedom would be for the professor to allow the student enrollment into that specific class in spite of the class being full. As such, successful restoration of freedom assumes that the person who intervenes has some power over the behavioral freedom in question (Worchel & Brehm, 1971).

Indeed, two studies conducted by Worchel and Brehm (1971) have shown that restoration of freedom reduces the increase in desirability of the eliminated option which results from a threat to freedom. The first study demonstrated the effectiveness of direct restoration by another person; the second study demonstrated the effectiveness of restoration by social implication. Social implication is when someone acts as to imply that the freedom which has been threatened has been restored. This shows that threat to the freedom of choice arouses reactance and an increase in the desirability of that alternative. Also, the increase in desirability due to reactance will be reduced to the extent that the threatened freedom is directly or indirectly restored by another person.

### Factors Influencing Psychological Reactance

In order for psychological reactance to take place, there first must be two separate factors present (Brehm & Brehm, 1981). The first is that there must be an *expectation of freedom of choice*. If people know that they are not in a position where they will be able to choose between several different options, then, when a certain option is taken away, no reactance will be aroused. The second factor is the *importance of freedom*. The

importance of freedom can stem from how much an individual needs something, the person's knowledge and/or competence of the choices, and the similarities in the choices (the greater the similarities, the lower the reactance) (Clee & Wicklund, 1980).

Therefore, if both of these factors are present, the more likely psychological reactance will be aroused when an individual's freedom is threatened (Brehm, 1966).

Aside from these two necessary conditions, other factors may moderate the effect of a threat on psychological reactance arousal. For instance, a person's reference group and their similarity to the influencing force can both be considered factors that influence the importance of a freedom and the magnitude of the resulting reactance response. In regards to a person's reference group, individuals may only believe they have a freedom by way of social comparison with others. An example of this would be the old saying of "keeping up with the Jones's." This cliché references the attempt to bring one's lifestyle into close comparison with one or more significant reference groups (Festinger, 1954). Stouffer, Suchman, Devinney, Star, and Williams (1949) coined the concept of "relative" deprivation, according to which a person would most likely feel deprived of a behavior only to the extent that relevant others possessed more freedom to perform that same behavior. Therefore, it would be safe to assume, according to this theory, that people would go through life expecting no freedom of choice in particular domains as long as relevant others possessed no greater freedom in those same areas. Not only do reference groups seem to be a determinant of the level of expected freedom, but they also can determine whether much reactance will be aroused.

Second, an individual's level of similarity with the influencing force can have a large effect on the reactance aroused and the likelihood to comply (Silvia, 2005). Silvia (2005) posits that, in reactance, there are two forces that are in conflict with each other, the force to comply and the force to resist. When the individual is similar in terms of his or her values, birthday, or name, the resulting effect could be an increase in the positive force toward compliance. This may be due to social/organizational identification where the individual can identify on some level with another person or group and therefore feels a sense of belonging to that person/group. Similarity can also reduce the negative force toward resistance by interpreting the threat in the message in a positive manner. Thus, if people see the similar person's message or method of persuasion as being less threatening, then there is less reactance, which in turn, could foster compliance even in the presence of threats to freedom. Also, if an individual experiences less reactance from a threat because of the high similarities between themselves and the influencing force, then the threat is also less likely to affect them if their level of loyalty is strong. Their level of loyalty would be strengthened based on the level of similarities.

### Measuring Reactance

This study utilizes cell phone providers in order to test for reactance. Each individual who participated in the study received a message from their provider that threatened their freedom of choice. The way that they responded to the threat then indicated how much reactance was aroused. There are different aspects of reactance that need to be accounted for. I examined three specific variables that measured different

areas of reactance: a frustration variable, attribution variable, and an attractiveness of the imposed phone variable. The frustration variable measured the amount of frustration felt with their service provider about the shipping error, which eliminated one of the phones in which they could test by imposing a phone (their preferred one) to test. The attribution variable measured how understanding the participant was or how much they made excuses for their service provider regarding the error. The attractiveness variable measured how much the participant was attracted to the eliminated phone (versus the imposed phone) after receiving the message from the service provider regarding the choice of which phone to test.

Harvey (2007) found that both attributions and emotions, more specifically frustration, are linked to the justification of negative or unethical behavior. This study states that the more frustrated an individual is, the less likely they are to be understandable or able to justify the negative behavior. Reactance, therefore, could be measured by the amount of frustration felt and to the degree that excuses are made for their cell phone company (Brehm & Brehm, 1981). This logic suggests that the less understandable they viewed the shipping error and the more frustrated they felt, the more reactance would be experienced.

The attractiveness to the eliminated phone variable measures reactance by comparing the degree of difference between how attractive they viewed the imposed phone (their preferred one) and how attractive the eliminated phone (unselected phone) was. The less they like the imposed phone and the more they like the eliminated phone after the manipulation, the higher amount of reactance they felt. Thus, reactance was

measured by computing a difference score between the attractiveness ratings of the two phones. As a reminder, the preferred phone was always imposed, be it blue or red. When the blue phone was imposed, the attractiveness index was created by subtracting the attractiveness of the red phone from the blue phone. When the red phone was imposed, the attractiveness index was created by subtracting the attractiveness of the blue phone from the red phone. Thus, the attractiveness index always assesses the attractiveness of the imposed phone over the eliminated phone; therefore lower scores on this index reflect stronger reactance (preference for the eliminated phone over the imposed phone). This strategy of measuring reactance via assessing the relative attractiveness of the imposed versus the eliminated option has been the typical method of measuring reactance in reactance literature (Brehm & Rozen, 1971; Brehm & Sensenig, 1966; Hammock & Brehm, 1966; Sensenig & Brehm, 1968).

### Loyalty

Given the evidence that threats to an individual's freedom of choice affect how individuals feel (Brehm, 1966), it would be logical to assume that an individual's level of psychological reactance would be directly related to the strength of the threat presented. Simply put, the level of psychological reactance experienced is directly due to the level of the threat to freedom of choice during the decision making process. Moreover, the consumers' level of loyalty towards the company should moderate their reactions to the company's threats to their freedoms. However, very little research has been conducted

on the effect of the loyalty of the consumer on the magnitude of the reactance experienced in response to a freedom-threatening organization.

