Emotional Reactions to Stockouts: Predicting Satisfaction and Retaliatory Behaviors

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Stockouts are negative consumer experiences that often have detrimental effects, leading to store- or brand-switching, complaints, and negative word-of-mouth. Previous research suggests that consumer responses to stockouts are driven by reductions in decision satisfaction that emerge from the experience. In contrast, the current research demonstrates that negative discrete emotions, specifically anger and disappointment, are a natural part of the stockout experience and that these emotional responses mediate the effect of stockouts on both consumer satisfaction and punitive actions. In particular, whereas disappointment leads to lower levels of decision satisfaction, because of overall negative evaluations of the choice process driven by disconfirmation of expectations, anger results in more store switching. Notably, when accounting for these emotional reactions to stockouts, we find that decision satisfaction is itself an outcome of stockouts, as opposed to a mediator of other downstream consequences.

"Angered that her local McDonald's was out of Chicken McNuggets, a Florida woman called 911 three times to report the fast food 'emergency'…" (Associated Press, March 3, 2009)

"Consumers continue to be disappointed by retailers' inability to meet demand, both online and in-store." Bryan Nella (FierceRetail, August 10, 2015)

Stockouts are a common retail experience, with estimates suggesting 15-30 percent of supermarket items being unavailable on a typical afternoon (IHL Group 2015) and perhaps even higher in certain industries, and for certain retailers (e.g., 30.6% for Office Depot, 15.0% for Home Depot; IHL Group 2015). According to industry statistics, stockouts cause approximately $634 billion in losses for businesses each year (IHL Group 2015). Exit-interviews have shown that stockouts can result in manufacturers losing more than half of their buyers to competitors, while retailers can lose up to 14% of the buyers of the missing product (Emmelhainz et al. 1991). Given the practical importance and general prevalence of stockouts, understanding consumer responses to stockouts and the costs of product unavailability has been an area of considerable interest in marketing and supply chain management.

The particular behaviors consumers engage in following a stockout can vary considerably, impacting key players in the chain differently: from buying another brand in the same store (hurting the manufacturer, but not the retailer) or switching to another store altogether (hurting the retailer, but not the manufacturer), to long-term effects such as negative word of mouth and reduced attitudes toward the store and brand. Thus, anticipating how consumers will respond to a stockout is important to both manufacturers and retailers. Yet the majority of research into stockouts has focused on aggregate consumer responses that lead to competitive

effects (e.g., Balachander and Farquhar 1994), or on categorizing the types of responses in which consumers engage (e.g., Campo, Gijsbrechts, and Nisol 2000). Few papers have examined the psychological underpinnings of consumer responses to stockouts. Those that have point to (cognitively based) reductions in decision satisfaction as the main driver of subsequent behaviors. In contrast, we propose and demonstrate that discrete negative emotions, specifically anger and disappointment, mediate the effect of stockouts on both consumer satisfaction and punitive actions. Notably, when accounting for these emotional reactions to stockout experiences, we find that decision satisfaction is itself an outcome of stockouts, as opposed to a mediator of other downstream consequences. Below we draw on stockout and emotion research to develop our conceptual model.

STOCKOUTS: A CONSUMER PERSPECTIVE

Most stockout research in marketing has been empirical or observational in nature, highlighting the variety of consumer reactions to stockout experiences. Researchers have documented consumers switching to another product, buying the missing item from another store, deferring the purchase to a later time, or abandoning the purchase altogether, with switching (to another brand or variety) as the predominant reaction, followed by size switching (Campo, Gijsbrechts, and Nisol 2000; Corstjens and Corstjens 1995; Emmelhainz et al. 1991; Schary and Christopher 1979). Store switching and purchase deferral are less frequent, yet remain important as they involve serious costs for the retailer, and in the case of choice deferral or abandonment, the manufacturer also. Research has also examined relevant situational and product characteristics that impact such behaviors, such as the perceived risk of substitution,

brand loyalty to the out-of-stock item and store, and the urgency for the purchase (Emmelhainz et al. 1991; Schary and Christopher 1979). These studies have comprehensively classified the responses available at the time of a stockout, but they have generally taken an observational or exit-interview approach, focusing more upon *what* response may occur rather than offering insight into *why* distinct responses occur.

More recent work investigating the psychology of consumers' reactions to stockouts has focused upon reactance (Brehm 1966) and resulting dissatisfaction as a key consumer response. Fitzsimons (2000) describes a process whereby a stockout is perceived as a restriction of an individual's freedom to choose, which leads the individual to experience the motivational state of psychological reactance (Brehm 1966). The magnitude of the reaction to the stockout is related to the degree of personal commitment consumers have toward the out-of-stock option, with negative reactions increasing as personal commitment increases. The magnitude of the negative responses is assessed in two ways: behavioral responses, such as store switching, and through an evaluative response of the process of choosing, referred to as decision satisfaction, which is conceptually distinct from and a significant contributor to consumers' overall satisfaction judgments (Heitmann, Lehmann, and Herrmann 2007; Zhang and Fitzsimons 1999). Thus, recent literature focused on understanding and predicting consumer reactions to stockouts has focused on satisfaction-based processes.

