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UNDERSTANDING SUPPLIER SWITCHING BEHAVIOR: THE ROLE OF PSYCHOLOGICAL CONTRACTS IN A COMPETITIVE SETTING

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Today's globally competitive environment presents ample opportunity for buyers to dissolve relationships by switching suppliers. While previous studies have described supplier switching behavior based on supplier attributes and switching costs, our study leverages attribution theory to evaluate the impact of psychological contracts on supplier switching behavior. We report the results of a controlled experiment involving 265 subjects in which we manipulate three characteristics of a psychological contract breach: attribution (whether the breach was due to reneging by the supplier or a disruption), severity (whether the breach was major or minor), and timing (whether the breach was early or late in the life cycle of the exchange history). Our analysis indicates that in the context of supplier switching, buyers are affected by the attribution and severity of a breach but not by the timing. In contrast to previous experimental research in noncompetitive settings, we find that psychological contract violation mediates the relationship between breach and behavior. We further complement our primary findings with a vignette-based experiment and interview data collected from experienced managers. Our research makes an important contribution to the relationship dissolution and industrial buyer behavior literatures by providing a behavioral explanation for supplier switching and reveals the complex role of psychological contracts in supply chain exchanges.

Keywords: *behavioral supply management; psychological contracts; attribution theory; switching behavior; laboratory studies; multinomial logistic regression; relationship dissolution; disruption*

INTRODUCTION

The life cycle of interorganizational relationships has been a topic of considerable interest for scholars and practitioners alike (Johnston, McCutcheon, Stuart & Kerwood, 2004; Koufteros, Vickery & Droege, 2012; Ring & Van de Ven, 1994). Processes and circumstances leading to the end of a buyer–supplier relationship, identified in scholarly work as relationship dissolution (Dwyer, Schurr & Oh, 1987), have been of particular interest. This is likely due to the considerable cost, time, and effort invested by parties involved in the dissolution process (Chen, Rungtusanatham, Goldstein & Koerner, 2013; Heide & Weiss, 1995). As such, factors influencing the buyer's decision to dissolve a supplier exchange relationship are of critical importance.

Previous research evaluating a buyer's decision-making behavior regarding suppliers has tended to focus on tangible, quantifiable factors. For example, it is not surprising that buyers prioritize improvements to their cost structure when evaluating their relationship with a supplier (Pfeiffer, 2010; Wagner & Friedl, 2007). In fact, while quantifiable factors such as quality, delivery, and performance history have long proven important in buyer decision-making, there are a host of nonquantifiable factors that are equally as important in a buyer's decisions involving relationship continuity (Dickson, 1966; Kannan & Tan, 2002; Sheth,

1973). For example, a buyer's decisions to dissolve supplier relationships are often informed by assessments of supplier organizational practices and policies (Helm, Rolfes & Günter, 2006; Perrien, Paradis & Banting, 1995) and can be influenced by factors such as quality of potential partner options and trust (Hocutt, 1998). However, there remain significant gaps in our understanding of these less quantifiable influences on the buyer's decision to switch suppliers. One key factor yet to be examined is the role of psychological contracts.

A psychological contract refers to "an individual's beliefs regarding the terms and conditions of a reciprocal exchange agreement between that focal person and another party" (Rousseau, 1989; p. 123). Psychological contracts are established when an individual develops *perceived obligations beyond what is stated in the explicit contract*. Even in the presence of a written contract, individuals can interpret the contract differently, thus giving rise to psychological contracts. Psychological contract *breach* occurs when those perceived obligations go unfulfilled, and breach commonly gives rise to an emotional sense of *violation* (Morrison & Robinson, 1997). Psychological contracts, when breached, are posited to pose a very real threat to relationship continuity. In this research, we leverage attribution theory to design a set of experiments to test the influence of psychological contracts on the buyer's decision to switch suppliers. We define supplier switching as the decision of a buyer to move the entirety of a purchase to a new supplier, thus signaling dissolution of the existing supplier relationship. We complement our empirical studies with a series of in-depth practitioner interviews that lend further credence and support to our findings. Through this effort, we address an important gap at the intersection of the relationship dissolution and industrial buyer behavior literatures.