Bendapudi and Berry (1997) distinguish between two types of relationship commitment ideas that suggest consumer loyalty, affective commitment and calculative/continuance commitment. *Affective commitment* is a more emotional factor related to the degree to which a consumer identifies and is personally involved with a company and the resulting degree of trust and commitment. *Calculative or continuance commitment* is a more logical and rational, economic-based dependence on product benefits that is due to a lack of choice or switching costs that make it difficult to change suppliers (Johnson, Herrmann, & Huber, 2006). Both of these two types of commitment create a “stickiness” that keeps customers loyal to a brand or company even when satisfaction with that brand or company may be low (Gustafsson, Johnson, & Roos, 2005).

The loyalty of the consumer can be earned throughout time or can be sought through loyalty programs. Loyalty programs aim to increase consumer loyalty through the rewarding of customers for doing business with the organization. It is estimated that more than half of all U.S. adults are enrolled in at least one loyalty program (Kivetz & Simonson, 2003). Loyalty programs can enhance the perceived value of the organization and establish a solid relationship commitment. They enhance the perceived value of the organization by rewarding the consumer with reward points at the time of purchase. While these reward points appear somewhat meaningless at the time, they possess a psychological meaning that tells the customers that the organization is appreciative and

gives personal recognition. This gives the consumer a sense of being important which can enhance the consumers' overall sense of well-being and solidify their relationship with the organization. The overall goal of these types of programs is to gain a favorable attitude from the consumer that will increase their intended repeat business.

There is much more to a consumer's loyalty than a program put in place to attain and maintain clientele. Alhabeeb (2007) states that the underlying assumption has been that product quality and its service characteristics would naturally attract consumers, bringing about their satisfaction and gaining their loyalty. However, recent research has shown that the relationship between the organization and the consumer plays a role in consumer loyalty. A large portion of that relationship is based upon the consumer's trust in the organization. According to Sirdeshmukh, Singh, and Sabol (2002), trust involves "the expectations held by the consumer that the service provider is dependable and can be relied on to deliver on its promises" (p.17). If a service provider of any kind displays a lack of trustworthiness in their frontline employees or their management practices and policies then the consumer will display a lack of trust and a decreased level of loyalty.

A different perspective looks at two different aspects of loyalty. The first is the *behavioral*, or the purchasing aspect which is a result of repeated purchases. The second is the *attitudinal* aspect which represents a dispositional commitment to a brand and causes the consumer to have a special affect towards it. Oliver (1999) takes these two aspects into account by defining loyalty as "a deeply held commitment to re-buy a preferred product consistently in the future, thereby causing repetitive same-brand or same brand-set purchasing, despite any situational influences and marketing efforts that

may have the potential to cause switching behavior” (p.34). The effects of these two aspects of loyalty were tested empirically by Chaudhuri and Holbrook (2001) who found that consumer trust led to both types of loyalty. More specifically, they found that behavioral loyalty led to repeated purchases and a greater foothold in the market and attitudinal loyalty led to a higher level of commitment to the product/organization allowing a higher price.

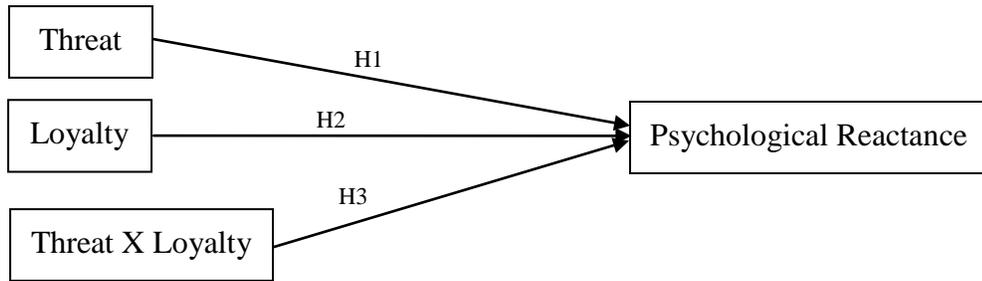
Thus, given that the loyalty of a consumer can lead to a stronger level of commitment to an organization, it would also be logical to assume that it would have a strong influence effect on psychological reactance. Also, a threat to a consumer’s freedom carried out by a company can lead to a consumer experiencing psychological reactance. However, if the consumer has a high degree of loyalty toward the company, then the amount of psychological reactance aroused would be diminished despite what type of threat is presented.

As shown in Figure 1, I advance the following hypotheses:

*Hypothesis 1:* Participants in the high threat condition will experience more reactance than in the low threat condition.

*Hypothesis 2:* Loyalty to provider will be negatively related to psychological reactance.

*Hypothesis 3:* The effect of the threat to freedom of choice on psychological reactance will be moderated by an individual’s level of loyalty. Specifically, low loyalty will experience more reactance under the high threat condition than under the low threat condition.



*Figure 1.* The predicted effect of loyalty x threat on psychological reactance

## METHOD

### Participants

A total of 43 undergraduate students, 23 females and 20 males, participated in this study for course credit in their psychology courses at the University of Wisconsin Oshkosh. There were 29 participants who reported having U.S. Cellular as their primary cell phone provider, while only 14 had AT&T. Participants were recruited through the psychology research site, Sona-Systems.

### Design

A 2 x 2 quasi-experimental (person-by-treatment) design was employed to test the effect of loyalty to cell phone provider on reactance in response to low and high threats to freedom of choice. Loyalty to the cell phone provider was assessed before the study, and the threat to freedom of choice was manipulated.

### Materials and Procedure

Participants signed up for this study through the University of Wisconsin Oshkosh research web site: <http://uwosh.sona-systems.com>. Students were asked if they had a cell phone provider and were given 7 choices to check one from: AT&T, T-Mobile, Sprint, U.S. Cellular, Verizon, other, or I do not have a cell phone. Those that reported having a cell phone provider were asked a series of questions that determined their level of loyalty toward their cell phone provider. Students who answered affirmatively to the first

question were eligible for participating in the study. The companies AT&T and U.S. Cellular were a priori selected due to the largest sample sizes per organization. The participants who checked either of those particular companies would then be eligible for the study. A loyalty index was then created by averaging out participants' answers on the 11 questions.