We propose that stockouts also provoke responses that are *emotional* rather than simply cognitive, and we go beyond satisfaction to uniquely predict behavioral responses to stockouts. While research on satisfaction has generally been focused on the cognitive aspects of expectation formation and disconfirmation, some work has suggested a role for emotions. The earliest work to examine emotions in satisfaction judgments focused primarily on the distinction between

generally positive versus negative emotional reactions, with the former leading to higher levels of satisfaction and the latter leading to lower overall levels of satisfaction (cf., Oliver 1993; Westbrook 1987; Westbrook and Oliver 1991). More recently, building upon the discrete emotions literature, research has argued that distinct negative emotions play unique roles in the satisfaction process, particularly in predicting specific outcomes. Inman, Dyer and Jia (1997) suggested that consumer disappointment resulting from discrepancies between actual and expected performance, and regret regarding foregone alternatives both have unique effects on post-choice evaluation. Zeelenberg and Pieters (2004) further found that both disappointment and regret after a failed service encounter impact consumer dissatisfaction, as previous research would suggest, but they also showed that disappointment leads to outcomes such as complaining and spreading of negative word of mouth, while regret is directly related to switching behavior. Together, previous research posits that specific emotional responses occur prior to the overall positive-negative satisfaction evaluations, serving as proximal mediators driving both satisfaction assessments and behavioral responses, including retaliatory actions. We add to this previous literature by specifically linking stockout experiences to the discrete emotions of anger, as well as disappointment, and by examining them jointly with decision satisfaction to better understand specific consumer responses to stockout situations.

ANGER AND DISAPPOINTMENT: EMOTIONAL REACTIONS TO STOCKOUTS

What emotions might consumers be likely to experience when they encounter a stockout? We examine two likely candidates based on the phenomenology of a stockout: anger and disappointment. As the quotes at the start of the paper suggest, anger and disappointment are common responses to stockouts. Nevertheless, to confirm that these two discrete negative

emotions are an integral part of the consumer stockout experience, we ran a pilot study (full procedure and analysis available in the Web Appendix) to examine whether individuals naturally describe their stockout experiences in emotional terms. Consistent with our assertions, the results demonstrate that consumers do readily experience emotions as part of their stockout experiences, and explicitly list anger and disappointment as the most frequently and strongly felt emotions associated with stockouts.

Consistent with Brehm's (1966) conceptualization of reactance, and with the role that reactance is believed to play in response to stockouts, anger is provoked when an individual feels physically or psychologically restrained in the process of goal pursuit (Izard 1977), when such restraint is controllable, and personally directed (Frijda, Kuipers, and ter Shure 1989). Encountering an out-of-stock product may provoke anger when a consumer feels that choices have been restricted (e.g., the store is out of the part I needed), the stockout could have been avoided (e.g., GameStop should have known this new game would be popular and ordered more), or if he feels singled out and targeted for selective unavailability (e.g., why are advance ticket sales only available to club members?). Again, consistent with Brehm's (1966) theory, which suggested that reactance results in increased aggression toward the restriction's source, the behavioral tendencies arising from anger are highly antagonistic and active: a desire to strike out against the culprit (Frijda 1986). Although few papers have explicitly examined anger in consumption, one exception found that anger drives "consumer vengeance," where angry individuals sacrifice better deals in order to exact revenge on the offending company or brand (Bechwati and Morrin 2003). Choosing a suboptimal outcome in order to "get even" with a firm is the kind of behavior anger encourages, suggesting that consumers who feel anger following a stockout should engage in the response that feels most actively punitive: switching behavior.

Disappointment, on the other hand, is distinctly different from anger: it is caused by elements of the situation, seen as uncontrollable, and impersonal (van Dijk, Zeelenberg, and van der Pligt 1999). Disappointment occurs when the individual expected one (positive) outcome, but received something less than expected, simply due to chance or circumstances outside their control (Frijda 1986). Facing product unavailability could lead to feelings of disappointment if the consumer expected the store to stock the item but it didn't (e.g., I thought Walmart had everything?), or if she believes the stockout was uncontrollable or unavoidable by the store (e.g., no one could have predicted four Nor'Easters would hit the East Coast in March, leading to salt and shovel shortages). Such experiences are unlikely to provoke reactance and thus unlikely to provoke anger, because such situations are not associated with the removal of freedom. Nevertheless, even if one's freedom has not been restricted, the inability to obtain what is desired is likely to lead to a negative reaction. Because there is no clear person or cause to "blame" for disappointment, however, the behavioral tendencies associated with disappointment involve avoiding the situation or doing nothing—much more passive forms of retaliation stemming from a state of powerlessness (Zeelenberg, van Dijk, Manstead, and van der Pligt 2000).

Together, this suggests that consumers experiencing disappointment in response to stockouts should choose more passive behavioral options that allow them to cope with the disappointing choice: deferral. Additionally, we contend that consumers experiencing disappointment would also express lowered evaluations of the shopping experience, or lowered decision satisfaction, as both disappointment and satisfaction involve assessments of disconfirmed expectations leading to negative outcomes. While satisfaction and disappointment are distinct (see, e.g., Zeelenberg and Pieters 2004), with satisfaction emphasizing the cognitive evaluative aspects and disappointment the emotional appraisals, we expect the parallels in their

assessment to result in predictive relations between the two concepts. Specifically, we anticipate that disappointment will mediate the effects of stockouts on decision satisfaction because of the primacy of emotions in the assessment process: as emotions arise rapidly and often without cognitive interference (Frijda 1986), we expect that the emotional responses to expectation disconfirmation will arise first, and then influence the evaluations.