We make several contributions with this research. First, we extend the bounds of psychological contract theory in the buyer–supplier domain by specifying the impact of a buyer's perception of psychological contract breach on relationship dissolution. Second, through a combination of interviews and experiments, we develop a comprehensive portrait of the role of emotions in buyer decision-making behavior in this context. Finally, our study provides unique insights into the trade-off between an important qualitative factor (i.e., psychological contracts) influencing supplier switching behavior and a highly ubiquitous objective factor (i.e., cost). Our work contributes more broadly to the area of behavioral operations and supply management, using controlled laboratory and vignette-based experiments to improve our understanding of organizational decision-making and outcomes (e.g., Bendoly, Thomas & Capra, 2010; Huang, Gattiker & Schwarz, 2008; Tokar, Aloysius & Waller, 2012).

THEORETICAL BACKGROUND AND HYPOTHESES

Termination of a buyer–supplier exchange can be a complex process, fraught with cost and negative affect; however, understanding the rationale behind the dissolution provides valuable strategic information for the parties involved (Perrien et al., 1995). Previous efforts within the relationship dissolution and industrial buyer behavior literatures reveal antecedents to this critical decision. Certainly, one key determinant of buyer–supplier relationship dissolution involves the financial returns from the relationship as compared to the invested time and resources (Chen et al., 2013). Additional considerations affecting this cost-benefit analysis include environmental and organizational factors (Johnston & Lewin, 1996), such as the quality of supply alternatives (i.e., an environmental factor) and relative dependence on the relationship (i.e., an organizational factor) (Hocutt, 1998). The industrial buyer behavior literature also examines individual-level factors such as education, lifestyle, work experience, gender, and cultural stereotypes possessed by the decision-makers as factors affecting the decision-making process (Da Silva, Davies & Naudé, 2002; Sheth, 1973; White, 1979). Indeed, work at this level demonstrates the importance of "soft," or intangible, factors on relationship dissolution. Although both relationship dissolution and industrial buyer literatures have highlighted intangible factors such as individual characteristics, they have overall been pursued less rigorously as compared to the tangible aspects.

Our research evaluates the role of psychological contracts as one of the intangibles critical to the buyer's decision to switch suppliers, but as yet overlooked in the literature. We argue that psychological contracts are an important source of information influencing choice behavior. In synthesizing information about their environment relative to the psychological contract, individuals go through a sense-making process (Rousseau, 2001). This process is similar to that described by attribution theory (AT), in that individuals are described as social perceivers of events and use information to assign responsibility for an occurrence (Fiske & Taylor, 1991). According to AT, the entire act of attribution is a three-step process: First, the behavior is observed or perceived; then, the intentionality of the behavior is assessed; and ultimately, the behavior is attributed to an internal or external cause (Weiner, 1992). The dimensions of AT are locus of causality, controllability, and stability (Weiner, 1986, 1995). In the buyer–supplier context, locus of causality refers to the buyer's evaluation of the party

responsible for the event (i.e., the supplier). Controllability assesses the degree to which the circumstance is avoidable, and stability determines whether the buyer perceives the cause of the supplier's action to be temporary or permanent. We propose these various dimensions of AT play a role in determining how the buyer perceives a supplier action and evaluates decisions regarding supplier switching. In this way, supplier switching can be viewed as a form of self-protective action the buyer takes when the factors leading to the breach provide sufficient information to negatively alter the cost-benefit analysis (Xia, Monroe & Cox, 2004).

Psychological Contract Breach

A psychological contract breach occurs when an individual perceives that the other party has failed to uphold their part of the obligations laid out by the psychological contract (Rousseau, 1989). Morrison and Robinson (1997) present a model outlining different factors contributing to psychological contract breach. We relate these factors—attribution, severity, and timing—to the dimensions of AT to theorize buyer perceptions of psychological contract breach and the resulting impact on supplier switching.