The study took place in one of the Department of Psychology research rooms and was no longer than 30 minutes in duration. After signing the consent form, participants were given a general instruction form that explained the goal of the study. This form included the cover story of the study. Specifically, participants were told that the marketing department of their cell phone provider, either AT&T or U.S. Cellular, was interested in their opinions on the attractiveness of their phones. Next, participants received the threat manipulation describing the situation and asking for their opinions. One of the independent variables (threat to freedom) was manipulated by the suggestion of a certain phone. The level of threat varied however based on the scenario given. The two scenarios presented the subject with either a high or low threat to their freedom of choice in order to arouse psychological reactance. After that, a questionnaire measured the participants' evaluation of the two cell phones, their desire to choose a particular cell phone, and their attitudes toward the cell phone provider. (See Appendix C for a copy of the forms and questionnaires.)

Upon completion of the study, participants were debriefed. The data was entered into an SPSS file by the principal investigator. The names of participants are not associated with their responses, as the person running the study attached the debriefing

form to the envelope containing the completed questionnaire and assigned a number to each participant. The consent forms were kept separately in a safe place. This way, participants' responses were anonymous and confidential.

### Loyalty

Preceding the study there were 11 questions intended to measure the participants' consumer loyalty toward their cell phone company. It also allowed some type of separation between the measure of loyalty and the main study in order to minimize social desirability in the responses. It was felt that if the loyalty questionnaire was included with the primary survey, participants would be able to guess the purpose of the study, thus skewing the results.

The loyalty indexes looked at in the study focused on the affective, continuance, and behavioral aspects of loyalty. Again, affective commitment looks at the emotional area of loyalty. Continuance looks at the logical or rational aspects of loyalty, such as sticking with a company because the cost of switching would be too great. Behavioral loyalty looks at the actual repeated actions of the individual toward a specific product or organization. Questions such as: "I have feelings of trust toward the company" measured affective loyalty, "It pays economically to be a customer of the company" measured continuance loyalty, and "I want to continue my relationship with the cell phone provider" measured behavioral loyalty.

### Reactance Manipulation

Psychological reactance was manipulated by having participants expect to make a choice between two phones to inspect later on in the session. They then became aware that their least preferred phone has become unavailable and that consequently they *have* to choose their preferred phone. Specifically, participants were told that there was a surplus of their most preferred phone. It was suggested to all participants that they select the other phone option (their most preferred phone). However, the participants in the *low threat* condition received a mild message,

“Due to a shipping error, more blue phones are available to test for this week’s sessions. *Because of this, the U.S. Cellular representative asked you to please consider selecting the blue phone (red phone) to test and not the red phone (blue phone).* Turn the page to complete a short questionnaire. When you are done, the research assistant will come back and ask you which phone you want to test and thus choose for the raffle.”

The participants in the *high threat* condition will get a strong, pushy message,

“Due to a shipping error, more blue phones are available to test for this week’s sessions. *Because of this, the U.S. Cellular representative strongly suggested that you select the blue phone (red phone) to test and not the red phone (blue phone).* Turn the page to complete a short questionnaire. When you are done, the research assistant will come back and ask you which phone you want to test and thus choose for the raffle.”

The most preferred phone was imposed by eliminating the least preferred while imposing the most attractive option at the same time because research has shown that this procedure leads to a cleaner instigation of reactance. That is, when the most preferred

alternative is eliminated, one no longer knows if reactance, anger or both have been instigated (Worchel & Brehm, 1970). To impose the most attractive option, the experimenter looked at the participants' initial ratings of the two phones and selected a form that eliminates the phone that the participants had rated as least attractive. This manipulation of psychological reactance provided the necessary means to test hypothesis 1, which states that there will be a significant interaction between threat level and loyalty on psychological reactance. Based on prior research and theory (Brehm, 1966; Brehm & Sensenig, 1968), participants in the low loyalty condition will experience more reactance in the high threat condition than in the low threat condition. However, high loyalty participants are expected to feel low reactance in both conditions, as their level of loyalty will buffer the effect of threat on reactance.

### Data Analysis

Both a hierarchical moderated multiple regression and a 2x2 multivariate general linear analysis were conducted in order to test the interactional effects of the threat level and loyalty on psychological reactance. Next, the main effects were examined to test hypotheses 1 and 2 in order to determine the significance of the independent variables on the dependent variable. Then, the simple effects for interaction were computed to test hypothesis 3 which tests if loyalty significantly influenced the relationship between threat level and psychological reactance.

## RESULTS

Each of the three aspects of loyalty were measured through 11 pre-screening questions in which each participant partook in before arriving to the study. The indices were formed by conceptually looking at what each item was measuring. Affective loyalty had an alpha of .85, behavioral loyalty had an alpha of .96, and continuance loyalty had an alpha of .67. Since the behavioral index was the only factor that revealed significant effects, the other two indices will not be included in further analysis. This is consistent with past research, suggesting that loyalty is less abstract when measuring the actual repeated behaviors of the consumer compared to affective or economic based loyalty.

### Regression Analyses

Three separate hierarchical moderated multiple regression analyses were conducted to analyze the interaction effects of threat and loyalty on the different components of reactance. The color of the imposed phone and the pretest overall attractiveness of each phone were controlled for in order to predict a cleaner measure of reactance. The rationale for controlling for the color of the imposed phone was to ensure that any differences between the red phone and the blue phone (which were not significantly different from each other in terms of their initial attractiveness,  $t(34) = -1.04, p = .28$ ) did not differently affect the measure of reactance. The overall attractiveness variable was controlled for because of the individual differences/personal

preference of the colors and of the types of phones. The loyalty variable was then centered by its mean. Doing so gives meaning to the effects of the individual predictors at the mean of the sample, and gives meaning to the average effects of each individual predictor across the range of the other variables. It also eliminates non-essential multicollinearity between first-order predictors and predictors that carry their interaction with other predictors (Cohen, Cohen, West, & Aiken, 2003).

The first regression analysis on the dependent variable, *frustration*, indicated a significant effect of threat on how frustrated the individual felt from the shipping error,  $\beta = -.36, p = .05$ . This indicates that, paradoxically, those in the lower threat group tended to feel more reactance in response to the shipping error. All other effects were found to be non-significant (See table 1 for betas and p-values).