Thus, though the impact of stockouts on consumer behavior has historically been conceived as operating through decision satisfaction, we show that consumers experience disappointment and anger in response to stockouts and that these discrete emotional responses uniquely predict consumer reactions to stockout experiences. We approach stockouts through the lens of previous literature, focusing on two variables that have been identified as influencing decision satisfaction—commitment and personalization (Fitzsimons 2000). We examine the impact of these variables simultaneously on decision satisfaction, anger and disappointment, showing that when consumers are more committed to an out-of-stock option or when a stockout is seen as personally directed, they experience higher levels of both anger and disappointment, and these emotional responses predict satisfaction and specific retaliatory behaviors.

EXPERIMENT 1: HIGHER COMMITMENT AND PERSONALIZED STOCKOUT ANNOUNCEMENTS INCREASE ANGER AND STORE SWITCHING

Design and Method

Experiment 1 was a 2 (Stockout Announcement: personal, impersonal) x 2 (Commitment: high, low) between subjects design. A total of 130 individuals (60% female; age range 18-38;

average age 22) from a northeastern university participated in this and other un-related studies in exchange for a cash payment. To enhance participants' engagement, we created an interactive shopping experience where participants entered a virtual bakery, browsed displays, "spoke" with a baker, and ultimately chose a product for purchase. Each element of the scenario was shown through pictures and interactive buttons, to closely replicate a realistic shopping experience.

Participants were asked to imagine they were purchasing a dessert as a gift for the hostess of a dinner party that evening. They first read details about the shopping task, which included the commitment manipulation. In the high commitment conditions, participants read that they were shopping for a dessert that they would bring to their best friend's house, while in the low commitment condition the purchase was for their roommate to take to a friend's house. Then, participants indicated which of three desserts they would like to choose (Fitzsimons 2000): chocolate cake, carrot cake, or a fruit tart. Finally, participants in the high commitment condition wrote a short justification of why they believed their intended dessert would be the best choice, further committing them to their planned purchase (Heitmann, Lehmann, and Herrmann 2007). Participants in the low commitment condition, after indicating their preference, continued on to the shopping task.

Following the commitment manipulation, participants "walked up to," "entered," and "browsed" the bakery—all illustrated through photographs and animations. They then stepped up to the counter to look at the three dessert options and select one to purchase. In the personal announcement condition, the bakery's manager told participants that since they were not part of the bakery's loyalty club, they could not buy their preferred item, as it was the last one and reserved for "loyalty club" patrons only. In the impersonal announcement condition, the manager told them that their preferred item had sold out earlier in the day.

After choosing a dessert, participants first rated their emotional state on a 17-item scale: pleased, depressed, disappointed, satisfied, angry, excited, discontent, frustrated, upbeat, annoyed, down-hearted, delighted, disgusted, relaxed, happy, irritated, dismayed (1= not at all, 7= extremely). Then, they rated their decision satisfaction on a six-item scale: I found the process of deciding which item to purchase frustrating, several good options were available for me to choose between, I am satisfied with the experience of purchasing this item, I thought the selection was good, I would be happy to choose from the same set of items again, and I found the process of deciding which item to purchase interesting (Fitzsimons 2000). Finally, they indicated their likelihood of switching stores ("Would you return to this bakery for your next dessert purchase?" 0 = I definitely would return here again, 100 = I would never shop here again).

Results

Anger. A two-way ANOVA was run on the anger index (angry, frustrated, and irritated ($\alpha = .94$)), with personalization of the stockout announcement and commitment as predictors. There was a main effect of personalization, ($F(1, 126) = 10.642$, $p < .001$): more anger was elicited when the stockout was personal ($M = 5.56$) than impersonal ($M = 4.46$). There was no main effect of commitment, as it leads to high levels of anger across conditions, however the interaction of personalization with commitment was significant, ($F(1, 126) = 3.805$, $p < .05$): when individuals were highly committed to the out-of-stock item, there was no difference between a personal ($M = 5.61$) and an impersonal ($M = 4.76$) announcement, yet when commitment was low, a personal announcement ($M = 5.52$) elicited significantly more anger than an impersonal announcement ($M = 4.15$, $F(1, 126) = 8.212$, $p < .01$). This suggests that high commitment leads to anger, but there is a ceiling effect and personalization has no impact above

that of commitment. Yet when commitment is low, personalizing the stockout announcement also heightens feelings of anger.

Disappointment. A two-way ANOVA was run on the disappointment index (disappointed, discontent, and dismayed ($\alpha = .88$)), with personalization and commitment as predictors. As expected, there were no significant main or interactive effects of either commitment or personalization on disappointment. It is important to note that the degree of disappointment experienced ranged from 4.88-5.42, which is quite high (7-point scale).

Decision Satisfaction. An ANOVA was run on decision satisfaction ($\alpha = .92$), with personalization and commitment as predictors. There were no significant main effects, however, a significant interaction of commitment and personalization emerged, ($F(1, 126) = 6.190$, $p < .05$), although the lower order contrasts were not significant, all $p > .12$

Store switching. A two-way ANOVA was run on the likelihood of returning to this bakery, with personalization and commitment as predictors. There were no significant main effects, however, a significant interaction of commitment and personalization emerged, ($F(1, 126) = 8.695$, $p < .005$). When commitment was high, participants who received a personalized announcement were just as unlikely ($M = 26.65$) to return to the shop as those who received an impersonal announcement ($M = 32.21$, $p = .096$); when commitment was low, those who received a personal announcement were significantly less likely to return to this bakery ($M = 36.75$) than those who received an impersonal announcement ($M = 25.64$, ($F(1, 126) = 4.637$, $p < .05$). This pattern of effects mirrors that of anger: when commitment is high, consumers switch stores regardless of personalization. However, when commitment is low, if the consumer feels personally targeted they will also switch stores.