Attribution. Attribution, defined within the psychological contract framework as "judgments of why the [psychological] contract breach occurred" (Morrison & Robinson, 1997, p. 243), can be linked to the dimensions of locus of causality and controllability in AT. Judgments of "why" the breach occurred begin with an assessment of causality, or determination of the party responsible for the breach. Controllability of an event plays a role in framing judgments about the situation, and these judgments determine the response. If a buyer classifies a supplier's action as controllable, this corresponds to a reneging action. The psychological contract literature defines reneging as occurring when a party is able but unwilling to fulfill obligations (Robinson & Morrison, 2000). Alternatively, if the supplier's action is deemed as uncontrollable, it corresponds to a disruption in the psychological contract literature. A disruption describes a party as willing but unable to follow through on obligations (Morrison & Robinson, 1997; Robinson, 1996). We propose that the buyer's judgment regarding attribution (i.e., the locus of causality and controllability) will influence the choice to remain in an exchange relationship with that supplier when the buyer has other supplier options available. If the buyer perceives the supplier's action to be uncontrollable (i.e., a disruption), then no wrongdoing was perpetuated and switching suppliers may not be deemed necessary. Alternatively, when the supplier breach is due to a controllable factor (i.e., reneging), the buyer should subsequently take self-protective action by means of switching suppliers.

H1: Reneging, as opposed to disruption, is more likely to lead buyers to switch suppliers.

Severity. A second key concept within the psychological contract framework is the size or the impact of the breach (Morrison & Robinson, 1997). Severity thus speaks to how damaging the supplier's actions are to the buyer (Tennen & Affleck, 1990), and therefore, it is directly related to the buyer's economic bottom line (Chen et al., 2013). As the severity of the damages caused by a breach increases, AT predicts that the buyer should assign greater blame to the supplier (Tennen & Affleck, 1990). We propose that breaches of major severity will as such subsequently influence the buyer's choice behavior; a buyer with other viable supply options will be more likely to take self-protective action in the form of supplier switching.

H2: Major breaches, as opposed to minor breaches, are more likely to lead buyers to switch suppliers.

Timing of Breach. The timing of a breach reflects the concept of stability within AT, wherein a buyer assesses how durable a supplier's transaction history is. When breaches develop early in the life cycle of a buyer–supplier exchange, there exists a limited history by which the buyer can assess the supplier's actions; the stability of the supplier's action is uncertain. Comparatively, buyers who have experienced a sustained history of satisfactory interaction with a supplier are more likely to assess late-occurring breaches as an aberration, or a temporary occurrence. We argue these assessments inform the buyer's choice behavior; similarly, previous research has linked the duration of a relationship to a buyer's commitment and intention to dissolve a relationship (Hocutt, 1998). We predict that in the early stages of a relationship, buyers will be unable to assess the stability of the supplier's action and therefore be more likely to take a self-protective action by switching. Alternatively, buyers experiencing a breach following a stable and satisfactory history with the supplier will be less likely to switch.

H3: Early breaches, as opposed to late breaches, are more likely to lead buyers to switch suppliers.

Psychological Contract Violation

Psychological contract violation refers to the emotional state of an individual after experiencing a psychological contract breach (Morrison & Robinson, 1997). Where psychological contract breach is a cognitive condition, psychological contract violation is an emotional or affective condition (Morrison &

Robinson, 1997). Psychological contract violation has been used to help explain changes in behavior following a breach (Robinson & Rousseau, 1994), and similarly, emotions have been found to increase the likelihood of relationship dissolution (Perrien et al., 1995). We therefore argue the potential for psychological contract violation to mediate the relationship between a psychological contract breach and supplier switching. We expect this relationship when the supplier's action is deemed controllable (reneging), the breach situation is more severe (major breach), and during the early phase of the relationship (early breach). Thus, we expect the relationships between the three psychological contract breach factors and supplier switching behavior from H1 to H3 to be mediated by the buyer's experience of psychological contract violation.