Table 1

*Regression Results: Frustration*

	Frustration			
	Step 1		Step 2	
Predictor Variables	$\beta$	$sr^2$	$\beta$	$sr^2$
Like Red Phone	-.01	.00	-.02	.00
Like Blue Phone	-.09	.00	-.11	.01
Blue Overall Attractiveness	-.06	.00	.10	.01
Red Overall Attractiveness	.38	.10	.40	.11
Threat	-.35*	.13	-.36*	.14
Loyalty	-.13	.02	-.52	.03
Moderator				
Loyalty x Threat			.41	.02
Overall F	2.17		1.93	
Change R <sup>2</sup>			.01	
Overall R <sup>2</sup>	.28		.29	

Note. \* $p < .05$

The second regression analysis on the dependent variable, *attribution for the elimination of the less attractive phone*, found a marginally significant effect of loyalty on how understandable the shipping error was,  $\beta = .73, p = .07$ . This indicates that the more loyal an individual was toward their cell phone provider, the more likely they were to find some rationale that justified the shipping error and therefore the threat to their freedom of choice. All other effects were found to be non-significant (See table 2 for betas and p-values).

Table 2

*Regression Results: Attribution*

	Frustration			
	Step 1		Step 2	
Predictor Variables	$\beta$	$sr^2$	$\beta$	$sr^2$
Like Red Phone	-.26	.03	-.24	.03
Like Blue Phone	-.10	.01	-.06	.00
Blue Overall Attractiveness	.17	.02	.11	.01
Red Overall Attractiveness	.09	.01	.06	.00
Threat	-.10	.01	-.10	.01
Loyalty	.13	.02	.73	.05
Moderator				
Loyalty x Threat			-.63	.03
Overall F	.51		.60	
Change R <sup>2</sup>			.05	
Overall R <sup>2</sup>	.29		.34	

The third regression analysis on the *imposed phone attractiveness* found no significant effects (See table 3 for betas and p-values). All three regression analyses found only one significant main effect and no interactional effects of the loyalty of the participant and the threat level with any of the psychological reactance variables. This data suggests that the results are inconsistent with and do not support the hypotheses. This may be due to the small sample size or the hypotheses themselves could be incorrect.

Table 3

*Regression Results: Attractiveness*

	Frustration			
	Step 1		Step 2	
Predictor Variables	$\beta$	$sr^2$	$\beta$	$sr^2$
Like Red Phone	.14	.03	.16	.01
Like Blue Phone	.00	.00	.02	.00
Blue Overall Attractiveness	-.22	.02	-.25	.03
Red Overall Attractiveness	-.17	.02	-.19	.02
Threat	.02	.00	.02	.00
Loyalty	.14	.02	.55	.03
Moderator				
Loyalty x Threat			-.44	.02
Overall F	.43		.43	
Change R <sup>2</sup>			.01	
Overall R <sup>2</sup>	.09		.10	

## General Linear Analysis

In this study, the continuous loyalty variable indicated that most everybody in the study was fairly loyal to their cell phone provider (c. 5 on a 6-point scale). This makes the results of the analysis difficult to interpret in terms of viewing the participants' behavior as due to more or less loyalty to their provider. Therefore, loyalty was split at its median value. This provided clear high vs. low loyalty groups, eliminated any type of contamination of error, and simplified the interpretation of the data. There is a considerable amount of methodological literature examining and demonstrating negative consequences of dichotomization that strongly favors the use of regression methods on

undichotomized variables. Shentu and Xie (2007) found that the main reason for this is that dichotomization of continuous observations causes a loss of information in statistical analysis, and this is especially true in the standard case of no contaminations. However, there is also the other side of the argument when the observations are contaminated. In the presence of unknown additive contamination errors, which are typically *assumed* to be zero in regression analysis, dichotomization of a variable can sometimes produce a better result in statistical analysis (Shentu & Xie, 2007).

For this reason, a 2x2 multivariate general linear analysis was performed in order to further test the effects of the participant's loyalty, and the varying threat level on the participant on the different facets of reactance while controlling for the red/blue imposed phone color and attractiveness of each phone. For the analysis, the variable of loyalty was dichotomized using a median split approach ( $Mdn = 5$ ).

### Frustration

The analysis of the frustration measure of reactance indicated that there were no significant main effects with loyalty or threat. The interactional effect was also found to be non-significant (all  $F$ 's  $< 2.52$ ,  $p > .12$ ). Because the interaction effect was not significant, no post hoc analysis was conducted to test the simple effects. See Figure 2 for interaction graph on frustration