Insert table 1 about here

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Mediation Models. We tested our proposed process model using Hayes (2013) PROCESS model 8 for bias-corrected bootstrap analysis of mediated moderation. We first tested the complete model, with personalization, commitment, and their interaction as predictors; anger, disappointment, and decision satisfaction as parallel mediators; and store switching as the outcome. Neither disappointment (b = 2.90, SE = 1.72, CI_{95}[-.51, 6.31]) nor decision satisfaction (b = -1.56, SE = 1.15, CI_{95}[-3.83, .71]) had significant effects on store switching and were dropped from the model. Retaining personalization, commitment, and their interaction as predictors, with anger as the mediator, revealed a significant indirect effect (b = -2.09, SE = 1.74, CI_{95}[-7.91, -.45]) consistent with mediated moderation. Specifically, when commitment is low, the indirect effect through anger of a personalized (vs. impersonal) stockout message on store switching is significant (b = 1.79, SE = 1.26, CI_{95}[.66, 4.17]), supporting our prediction that anger mediates the effect of commitment and personalization on store switching.

We expected that disappointment would mediate the effects of personalization and commitment on decision satisfaction. To test this proposal, PROCESS model 8 was run with personalization, commitment, and their interaction as predictors, anger, and disappointment as mediators, and decision satisfaction as the outcome variable. Here, anger (b = -.06, SE = .12, CI_{95}[-.29, .17]), did not have a significant effect on decision satisfaction, and thus was dropped. The simplified model was then run, with personalization, commitment, and their interaction as predictors, disappointment as the sole mediator, and decision satisfaction as the outcome. Results are consistent with mediated moderation, and suggest that disappointment mediates the effect of

personalization when commitment is low (b = .06, SE = .08, CI_{95}[.04, .37]). Specifically, when commitment is low, the indirect effect through disappointment on personal (vs. impersonal) stockout messages is significant (b = -.68, SE = .32, CI_{95}[-1.14, -.07]). This supports our contention that disappointment mediates the effect of commitment and personalization on decision satisfaction.

Insert table 2 about here

Discussion

Experiment 1 demonstrates that consumers experience anger and disappointment in response to stockouts, and show that personalization of the stockout announcement and commitment to the out-of-stock item influence the degree to which these emotional responses are experienced. As feeling personally foiled is one of the key appraisals leading to anger (Frijda 1986), anything that leads the consumer to believe that product unavailability is biased or targeted towards them personally enhances feelings of anger. In this study, even when participants were not strongly committed to the out-of-stock item, being told that their preferred item was only available to loyalty club members led to greater feelings of anger. And while commitment and personalization both led to lowered decision satisfaction and a higher likelihood of store switching, when anger is included as a mediator it becomes clear that commitment and personalization are influencing retaliations through the emotional reaction. Commitment is plainly anger producing; greater dedication to a goal (i.e., the preferred dessert) creates fertile ground for an angry response because goal progress is impeded (Izard 1977). But even in low

commitment, where otherwise people would just experience disappointment, personalization of the stockout can lead to anger and store switching, which also follows from theories of anger, as personalization creates the sense that the individual was singled out and progress impeded based on some individuation (Frijda 1986; Izard 1977).

Emerging from these results is a theory of two emotions with distinctly different triggers: commitment and personalization, both elements of stockout situations, amplify anger, while disappointment appears as a nearly invariant component of any stockout experience. Indeed, to support this assertion, we ran a follow-up study (full details available in the Web Appendix) with the same shopping scenario to examine the pattern of emotional responses when participants' preferred desert was in-stock vs. out-of-stock, and when commitment was high vs. low. Consistent with the results of Experiment 1, participants in the follow-up study only experienced higher levels of anger (compared to the in-stock conditions) when they were highly committed to the out of stock item. On the other hand, they experienced higher levels of disappointment in response to any stockout (vs. in stock). Together with the results of Experiment 1, this suggests that disappointment may be a basic component of the stockout experience, occurring whenever there is a stockout, with anger only arising when commitment or personalization intensify the stockout experience. Notably, this follow-up study also showed parallel findings to Experiment 1 with respect to the role of emotions in predicting downstream responses; whereas anger mediated the effects of stockouts on the retaliatory behavior of store switching, disappointment mediated decision satisfaction.

In Experiment 2, we examine how the cause of a stockout (controllable or uncontrollable) can also shape responses. Anger should arise particularly for controllable stockouts: the offending party could (and should) have avoided this problem. On the other hand,

disappointment is particularly sensitive to chance, unavoidable failures—thus, disappointment may emerge more strongly for uncontrollable stockouts. Experiment 2 also examines the impact of disappointment on choice deferral. This wider breadth of behavioral options was designed to both provide disappointed participants with more options including a "passive" behavioral response (e.g., deferral), but also to incorporate the broader set of behavioral responses identified using exit surveys and observational methods (Campo, Gijsbrechts, and Nisol 2000; Emmelhainz et al. 1991). Upon discovering a stockout, consumers can either (i) switch to another option (item switching), (ii) go to another store (store switching), or (iii) abandon purchase (choice deferral). In Experiment 2, participants can make any of those behavioral choices allowing further examination of how anger and disappointment predict these different reactions. Consistent with their respective behavioral tendencies, we predict anger will increase the choice to switch stores (just as we found in Experiment 1), while disappointment will increase the choice to delay purchase when that is an option.