H4a: Psychological contract violation will mediate the relationship between attribution and switching behavior.

H4b: Psychological contract violation will mediate the relationship between severity and switching behavior.

H4c: Psychological contract violation will mediate the relationship between timing and switching behavior.

METHODOLOGY

In our study, we are interested in isolating the effects of the different dimensions of psychological contract breach on supplier switching decisions in a buyer–supplier exchange. Supplier switching, as a form of relationship dissolution, is therefore best studied as one stage of a multistage relationship life cycle. As such, to examine our hypotheses, we use an experimental task similar to that used by Eckerd, Hill, Boyer, Donohue and Ward (2013). This design emulates a 20-period transactional buyer–supplier exchange and allows for the introduction of a breach at any point in the relationship life cycle, thus making it highly aligned with the goals of our study.

There are numerous advantages to using laboratory experiments (Eckerd & Bendoly, 2011; Siemsen, 2011). For example, in the field, it is difficult to measure all characteristics of suppliers and the cost of switching. In the laboratory, we are able to control all information about suppliers and switching costs. With an observational (i.e., nonexperimental) study in the field, it is difficult to control for *perceptions* of supplier characteristics and switching costs. With random assignment of a sufficiently large number of subjects to treatments, we are able to reasonably assume that such perceptions by subjects are approximately similar between treatments (other than in response to the manipulated variables, which are different between treatments).

However, one potential downside to using a laboratory experiment is that subjects may not display the same behavior in the laboratory as they would in the field. To help minimize this concern, we incentivized the subjects in our experiment with monetary payments in keeping with the principles of induced value theory (Deck & Smith, 2013; Smith, 1976). Also, our research uses student subjects, and it is possible that the results may not generalize to older and more experienced individuals. A review of the literature reveals that many prior studies on buyer–supplier relations (e.g., Eckerd et al., 2013; Huang et al., 2008; Krause, Terpend & Petersen, 2006; Min, LaTour & Jones, 1995; Thomas, Thomas, Manrodt & Rutner, 2013) have used student subjects and some that have explicitly compared professional buyers and students (e.g., Min et al., 1995) did not find a difference in performance. Finally, we acknowledge that the internal validity (i.e., precision in inferring the nature of cause and effect) provided by laboratory experiments does not come free—there is a potential trade-off with external validity (i.e., the generalizability of results) (Stevens, 2011). However, Stevens (2011) points out that internal validity concerns are potentially a far more serious threat than external validity. We attempt to address these latter two concerns by complementing our primary experimental findings with additional vignette-based role-playing experiments and interviews, both conducted with professionally experienced samples (see Tangpong, Hung & Ro, 2010, for a similar approach).

Experimental Design

Our experiment employs a 2 (Attribution) × 2 (Severity) × 2 (Timing) design. We asked participants to role-play as buyers in the floral goods industry. Subjects played for 20 periods, each period ordering goods from a supplier. Next, a demand figure was simulated and any leftover inventory calculated. Then, the supplier that delivered the goods bought back any leftover inventory for a buyback price. Buyback prices from the supplier were stable until the point of breach. Breaches lasted for three periods, or until the buyer switched suppliers. The attribution, severity, and timing of the change of buyback price are our independent variables.

While we leverage the same experimental design as Eckerd et al. (2013), our experimental task differs to accommodate a choice of supply alternatives for the buyer. At the start of each period, we asked participants to select one supplier from a choice of two suppliers. Our suppliers are homogeneous, such that

there is no difference in objective characteristics (i.e., cost, quality, and delivery time) that might cause the buyer to prefer one supplier over the other. The presence of homogeneous suppliers controls for objective characteristics studied in prior research on supplier selection and switching behavior (e.g., Demski, Sappington & Spiller, 1987). Subjects could switch suppliers in any period(s) of the experiment, but must pay a switching fee of $1,000 whenever switching suppliers. This switching fee represents the economic switching cost that is featured in analytical models of supplier switching behavior (e.g., Wagner & Friedl, 2007).