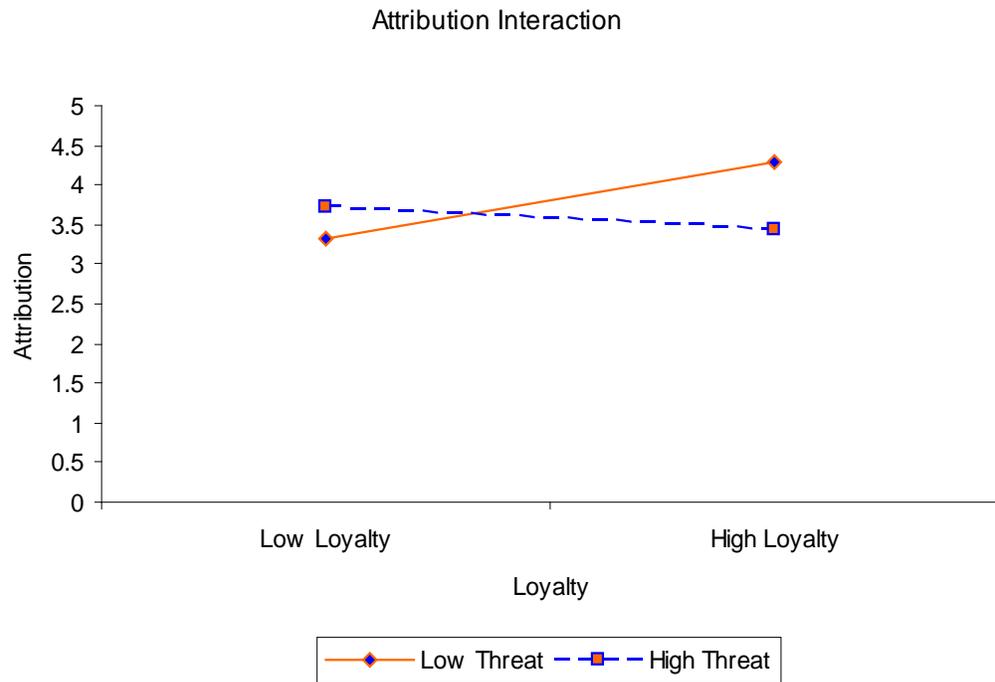


*Figure 2.* Interaction of loyalty and threat on frustration

#### Attribution

The analysis of the attribution variable indicated that there were no significant main effects for threat or loyalty; however there was marginal significance for the interaction effect,  $F(1, 25) = 3.43, p = .07$ . The post hoc analysis found that those in the high loyalty/high threat group ( $M = 3.45$ ) experienced more reactance than the high loyalty/low threat group ( $M = 4.29$ ). The low loyalty/low threat group ( $M = 3.32$ ) experienced more reactance than the high loyalty/low threat group ( $M = 3.73$ ). This suggests that those with high loyalty showed significantly less understanding concerning the shipping error when presented with a high threat than a low threat,  $t(25) = 2.31, p = .02$ . Those with low loyalty also experienced a significantly less amount of understanding

than when presented with a less threatening message,  $t(25) = 3.07, p = .00$ . See figure 3 for interaction graph of attribution.

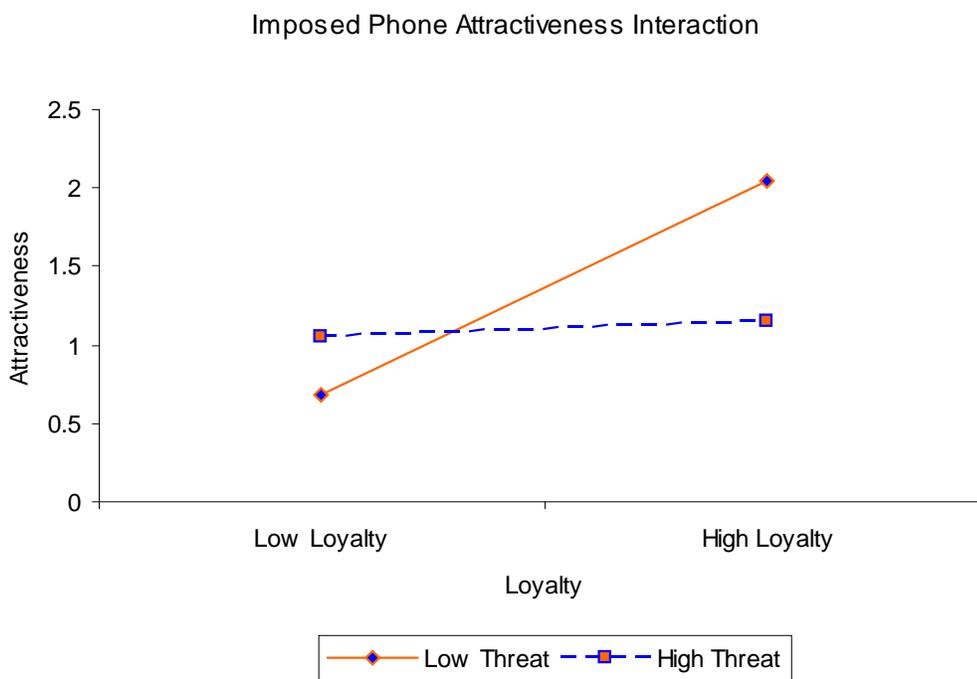


*Figure 3.* Interaction of loyalty and threat on attribution

#### Attractiveness of the imposed cell phone

The analysis indicated that only loyalty had a significant main effect on the dependent variable of attractiveness of the imposed phone,  $F(1, 25) = 5.28, p = .03$ . However, there was also a significant interactional effect between threat and loyalty,  $F(1, 25) = 4.35, p < .04$ . A post hoc analysis was then conducted to determine the specific area which was accounting for the variance in the interaction. When controlling for the color of the imposed phone and the overall attractiveness of the phone, the analysis of the attractiveness variable indicated that those in the high loyalty/high threat group ( $M =$

1.15) experienced more reactance than those in the high loyalty/low threat group ( $M = 2.05$ ). Those in the low loyalty/low threat group ( $M = .68$ ) experienced more reactance than the high loyalty/low threat group ( $M = 2.05$ ). This suggests that those in the high loyalty group experienced a significantly greater amount of reactance when presented with a high threat as opposed to a low threat  $t(25) = 2.25, p = .03$ . Also, those presented with a low threat experienced significantly more reactance when they were less loyal to their cell phone provider than when they were relatively more loyal to the company,  $t(25) = 3.42, p = .00$ . See Figure 4 for interaction graph of imposed phone attractiveness.



*Figure 4.* Interaction of loyalty and threat on imposed phone attractiveness

With regard to hypothesis 1, the predicted effect was not found for threat on any of the three psychological reactance measures. Thus, hypothesis 1 must be rejected. With

regard to hypothesis 2, the predicted effect for loyalty on psychological reactance was found on only one reactance variable, attractiveness to the imposed phone. These results suggest partial support for hypothesis 2. In regard to hypothesis 3, the predicted interaction effect was found for 2 out of 3 measures, however the effect was in the opposite direction. Thus, hypothesis 3 was not supported. See table 4 for GLM means.

Table 4

*Means for Reactance Variables by Threat and Loyalty*

Dependent Variable	Lo Th/Lo Lo	Lo Th/Hi Lo	Hi Th/Lo Lo	Hi Th/Hi Lo.
Frustration	1.22 (.54) <sub>a</sub>	1.00 (.52) <sub>ab</sub>	0.75 (.75) <sub>b</sub>	0.54 (.48) <sub>ab</sub>
Attribution	3.32 (.44) <sub>a</sub>	4.29 (.42) <sub>b</sub>	3.73 (.41) <sub>ab</sub>	3.45 (.39) <sub>a</sub>
Attractiveness of imposed cell phone	0.68 (.34) <sub>a</sub>	2.05 (.32) <sub>b</sub>	1.05 (.31) <sub>ab</sub>	1.15 (.30) <sub>a</sub>

Note. Standard Errors in parentheses and italicized. Lo. Th – Low Threat, Lo. Lo – Low Loyalty, Hi. Th – High Threat, Hi. Lo – High Loyalty; Row means with different subscripts are significantly different from each other at  $p < .05$ .