EXPERIMENT 2: ANGER PREDICTS SWITCHING; DISAPPOINTMENT PREDICTS CHOICE DEFERRAL

Design and Method

Experiment 2 employed a 2 (Stockout Reason: controllable, uncontrollable) x 2 (Commitment: high, low) between subjects design, and the same shopping scenario as in Experiment 1. The stockout was manipulated when the bakery manager informs the participant that the store forgot to order enough ingredients to make the preferred dessert (controllable) or

that the supplier's delivery truck broke down and they did not receive the day's supply of ingredients (uncontrollable). Additionally, after hearing about the stockout, participants were given three choice options: choose a different dessert (item switching), go to a different bakery to get dessert (store switching), or go home and think of a different gift (choice deferral).

Participants proceeded through the same questions as in Experiments 1: emotion ratings, satisfaction, and store switching. A total of 149 individuals (49% female, average age = 20; range = 18-44) participated in this study, along with others in a 1-hour lab session, for $10.

Results

Anger. A two-way ANOVA was run on the anger index ($\alpha = .87$), with stockout reason and commitment as predictors. There was a main effect of commitment, ($F(1, 145) = 7.622$, $p < .01$): more anger was elicited if the participant was highly committed to the out-of-stock item ($M = 4.42$) than low commitment ($M = 3.49$). There was no main effect of stockout reason, however the interaction of the reason with commitment was significant, ($F(1, 145) = 4.105$, $p < .05$): when individuals were highly committed to the out-of-stock item, there was no difference between a controllable ($M = 5.11$) and an uncontrollable ($M = 4.94$) reason, yet when commitment was low, a controllable stockout ($M = 5.22$) elicited significantly more anger than an uncontrollable one ($M = 4.39$; $F(1, 145) = 4.732$, $p < .05$). As before, this pattern of results suggests that commitment alone enhances anger, however, when commitment is low other aspects of the stockout situation can also drive anger—in this case, controllability.

Disappointment. A two-way ANOVA was run on the disappointment index ($\alpha = .79$), with stockout reason and commitment as predictors. There was no significant effect of commitment, however a main effect of stockout reason emerged, ($F(1, 145) = 5.346$, $p < .05$):

when the stockout was uncontrollable participants felt more disappointment ($M = 3.91$) than when the stockout occurred due to a controllable reason ($M = 3.30$). Importantly, this main effect is qualified by a significant interaction between commitment and reason, ($F(1, 145) = 4.132$, $p < .05$): there was no difference in disappointment when participants were highly committed ($M_{controllable} = 3.02$ versus $M_{uncontrollable} = 3.67$), yet participants with low commitment, felt greater disappointment when the stockout was due to uncontrollable reasons ($M = 4.33$) than to controllable ones ($M = 3.57$; $F(1, 145) = 3.717$, $p = .056$).

Decision Satisfaction. The index of decision satisfaction ($\alpha = .80$) was analyzed via an ANOVA with stockout reason and commitment as predictors. There was a significant main effect of commitment, ($F(1, 145) = 3.809$, $p < .05$), such that participants had lower decision satisfaction when they were highly committed to the out-of-stock item ($M = 5.04$) versus when they had low commitment to the unavailable item ($M = 5.83$). No other effects were significant, suggesting that while the reason for the stockout may have emotional implications, it does not influence the degree to which consumers are satisfied with the decision process, unless potentially through an emotional mediator, examined below.

Insert table 3 about here

Retaliatory Behaviors. In Experiment 2 we provided participants with the opportunity to either switch items (choose a different dessert), switch stores, or defer choice altogether. Replicating previous studies (Emmelhainz et al. 1991), item switching was the dominant choice (67.1%), with store switching (22.2%) and deferring choice (10.7%) following. These three

choices were subjected to a multinomial logit with reason, commitment, and the interaction of the two as predictors. Commitment significantly predicted the likelihood of switching to a different store (b= 1.042, $p < .0001$), such that the more committed participants were to the unavailable option, the greater the likelihood of switching to another store. Reason for the stockout, however, influenced the likelihood of choosing to defer choice (b = -.544, $p < .01$): when the reason was uncontrollable, participants were more likely to defer choice.

Mediation Models. Current approaches to mediated moderation can best handle continuous or binary outcomes (i.e., mediation in multinomial logit has difficulties in deriving indirect effects), and thus two separate bias-corrected bootstrapped analyses were run, comparing item switching with store switching, and item switching with choice deferral. In both cases, PROCESS model 8 was used to predict the specific outcome behaviors (Hayes 2013).

Store switching. The first model predicts store switching with commitment, stockout reason, and their interaction as predictors, with anger, disappointment, and decision satisfaction as mediators. The model is estimating the effects of the predictors and mediators on increasing the selection of store switching. As in Experiment 1, neither disappointment (b = -.24, SE = .21, CI_{95}[-.59, .12]) nor decision satisfaction (b = -.38, SE = .26, CI_{95}[-.65, .22]) had significant effects on store switching and were dropped from the model. Retaining commitment, stockout reason, and their interaction as predictors, with anger as the mediator, revealed a significant indirect effect (b = 1.33, SE = .58, CI_{95}[.19, 2.46]) consistent with mediated moderation. These results support our prediction that anger mediates the effect of commitment and stockout reason on store switching and our contention that other aspects of the stockout situation (e.g., reason, personalization) only come into play when commitment to the out-of-stock item is low.