To execute the multiple-supplier environment, every period (versus just those involving a breach) the buyers receive messages from both suppliers. During any nonbreach period, the buyers receive a simple note of thanks from the selected supplier. During the periods of breach, the message is dependent on the treatment; for a disruption, buyers are informed that the change in buyback price was brought about as a consequence of bad weather causing an increase in transportation costs, whereas messages in the reneging treatment inform buyers of the seller's intent to utilize limited funds to buy back from another customer. At the end of all periods, the nonselected supplier sends a message to the buyer indicating a willingness to do business. At the end of each period, the buyer has the option to switch suppliers by incurring the switching cost. The experimental parameters and profit computations are presented in Appendix S1. Appendix S2 contains abbreviated screenshots and text of the voice-over for the video instructions provided to the participants. Complete experimental instructions are available from the authors upon request.

A total of 282 undergraduate business students from a large US university participated in the experiment. From the entire data set, 265 observations are used in our analyses (52.8 percent male; 19.6 percent international; mean age of 22.05 years). We excluded data of 17 subjects from our analyses, as it did not appear they understood the experimental task since they switched without a stimulus more than once. This decision is based on the number of unwarranted switches, that is, the number of switches without a psychological contract breach. Incentivizing the experiment ensured that switching is a response to a stimulus and is consistent with induced value theory (Smith, 1976). Switching suppliers in response to a change in the buyback price or a single switch due to exploratory behavior are to be expected, but repeated switching with no external stimulus demonstrates misunderstanding of the switching cost. An analysis of all 282 observations provided substantively similar results, other than for Hypothesis 4a, which in that case was not supported. Every participant earned a participation fee of $5 and a bonus based on their performance (i.e., buyer profitability) during the experiment. On average, we paid out a total of $7.74 per person. The task took no more than 45 minutes in the laboratory.

Participants were randomly assigned to a single treatment. Table 1 shows the various treatments, the number of participants in each treatment, and the number of participants who switched suppliers. Manipulation check results are shown in Table 2 and help rule out one threat to internal validity (Bachrach & Bendoly, 2011; Rungtusanatham, Wallin & Eckerd, 2011).

RESULTS AND ANALYSIS

Hypothesis Testing

To test H1, H2, and H3, different data analysis techniques are employed on the participant-level data and participant-period-level data. All independent variables are dummy variables coded to signify the different treatment conditions. Gender and status (domestic vs. international) are also included as controls in the analysis and do not have a significant effect on the dependent variable. The dependent variable is a categorical variable representing supplier switching behavior.

First, we use a mixed-effect multinomial logistic model to analyze the participant-period-level data. The use of this model is appropriate to account for random effects of the subject. In addition, this model overcomes any independence of observation assumptions as the 20 observations (20 periods) arise from the same participant and may be correlated (Hedeker, 2003). The dependent variable in this model is the supplier switching behavior in each period. This is coded as 0 for "No Switch" (i.e., the buyer did not switch suppliers in that period), 1 for "Response Switch" (i.e., the buyer switched suppliers specifically in response to a breach), and 2 for "Unwarranted Switch" (i.e., the buyer switched in a period during which there was no breach). For example, in the case of a participant who faced an early breach (periods 4–6), a switch in the subsequent periods (periods 5–7) was coded as 1, while a switch at any other period was coded as 2. The results of this analysis are presented in Table 3.