## DISCUSSION

It was hypothesized that both loyalty and threat would have an effect on the amount of psychological reactance felt (Hypotheses 1 and 2). It was also hypothesized that those who are less loyal to their cell phone company would experience more psychological reactance in the high threat condition than in the low threat condition and there would be no difference between the low threat condition and the high threat condition with those with high loyalty (Hypothesis 3). The results of the study found little in support of these hypotheses. Instead, the results indicated something much different than I hypothesized. Threat did not have a main effect on any of the dependent variables while loyalty only had an effect on the attractiveness of the imposed phone. Also, those who indicated that they were more loyal to their provider experienced more reactance when presented with a higher level of threat than when presented with a low-threat message. Those who indicated that they were less loyal to the company experienced more reactance when they were presented with a mild threat message than with a high-threat message.

At the beginning of the study I anticipated that the more loyal the individual, the less the threat would affect them. However, these results of the high loyalty/high threat group experiencing reactance suggest that those in the high loyalty group were not psychologically immune to the strength or the tone of the message, as they experienced more reactance in the high threat condition than in the low threat condition. Thus, they

viewed the high threat message as a definite threat to their freedom to choose between the red or blue phone.

I also anticipated that those in the low loyalty group would experience more reactance in response to the stronger message (vs. milder message). However, I found that the low loyalty experienced more reactance in response to the milder message. This suggests that the lower loyalty of the participant may have caused a sort of apathy toward the choice of the phone. This feeling of apathy may have then lead to the individual preferring to be told exactly which phone to choose (which may explain why they complied and went along with the stronger message). When they were then presented with a weak message, they experienced reactance due to the fact that they might have realized that they have a choice (“please consider selecting X”), aspect that might not have been made clear by the strong message (“we strongly suggest you select X).

### Implications for Practice

The reactance theory analysis employed here can be extended to other forms of possible threats to the freedom of choice. It may be expected, for example, that the threat imposed here through the reduction of the choice of a cell phone for the respective cell phone providers did not capture the entire realm of possible threats in the given situation. The threat could have stemmed from unaccounted factors.

The loyalty of the participant did significantly moderate the effect of threat on the reactance, as evidenced by the significant interactions of loyalty and threat on two of the dependent variables (attractiveness and threat attribution). This suggests that, even

though our hypotheses were not fully supported, loyalty does play a significant role in the relationship between the given threat and the feeling of psychological reactance. Those who are extremely loyal to a certain organization may greatly dislike it when the organization attempts to persuade them with the use of more coercive messages. They may feel that they deserve better treatment for the amount of time, money, effort, and commitment they have sacrificed for the organization (Lind & Tyler, 1988; Greenberg, 1993). This theory is also supported by Chiu and Peng (2008) findings concerning the breach of psychological contracts. A psychological contract is the mutual perception between two people/groups that defines their relationship. They found that a breach of this contract causes deviance in the individual. In the case of this study, the deviance would be related to the feelings of reactance when their psychological contract with their cell phone provider is breached.

This reciprocal relationship may also stand true for the less loyal individuals. These consumers have not invested as much of their personal resources into the organization and may be much less susceptible to the strength of the message. They may not want to put the time or effort into the decision making process because it does not much matter to them. They may prefer to be simply told what to do. Also, as the data suggest making salient to the low loyalty people that they may have a choice, as it might have been the case in the low loyalty condition (“please consider selecting X”) may inadvertently arouse reactance.

### Limitations

The conclusions found here offer some new and interesting data; however, there are some inherent limitations to the study. First and foremost, due to both time and sample constrictions, the sample size was limited. The results found may be substantially improved with a greater sample size.

In addition, the threat used to induce feelings of reactance could have been implemented differently. Consumers may not feel reactance when they do not know that they have a freedom of choice. As mentioned above, the low threat message may have revealed to them that they do have that freedom to choose while the high threat message may have simply lead the individual to believe they never had the freedom of choice to begin with.

### Future Research

The loyalty index may have resulted in different results if it was measured differently. Future research should attempt to utilize a more comprehensive measure of affective and behavioral loyalty. Better measures would create more accurate indices of the loyalty of the consumer. Also, future research should look at presenting a strong message with mitigating circumstances. Here the researcher would attempt to identify if the messages strength still arouses psychological reactance in the presence of these mitigating circumstances. Another possible route could be to look at different ways of manipulating threat. Perhaps unintentional threats of freedom of choice do not arouse as

much reactance. If the person, group, or organization is not aware they are threatening someone's freedom of choice, then its effect could be lessened.

APPENDIX A

Consent Form

## CONSENT DOCUMENT

Graduate student Ryan Wright of the Department of Psychology at the University of Wisconsin Oshkosh is conducting a study that looks at people's opinions of their cell phone company and their products. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

As part of the study you will be asked to answer some questions about your opinions of some cell phones and your cell phone provider. Although participation will not directly benefit you, we believe that the information will be useful in understanding some aspects of human behavior.

We do not anticipate that the study will present any risk of physical injury or harm to your health associated with this study, other than some discomfort that you might feel answering some of the questions.

The information that you give us in the questionnaire will be recorded in anonymous form. Be assured that your name will not be associated with the research findings in any way. The information will be identified only by a code number.

We do solicit your participation but it is strictly voluntary. If you want to withdraw from the study at any time, you may do so without penalty. You will receive your research participation credit even if you decline to volunteer. The information collected from you up to that point would be destroyed if you so desire.

Once the study is completed, we would be glad to give the results to you. Do not hesitate to ask any questions about the study before, during, or after the research is complete. If you would like additional information concerning this study before or after it is complete, please feel free to contact me by phone, mail, or email:

Ryan Wright  
Department of Psychology  
UW Oshkosh  
Oshkosh, WI 54901  
734.635.6181  
Wrighr46@uwosh.edu

If you have any complaints about your treatment as a participant in this study, please call or write:

Chair, Institutional Review Board  
For Protection of Human Participants  
c/o Grants Office  
UW Oshkosh  
Oshkosh, WI 54901  
920-424-1415

I have received an explanation of the study and agree to participate. I understand that my participation in this study is strictly voluntary.