Choice Deferral. The second model predicts choice deferral with commitment, stockout reason, and their interaction as predictors, with anger, disappointment, and decision satisfaction as mediators. In contrast to the store switching models, anger was not a significant predictor of choice deferral (b = 3.72, SE = 2.38, CI_{95}[-.95, 8.39]) nor was decision satisfaction (b = -1.18, SE = .93, CI_{95}[-3.00, .64]). Thus, the remaining model included reason, commitment and their interaction as predictors, and disappointment as the sole mediator on choosing to defer purchase. Results support a pattern of mediated moderation as the indirect effect of the interaction is significant: b = -1.62, SE = 1.11, CI_{95}[-5.64, -.58]. These results support our prediction that disappointment mediates the effect of commitment and stockout reason on choice deferral.

Decision Satisfaction. We also ran PROCESS model 8 on decision satisfaction, with reason, commitment, and their interaction as predictors; and anger and disappointment as mediators. Anger was not a significant mediator of decision satisfaction (b = -.04, SE = .10, CI_{95}[-.23, .15]) and was removed from the model. On the other hand, disappointment remained a significant mediator of the effect of reason and commitment on decision satisfaction ratings, consistent with mediated moderation: indirect effect of the interaction through disappointment (b = -.37, SE = .05, CI_{95}[-.93, -.08]).

Insert table 4 about here

Discussion

Experiment 2 builds on the findings from the first study by examining how the reason for a stockout and its "controllability," differentially provoke anger and disappointment. Each emotion is predicted by its underlying appraisal tendencies: anger is highest when commitment is high or when the stockout could have been avoided (controllable reason), and it is in these situations when consumers are more likely to choose to go to a different store. Disappointment, on the other hand, is strongest when commitment is low and when the stockout is unavoidable (uncontrollable); this combination leads consumers to be more likely to abandon the purchase and defer choice until a later date.

GENERAL DISCUSSION

Previous research has suggested that consumer responses to stockouts are driven by reductions in decision satisfaction. We propose and demonstrate that emotions naturally arise during stockouts, and that these discrete emotions are better predictors of consumer responses than decision satisfaction. More specifically, we show that anger and disappointment result from distinctly different stockout situations: anger is a response to stockouts that are personally directed or controllable, or when commitment to the out of stock item is high. Disappointment, on the other hand, is a consistent component of the stockout experience, occurring in most situations, but is particularly strong when commitment is low and the stockout occurred for uncontrollable reasons.

Consistent with research on discrete emotions in consumer decision making, these experiments also demonstrate that emotional reactions predict different downstream behaviors following a stockout: Experiment 1 demonstrated that anger increases the likelihood of switching stores for future purchases, while Experiment 2 showed that angry consumers are more likely to leave the store immediately, whereas disappointed consumers are more likely to abandon choice altogether. Importantly, process models showed that including emotions reduces the predictive value of decision satisfaction, suggesting that emotions are the proximal mediator of behavior, and that decision satisfaction is an outcome of those emotions.

Research has begun to look at disappointment as a unique emotional response, distinct from regret and sadness (Zeelenberg et al. 2000). Disappointment deserves attention for its specific appraisal and behavioral tendencies, but even more so because of its relation to expectation disconfirmation—a crucial component of satisfaction and consumption. The studies presented here demonstrate that disappointment consistently arises in response to stockouts, but particularly when the consumer feels the stockout was unavoidable. Unfortunately for both manufacturers and retailers, the experience of disappointment can increase the likelihood that consumers choose to defer choice, running the risk that the consumer abandons purchase altogether.

Somewhat surprisingly, there is relatively little work examining consumer anger (for exceptions see: Bechwati and Morrin 2003; Bonifield and Cole 2007; Gal and Liu 2011). Previous literature has found, however, that anger evokes optimistic risk estimates and risk-seeking choices (Lerner and Keltner 2001), predicts retaliatory behaviors in response to service failures, and impacts how consumers respond to conciliatory behaviors (Bonifield and Cole 2007). Consistent with our findings, research on consumers "penalizing" the offending company

has shown that angry consumers exact vengeance upon the perpetrator, even at considerable cost to themselves (Bechwati and Morrin 2003). The literature on consumer complaint management and defensive marketing strategies has focused on the choice between exit (store or brand switching) and loyalty (Fornell and Wernerfelt 1987), yet it has not incorporated the emotional state of the consumer into these analyses. The current work suggests that defensive marketing may benefit from incorporating emotions, particularly anger, in determining efficient responses and successful conciliatory strategies.

We focused on emotional reactions to supply-side stockouts, but future examination of demand-side stockouts may also yield insights. For example, if an item sells out because of popularity, whom do customers blame and what emotions do they feel in response? Popularity-driven stockouts could be the fault of the manufacturer—if an item is popular, manufacturers could simply make more—and may prompt anger toward the manufacturer. Yet, consumers might blame other customers—particularly if there are opportunities for individuals to "jump" the line, or pre-purchase items—thus creating anger toward other consumers. Additionally, demand-side stockouts could elicit specific emotional responses of varying intensity, depending on the "nearness" of the stockout: researchers have found that "near misses" in other domains (i.e., missing your train by 2 minutes versus 10) increase self-blame and regret (Gilbert, Morewedge, Risen, and Wilson 2004). As described earlier, disappointment arises when an individual did the best they could and it turned out poorly—regret, on the other hand, arises when the individual chose a course of action, but *should have known* that other actions would have resulted in a better outcome. Thus, demand-side stockouts may lead to a distinct set of emotional responses, from anger at other consumers (versus the manufacturer) to regret and self-blame, each of which have distinct behavioral responses and outcomes.