We also present a binary logit regression on the participant level data. For this level of analysis, each row corresponds to an aggregate profit analysis for each participant with the dependent variable coded as 0 for "No Switch" and 1 for "Response Switch." Aggregating the data to the participant level does not allow us to incorporate the unwarranted switch, but the previous model accurately captures the impact of an unwarranted switch. Binary logit regression is appropriate when dealing with a binary dependent variable

TABLE 1

Experimental Design Summary

	Minor Severity[a] (Buyback Price = $20)		Major Severity[a] (Buyback Price = $5)	
	Disruption	**Reneging**	**Disruption**	**Reneging**
Early breach (Periods 4–6)	*N* = 34 Switched = 15 44.1%	*N* = 33 Switched = 21 63.6%	*N* = 33 Switched = 20 60.6%	*N* = 34 Switched = 29 85.3%
Late breach (Periods 11–14)	*N* = 33 Switched = 12 36.3%	*N* = 34 Switched = 22 64.7%	*N* = 33 Switched = 22 66.7%	*N* = 31 Switched = 23 74.2%

[a]The original buyback price was $25.

TABLE 2

Manipulation Checks of the Psychological Contract Breach Factors

Factor	Level	Mean (Std. Dev.)	Significance
Attribution[a]	Disruption	3.75 (1.699)	<.001
	Reneging	4.68 (1.845)	
Severity[b]	Minor	4.35 (1.633)	<.001
	Major	6.07 (1.284)	
Timing[c]	Early	2.65 (1.383)	<.001
	Late	4.24 (1.162)	

[a]"The supplier caused this change in price." Scale is 1 (strongly disagree)–7 (strongly agree).
[b]"Indicate the extent to which you consider this a minor or major price change." Scale is 1 (minor)–7 (major).
[c]"Indicate the extent to which you consider this change in price to have occurred early or late in the 20 round trial." Scale is 1 (early)–7 (late).
One-way ANOVA was conducted for each of the manipulation check factors.

(Jaeger, 2008). The results of this analysis are presented in Table 4.

The effect of breach attribution is significant in the multinomial mixed-effect model ($p < .05$) and in the binary logistic model ($p < .01$). The positive sign on the coefficient indicates that the participants are more likely to switch in the reneging condition as compared to the disruption condition. Together, the two models provide us with support for H1. Similarly, breach severity is significant in the multinomial mixed-effect model ($p < .05$) and in the binary logit model ($p < .01$). These results show that participants are more likely to switch after a major breach as compared to a minor breach. This provides us with support for H2. Our results show that there is no significant effect of time on the switching behavior of the participant. Thus, H3 is not supported. In addition, the multinomial mixed-effect model shows no effect of any of the treatments on the *Unwarranted Switch*, demonstrating the random nature of unwarranted switching. Additionally, the nonsignificant estimated variance of the individuals indicates the absence of any random effects due to the individuals. We also test for all possible interactions in the binomial logistic model, and none of the interaction effects are found to be significant.

We test H4a, b, and c using a four-item survey scale for psychological contract violation, administered at the end of the experiment. The individual item and scale statistics are shown in Table 5. Mediation analysis is conducted in SPSS using PROCESS Model 4 with 10,000 bootstrap samples (Hayes, 2013). This is an "explicit procedure" and addresses mediation effects more effectively than some traditional implicit methods (Rungtusanatham, Miller & Boyer, 2014; Zhao, Lynch & Chen, 2010). The model coefficients are presented in Table 6. Using the PROCESS model, mediation is confirmed if zero is not included in the confidence interval (CI) of the indirect effect. As shown in Table 7, there is a positive indirect effect of breach attribution on supplier switching through psychological contract violation, as a bias-corrected bootstrap CI did not include zero (CI [.0017, .3458]). Psychological contract violation did not mediate the