---

PRINTED NAME

SIGNATURE

DATE

This research project has been approved by the University of Wisconsin Oshkosh IRB for Protection of Human Participants for a 1-year period, valid until \_\_\_\_\_

APPENDIX B  
Pre-Screening Questions

### Pretest Questions

1. Who is your cell phone provider? (Check one option.)

- AT&T
- T-Mobile
- Sprint
- US Cellular
- Verizon
- Other
- Don't have a cell phone provider
- 

2. If you have a cell phone provider, to what extent do you plan on continuing or renewing your contract with your cell phone provider?

Not at all							Definitely
0	1	2	3	4	5	6	

3. I want to continue my relationship with the cell phone provider.

Not at all							Definitely
0	1	2	3	4	5	6	

4. The cell phone manufacturer is interested in how I use my cell phone.

Not at all							Definitely
0	1	2	3	4	5	6	

5. If the cell phone manufacturer were a person, I would like to have him or her as a friend.

Not at all							Definitely
0	1	2	3	4	5	6	

6. I give feedback about my evaluations of the cell phone regularly.

Not at all							Definitely
0	1	2	3	4	5	6	

7. I take pleasure in being a customer of the company.

Not at all						Definitely
0	1	2	3	4	5	6

8. The company is the operator that takes the best care of their customers.

Not at all						Definitely
0	1	2	3	4	5	6

9. There is a presence of reciprocity in my relationship with the company.

Not at all						Definitely
0	1	2	3	4	5	6

10. I have feelings of trust toward the company.

Not at all						Definitely
0	1	2	3	4	5	6

11. It pays off economically to be a customer of the company.

Not at all						Definitely
0	1	2	3	4	5	6

12. I would suffer economically if the relationship were broken.

Not at all						Definitely
0	1	2	3	4	5	6

## APPENDIX C

### Study Materials

### **Introduction**

We are working with the marketing department of the cell phone company **U.S. Cellular/AT&T** which would like to get students' opinions about their products. They are interested in how you feel about two of their cell phones. They would like to know your personal opinions about the attractiveness of their phones. Please keep in mind that the cell phone company will NOT receive your individual ratings of these cell phones or your personal information and will therefore not be able to associate to you any of the following information you will provide.

**You are asked to make a choice between two phones as a function of which phone you like best.** For the purposes of this study, the cell phones were provided to us by a U.S. Cellular representative for a discounted price of \$75. Once you are finished with the following questions, **you will be entered in a raffle to obtain the phone of your choosing.** Please take a look at the two cell phones on the separate page and provide us with your preference for each of these two phones, just based on an initial visual inspection of the phones. Use the scales below to state your initial preference. **Please do not make a decision yet because you will be asked to make a choice of a phone later in the session.**

So, at this time all you have to do is just rate the two phones. Later in the session, you will be asked to choose a phone to test. **Please keep in mind that, if you win the raffle, you will win the phone that you will choose to test later in the session.**

## BlackBerry Curve 8330



## BlackBerry Pearl 8130





U.S. Cellular/AT&T is interested in students' opinions of their newest cell phone devices. You were provided with pictures of the two phones. Research has previously found that people make better and more satisfying purchases of cell phones if they get to test the phones before they get them. **So, choose one phone to test and your name will be entered in a lottery drawing. If you win you'll get your CHOSEN phone.**

Due to a shipping error, more blue phones are available to test for this week's sessions. **Because of this, the U.S. Cellular representative strongly suggested/please consider that you select the blue phone (red phone) to test and not the red phone (blue phone).** Turn the page to complete a short questionnaire. When you are done, the research assistant will come back and ask you which phone you want to test and thus choose for the raffle.

## Survey

Before you are given a phone to test and choose for the raffle, please rate EACH phone on a scale of 0 to 6 on the following dimensions. We are interested on how you would rate these phones just based on their visual appearance. **Using the scale below, write down the number that best indicates the extent to which the each phone has each of the following attributes.**

0	1	2	3	4	5	6
Not At All			Somewhat			Very Much

**Blue Phone**

\_\_\_\_\_ Overall Attractiveness  
 \_\_\_\_\_ Ease of use  
 \_\_\_\_\_ Usefulness  
 \_\_\_\_\_ Visual Appeal  
 \_\_\_\_\_ Functionality (how easy is to handle)  
 \_\_\_\_\_ Dependability  
 \_\_\_\_\_ Durability

**Red Phone**

\_\_\_\_\_ Overall Attractiveness  
 \_\_\_\_\_ Ease of use  
 \_\_\_\_\_ Usefulness  
 \_\_\_\_\_ Visual Appeal  
 \_\_\_\_\_ Functionality (how easy is to handle)  
 \_\_\_\_\_ Dependability  
 \_\_\_\_\_ Durability

I like the RED cell phone... (please circle one number):

0	1	2	3	4	5	6
Not at all						Extremely

I like the BLUE cell phone... (please circle one number):

0	1	2	3	4	5	6
Not at all						Extremely

Which phone would you like to test? (Check one)

- The red phone  
 The blue phone

**Please turn the page.**

**Please answer the following questions regarding your cell phone company.**

1. If you have a cell phone provider, to what extent do you plan on continuing or renewing your contract with your cell phone provider?