Along with demand-side stockout causes, future research could also investigate consumers' lay beliefs about why the stockout occurred, as well as how consumers might respond to different explanations, or remedies, from the manufacturer or retailer. The current research provides out-of-stock information with little opportunity for misinformation or motivational inferences. However, consumers may believe that manufacturers *artificially* create stockouts, whether to inflate prices, popularity, or gain media attention. Because consumers may not possess a sophisticated understanding of supply chains and their complexity, manipulative stockout beliefs may be common, and would presumably lead to very intense feelings of anger—and retaliatory behaviors.

While this paper documents emotions as a key predictor of consumers' retaliatory behavior, it does not address how these emotional responses can be undone once they occur. Beyond simply reducing or eliminating these negative emotions, is it possible to transform them into a positive response if handled correctly? Little research exists on how other people can intervene in an individual's emotional response, yet there is some evidence that allows speculation. For instance, research has examined catharsis (venting anger: acting aggressively) as a way to diffuse anger (Bushman, Baumeister, and Phillips 2001). While the media may have popularized "venting" as an effective anger management strategy, evidence suggests that it does not mitigate anger, but frequently enhances or reinforces it. This suggests that providing consumers with an opportunity to vent or complain would be an ineffective remedy.

In conclusion, this paper examines consumer responses to stockouts by focusing on the different emotional reactions consumers experience, and what downstream outcomes each emotion predicts. Leveraging discrete emotion theory, we demonstrate that when consumers are highly committed to the out-of-stock item, feel personally targeted, or feel that the stockout

should have been avoided, they experience anger that then leads to active retaliation against the retailer: a greater propensity to switch stores. On the other hand, consumers generally experience disappointment in response to stockouts, but particularly when the stockout was unexpected or uncontrollable, and disappointment predicts both consumers' satisfaction with the choice process and their likelihood of deferring choice. Taken together, these results demonstrate the importance of including discrete emotions in the decision-making process, as the distinct characteristics of each emotion lead to unique and predictable patterns of subsequent consumer behavior.

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Table 1. Experiment 1: Commitment and Personalization Enhance Anger

	Personal Announcement		**Impersonal Announcement**	
	High Commitment	Low Commitment	High Commitment	Low Commitment
Anger	5.61	5.52	4.76	4.15
Disappointment	5.42	4.88	5.39	5.03
Decision Satisfaction	5.32	4.65	5.14	5.36
Store Switching	26.65	36.75	32.21	25.64
N	33	34	31	32

Table 2: Experiment 1: Mediation Results

Store Switching																
	Consequent															
	Anger (M1)				Disappointment (M2)				Decision Satisfaction (M3)				Store Switching (Y)			
Antecedent	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*
Commitment (X)	0.603	0.471	1.280	0.203	0.583	0.415	1.406	0.162	-0.671	0.376	-1.786	0.076	8.042	4.907	1.639	0.104
Personalization (W)	1.361	0.48	2.8657	0.0049	0.89	0.42	1.212	0.183	-0.712	0.38	-1.881	0.0623	5.640	5.060	1.115	0.267
Interaction (X*W)	-0.51	0.3	-2.759	0.0051	-0.76	0.6	-1.269	0.2068	1.3423	0.54	2.488	0.0142	-16.713	7.124	-2.346	0.021
Anger (M1)	---	---	---	---	---	---	---	---	---	---	---	---	11.073	5.113	-2.166	0.032
Disappointment (M2)	---	---	---	---	---	---	---	---	---	---	---	---	2.900	1.720	1.115	0.267
Decision Satisfaction (M3)	---	---	---	---	---	---	---	---	---	---	---	---	-1.560	1.150	-1.360	0.176
Constant	4.150	0.330	12.560	< 0.001	3.993	0.291	13.714	< 0.001	5.358	0.264	20.326	< 0.001	17.016	8.469	2.009	0.047
Model Summary	R2 = 0.0895				R2 = 0.0393				R2 = 0.0471				R2 = 0.1914			
	F(3, 126) = 4.1298, p < .001				F(3, 126) = 1.7199, p = .1663				F(3, 126) = 2.0772, p = .1065				F(6, 123) = 4.8526, p < .001			

Decision Satisfaction												
	Consequent											
	Anger (M1)				Disappointment (M2)				Decision Satisfaction (Y)			
Antecedent	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*
Commitment (X)	0.603	0.471	1.280	0.203	0.583	0.415	1.406	0.162	-0.623	0.380	-1.639	0.104
Personalization (W)	1.361	0.48	2.8657	0.0049	0.89	0.42	1.212	0.183	-0.612	0.392	-1.561	0.121
Interaction (X*W)	-0.51	0.3	-2.759	0.0051	-0.76	0.6	-1.269	0.2068	0.936	0.432	0.718	0.230
Anger (M1)	---	---	---	---	---	---	---	---	-0.059	0.119	-0.499	0.619
Disappointment (M2)	---	---	---	---	---	---	---	---	1.296	0.545	2.376	0.019
Constant	4.150	0.330	12.560	< 0.001	3.993	0.291	13.714	< 0.001	5.689	0.422	13.473	< 0.001
Model Summary	R2 = 0.0895				R2 = 0.0393				R2 = 0.2358			
	F(3, 126) = 4.1298, p < .001				F(3, 126) = 1.7199, p = .1663				F(5, 124) = 3.4165, p < .005			