TABLE 3

Results of Multinomial Mixed-Effects Logistic Regression Model

			Hypothesis Test	
Parameter	**B**	**Std. Error**	**z**	**Sig.**
Dependent Variable 1 (Response Switch)				
Intercept	−3.775	.241	−15.66	.000
Timing (Late = 1)	−.043	.159	−.27	.785
Severity (Major = 1)	.378	.161	2.35	.019
Attribution (Reneg = 1)	.338	.160	2.10	.035
Gender (Male = 1)	−.087	.159	−.55	.586
Status (Domestic = 1)	.021	.204	.11	.915
Dependent Variable 2 (Unwarranted Switch)				
Intercept	−5.898	.6272	−9.40	.000
Timing (Late = 1)	.222	.374	.59	.552
Severity (Major = 1)	.379	.378	1.00	.315
Attribution (Reneg = 1)	−.064	.3733	−.17	.864
Gender (Male = 1)	.209	.379	.55	.581
Status (Domestic = 1)	.384	.542	.71	.478
Model fit and statistical power	Number of observations = 5,300, Wald χ^2 = 12.75 with d.f. = 10; significance = .2383			

TABLE 4

Results of Binary Logit Regression on Response Switches

			Hypothesis Test		
Parameter	**B**	**Std. Error**	**Wald Chi-square**	**df**	**Sig.**
Intercept	−.128	.265	.243	1	.735
Timing (Late = 1)	−.131	.265	.243	1	.622
Severity (Major = 1)	.889	.268	11.007	1	.001
Attribution (Reneg = 1)	.924	.268	11.846	1	.001
Gender (Male = 1)	−.261	.268	.947	1	.331
Status (Domestic = 1)	−.043	.335	.017	1	.897
Model fit and statistical power	Hosmer and Lemeshow test: χ^2 = 7.536 with d.f. = 8; significance = .480 Nagelkerke R^2 = .118				

relationship between either severity or time of breach and supplier selection as the CIs include zero. Thus, while H4a is supported, H4b and 4c are not supported.

Post Hoc Analysis

Multiperiod Experiment. We also present results of a mixed-factor ANOVA on the participant-level data (Table 8). The dependent variable is the duration of psychological contract breach and is calculated by the number of periods the subjects were exposed to a psychological contract breach. In our experiment, switching a supplier results in normal conditions (i.e., prebreach buyback pricing) being restored the following period (minimum breach duration = 1), while no switching would result in breach buyback pricing for three periods (maximum breach duration = 3). This is a consequence of the buyer's switching behavior. Gender and status are added as covariates in the analysis. The analysis reveals a significant effect of breach attribution [F (1,257) = 15.26, $p < .001$, $\eta^2 = .05$] and breach severity [F (1,257) = 5.91, $p < .05$, $\eta^2 = .02$]. We find that participants in the reneging condition were exposed to fewer periods of psychological contract breach ($M = 1.98$) as compared to participants in the disruption condition ($M = 2.38$). Similarly, we find that participants in the major severity condition were exposed to fewer periods of psychological contract breach ($M = 2.05$) as compared to participants in the minor severity condition ($M = 2.30$). While the

TABLE 5

Factor Analysis of Psychological Contract Violation Scale

		Cronbach's Alpha = .923	
	Factor Loadings	Corrected Item-total Correlation	Cronbach's Alpha if Item Deleted
I feel a great deal of anger toward my supplier.	.851	.745	.925
I feel betrayed by my supplier.	.937	.881	.880
I feel that my supplier has violated the contract between us.	.884	.793	.911
I feel extremely frustrated by how I have been treated by my supplier.	.934	.875	.882

Scale is 1 = Strongly disagree, 7 = Strongly agree.

TABLE 6

Model Coefficients

	DV: Psychological Contract Violation			DV: Switch		
	B	Std. Error	Sig	B	Std. Error	Sig
Intercept	3.695	.278	.000	−1.545	.528	.0034
Timing (Late = 1)	−.333	.192	.083	−.014	.276	.959
Severity (Major = 1)	.281	.192	.144	.860	.277	.002
Attribution (Reneg = 1)	.3763	.192	.051	.858	.278	.002
PCV				.384	.278	.000
Gender (Male = 1)	−.351	.193	.07	−.159	.278	.566
Status (Domestic = 1)	.134	.243	.58	.104	.347	.764
Model Summary	R^2 = .046			Nagelkerke R^2 = .199		
	$F(5,259) = 2.541$, $p = .028$					