Not at all							Definitely
0	1	2	3	4	5	6	

2. I want to continue my relationship with the cell phone provider.

Not at all							Definitely
0	1	2	3	4	5	6	

3. The cell phone manufacturer is interested in how I use my cell phone.

Not at all							Definitely
0	1	2	3	4	5	6	

4. If the cell phone manufacturer were a person, I would like to have him or her as a friend.

Not at all							Definitely
0	1	2	3	4	5	6	

5. I give feedback about my evaluations of the cell phone regularly.

Not at all							Definitely
0	1	2	3	4	5	6	

6. I take pleasure in being a customer of the company.

Not at all							Definitely
0	1	2	3	4	5	6	

7. The company is the operator that takes the best care of their customers.

Not at all							Definitely
0	1	2	3	4	5	6	

**Please turn the page.**

8. There is a presence of reciprocity in my relationship with the company.

Not at all							Definitely
0	1	2	3	4	5	6	

9. I have feelings of trust toward the company.

Not at all							Definitely
0	1	2	3	4	5	6	

10. It pays off economically to be a customer of the company.

Not at all							Definitely
0	1	2	3	4	5	6	

11. I would suffer economically if the relationship were broken.

Not at all							Definitely
0	1	2	3	4	5	6	

**Please turn the page.**

**Circle the number on each scale that best describes your feelings toward your CELL PHONE PROVIDER:**

Dislike	-3	-2	-1	0	1	2	3	Like
Sad	-3	-2	-1	0	1	2	3	Delighted
Unhappy	-3	-2	-1	0	1	2	3	Happy
Tense	-3	-2	-1	0	1	2	3	Calm
Bored	-3	-2	-1	0	1	2	3	Excited
Angry	-3	-2	-1	0	1	2	3	Relaxed
Disgusted	-3	-2	-1	0	1	2	3	Acceptance
Dissatisfied	-3	-2	-1	0	1	2	3	Satisfied
Uncommitted	-3	-2	-1	0	1	2	3	Committed
Negative	-3	-2	-1	0	1	2	3	Positive
Cold	-3	-2	-1	0	1	2	3	Warm
Distrusting	-3	-2	-1	0	1	2	3	Trusting
Disloyal	-3	-2	-1	0	1	2	3	Loyal

**Please turn the page.**

**Circle the number on each scale that best describes the traits or characteristics of your CELL PHONE PROVIDER:**

Useless	-3	-2	-1	0	1	2	3	Useful
Foolish	-3	-2	-1	0	1	2	3	Wise
Economically Disadvantageous	-3	-2	-1	0	1	2	3	Economically Advantageous
Unsafe	-3	-2	-1	0	1	2	3	Safe
Doesn't match my personality	-3	-2	-1	0	1	2	3	Matches my personality
Harmful	-3	-2	-1	0	1	2	3	Beneficial
Worthless	-3	-2	-1	0	1	2	3	Valuable
Uninterested in its customers	-3	-2	-1	0	1	2	3	Interested in its customers
Imperfect	-3	-2	-1	0	1	2	3	Perfect
Unhealthy	-3	-2	-1	0	1	2	3	Healthy
Unreflective of my personal lifestyle	-3	-2	-1	0	1	2	3	Reflective of my personal lifestyle
Irresponsible	-3	-2	-1	0	1	2	3	Responsible
Unfair	-3	-2	-1	0	1	2	3	Fair

**Please turn the page.**

**Please answer a few demographic questions for us.**

1. What type of cell phone do you have? \_\_\_\_\_

2. Is your cell phone more attractive than the two cell phones shown? (Circle one)

Yes No About the same

3. How long have you been with your cell phone company? (Check one)

- less than 3 months  
 3-6 months  
 6-9 months  
 9 months – 1 year  
 1 year- 2 years  
 2 years to 3 years  
 More than 3 years

4. What type of contract do you have with your cell phone provider?

- One year contract  
 Two year contract  
 No contract right now  
 Other (Please specify:) \_\_\_\_\_

5. What is your gender (Circle one): Male Female

6. How frustrated were you about the shipping error?

0	1	2	3	4	5	6
Not			Somewhat			Very
At All						Much

7. How understandable was the shipping error?

0	1	2	3	4	5	6
Not			Somewhat			Very
At All						Much

Thank you for your participation in our survey

APPENDIX D  
Debriefing Form

**Reactance Study**  
**Debriefing procedure**

Before we go on, do you have any questions? Do you mind if I take notes?

Have you participated before in other psychology studies? YES NO

So, you may be aware that participants are not always told everything about a study until it is over. Do you think that may be true about this study? YES NO

**IF they say YES: What do you think this study is about?**

We first asked you to report which color phone you liked the best. We then asked you to read a message from your cell phone provider about one of the phone being unavailable for testing. **Do you think the company's message affected how you felt toward the two phones?**  
 If yes, HOW?

We also told you that you would be given a chance to enter a lottery drawing and potentially win the cell phone that you had chosen. **Did you believe that there was going to be a lottery drawing?** YES NO

In this study, we examine whether consumer loyalty affects people's choice of a cell phone when they receive a message from their company that limits their freedom of choosing a particular phone. Everyone in this study has a cell phone provider and each was asked before the study took place some basic loyalty or commitment questions about their cell phone provider. Each person was then presented with a weak or a strong message from the company and then asked about their decision to select a certain phone.

**I want to tell you that even though this study is about your cell phone company; your cell phone company is NOT involved in this study.** We created this story to study the effect of your loyalty to your cell phone company on your reaction to different possible messages from the company. We thus needed to select a company most students feel more or less loyal or committed to. We thought that since most students have a cell phone, a cell phone company would be a good real-life example of an organization we could use in our study.

We have predicted that those who are not committed (or not particularly loyal) to their cell phone provider and who get a strong message, **supposedly** from the company, will respond rather negatively to the message and show a "boomerang effect" – that is, they will become more interested in the cell phone they were told was **not** available for them to test. Does this make sense?

I want to emphasize again that **your cell phone company is NOT involved in this study.** **We also told you that your name would be entered into a lottery drawing for you to win a cell phone. Instead, you will be entered into a lottery drawing to win \$75.** Could you please write your name on this form, read the statement, and sign it? You will be notified at the end of the Spring Interim 2009 semester whether or not you have been selected to win the money.

Do you have any questions about this study or comments that could help me do this study better?

It is important that people who come to this study don't know about what we are actually doing. If people know about the study before they come in, it is a waste of their time and ours. **Can you help us out that way—by not telling anyone about this study?** Again, I thank you very much for your help.

APPENDIX E  
Correlation Matrix

Table E-1

*Correlation Matrix*

Variable	Threat	Imposed Color	Loyalty	Frustration	Attribution	Attractiveness	Like Red Phone	Like Blue Phone
Threat	-							
Imposed Color	-.02	-						
Loyalty	.03	-.02	-					
Frustration	-.30	.16	-.20	-				
Attribution	-.06	-.06	.20	-.28	-			
Attractiveness	-.10	.02	.12	.19	.23	-		
Like Red Phone	-.14	.76**	-.26	.32*	-.22	.03	-	
Like Blue Phone	.12	-.86**	-.07	-.14	.07	-.20	-.30	-

Note. \* $p < .05$ , \*\* $p < .01$

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