Table 3: Experiment 2: Commitment and Controllability of Stockouts Influence Experienced Anger and Disappointment and Subsequent Behaviors

	Controllable Stockout		**Uncontrollable Stockout**	
	High Commitment	Low Commitment	High Commitment	Low Commitment
Anger	5.21	5.22	4.94	4.39
Disappointment	3.02	3.57	3.67	4.33
Decision Satisfaction	5.04	5.83	5.41	5.43
Store Switching	43%	21%	38%	25%
Choice Deferral	3%	9%	14%	18%
N	37	36	38	38

Table 4: Experiment 2: Mediation Results

Store Switching

	Consequent															
	Anger (M1)				Disappointment (M2)				Decision Satisfaction (M3)				Store Switching (Y)			
Antecedent	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*	Coeff.	SE	*z*	*p*
Commitment (X)	1.020	0.469	2.175	0.031	0.586	0.409	1.431	0.155	-1.355	0.296	-1.965	0.031	1.433	0.598	2.397	0.017
Reason (W)	0.128	0.48	0.2699	0.7876	-3.06	0.41	2.376	0.035	0.154	0.3	0.512	0.609	-0.072	0.692	-0.105	0.917
Interaction (X*W)	-4.18	1.02	-2.752	0.0048	3.18	0.2	2.394	0.032	-0.52	0.42	-1.234	0.219	-0.382	0.160	-2.384	0.017
Anger (M1)	---	---	---	---	---	---	---	---	---	---	---	---	0.546	0.197	2.778	0.006
Disappointment (M2)	---	---	---	---	---	---	---	---	---	---	---	---	-0.237	0.214	-1.107	0.268
Decision Satisfaction (M3)	---	---	---	---	---	---	---	---	---	---	---	---	-0.102	0.859	-0.119	0.905
Constant	3.434	0.332	10.360	< 0.001	3.632	0.289	12.554	< 0.001	5.430	0.209	25.983	< 0.001	-0.923	1.080	-0.855	0.393
Model Summary	R2 = 0.0705				R2 = 0.0931				R2 = 0.0237				`-2LL=146.2869			
	F(3, 145) = 4.5838, p < .001				F(3, 145) = 2.9646, p < .05				F(3, 145) = 1.1732, p = .3221							

Choice Deferral

	Consequent															
	Anger (M1)				Disappointment (M2)				Decision Satisfaction (M3)				Store Switching (Y)			
Antecedent	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*	Coeff.	SE	*z*	*p*
Commitment (X)	1.020	0.469	2.175	0.031	0.586	0.409	1.431	0.155	-1.355	0.296	-1.965	0.031	5.932	87.264	0.068	0.946
Reason (W)	0.128	0.48	0.2699	0.7876	-3.06	0.41	2.376	0.035	0.154	0.3	0.512	0.609	7.784	87.252	0.089	0.929
Interaction (X*W)	-4.18	1.02	-2.752	0.0048	3.18	0.2	2.394	0.032	-0.52	0.42	-1.234	0.219	-16.452	123.786	-0.133	0.894
Anger (M1)	---	---	---	---	---	---	---	---	---	---	---	---	3.720	2.383	1.561	0.119
Disappointment (M2)	---	---	---	---	---	---	---	---	---	---	---	---	2.039	0.829	1.993	0.047
Decision Satisfaction (M3)	---	---	---	---	---	---	---	---	---	---	---	---	-1.177	0.929	-1.268	0.205
Constant	3.434	0.332	10.360	< 0.001	3.632	0.289	12.554	< 0.001	5.430	0.209	25.983	< 0.001	-39.673	89.273	-0.444	0.657
Model Summary	R2 = 0.0705				R2 = 0.0931				R2 = 0.0237				`-2LL=163.2262			
	F(3, 145) = 4.5838, p < .001				F(3, 145) = 2.9646, p < .05				F(3, 145) = 1.1732, p = .3221							

Decision Satisfaction

	Consequent											
	Anger (M1)				Disappointment (M2)				Decision Satisfaction (Y)			
Antecedent	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*	Coeff.	SE	*t*	*p*
Commitment (X)	1.020	0.469	2.175	0.031	0.586	0.409	1.431	0.155	0.109	0.292	0.372	0.710
Reason (W)	0.128	0.48	0.2699	0.7876	-3.06	0.41	2.376	0.035	0.125	0.293	0.428	0.669
Interaction (X*W)	-4.18	1.02	-2.752	0.0048	3.18	0.2	2.394	0.032	-0.494	0.412	-1.201	0.232
Anger (M1)	---	---	---	---	---	---	---	---	-0.039	0.096	-0.410	0.683
Disappointment (M2)	---	---	---	---	---	---	---	---	-0.355	0.110	-2.401	0.008
Constant	3.434	0.332	10.360	< 0.001	3.632	0.289	12.554	< 0.001	6.126	0.293	20.911	< 0.001
Model Summary	R2 = 0.0705				R2 = 0.0931				R2 = 0.0943			
	F(3, 145) = 4.5838, p < .001				F(3, 145) = 2.9646, p < .05				F(5, 143) = 2.9775, p = .0138			