TABLE 7

Indirect Effects

Mediation Paths	Indirect Effect	Boot SE	BootLLCI	BootULCI
Attribution → PCV → Switch	.145	.086	.0017	.3458
Severity → PCV → Switch	.107	.085	−.0374	.3006
Timing → PCV → Switch	−.128	−.083	−.3162	.0146

PCV, Psychological contract violation.

results from the ANOVA do not point to the precise number of switches, they do show that buyers in the reneging and major severity conditions preferred to switch early on in a breach. These results provide additional support that buyers in the reneging and major severity conditions perceive the breach as more threatening than the opposing treatments and this led the buyers to more swiftly take self-preserving action. Similar to the results of the multinomial mixed-effect logistic model and the binary logit model, there is no significant effect of time, gender, or status, nor are there any significant interaction effects.

Finally, as a point of comparison with the Eckerd et al. (2013) study, we evaluate the buyer's propensity

TABLE 8

Results from Mixed-Factor ANOVA with Breach Duration as Dependent Variable

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	17.591[a]	7	2.513	3.554	.001	.088
Intercept	1,259.435	1	1,259.435	1,781.224	.000	.874
Timing (Late = 1)	.987	1	.987	1.396	.239	.005
Severity (Major = 1)	4.182	1	4.182	5.914	.016	.022
Attribution (Reneg = 1)	10.791	1	10.791	15.261	.000	.056
Timing × Severity	1.136	1	1.136	1.607	.206	.006
Timing × Attribution	.030	1	.030	.043	.836	.000
Severity × Attribution	5.258e-005	1	5.258e-005	.000	.993	.000
Error	181.715	257	.707			
Total	1,460.000	265				
Corrected Total	199.306	264				

[a]R Squared = .088 (Adjusted R Squared = .063)

to switch suppliers as opposed to reducing their order quantities. To test this, we carry out a repeated measures ANOVA with order quantity over the 20 periods as a repeated measure. The results from the test show that there is no significant change in the buyer's order quantities throughout the experiment.

Vignette-Based Role-Playing Experiment. To corroborate the external validity of our experiments, we ran a vignette-based role-playing experiment with participants who have professional work experience. Vignette experiments have proven helpful in the discipline to evaluate judgments of supply chain managers (Oflaç, Sullivan & Baltacioğlu, 2012; Thomas et al., 2013). Based on the recommendations of Rungtusanatham et al. (2011), the vignette was created after extensively reviewing the context (predesign stage), followed by several iterations of writing the vignette (design stage), and finally review by two practitioners and two academics to ensure clarity and comprehensiveness (postdesign stage). Our main purpose is to establish validity for the effect of breach attribution. The vignette, presented in Appendix S3, is based on the multiperiod experiment and assesses the effect of attribution on purchasing intentions by manipulating the reasons for decreasing the buyback price. Time and severity were not evaluated in this follow-on experiment.

Sixty-seven MBA students from a large US university participated in the experiment (67.2 percent male; 23.8 percent international; mean age of 26.3 years). These participants possessed average work experience of 4.36 years. From the sample, 11.9 percent of the participants had been involved in buying or selling goods worth over one million dollars while 37.4 percent of the participants had been involved in procuring goods worth less than one million dollars. The remaining 50.7 percent possess average work experience of 4.07 years, although not directly involved with purchasing. The participants rated the vignette high on realism, measured via a 7-point scale accessing how realistic ($M = 5.69$, $p < .01$) and how probable the situations compare to real life ($M = 6.01$, $p < .01$) (Thomas et al., 2013). This experiment took on average 5 minutes to complete.

The manipulation check for attribution, measured on a 7-point scale, is significant [$F(1, 65) = 8.91$, $p < .001$, $\eta^2 = .121$]. Participants in the reneging condition ($M = 5.00$) attribute the supplier as the cause for the change in buyback price more strongly than participants in the disruption condition ($M = 3.80$). In the analysis, we control for the level of familiarity with purchasing/sales activities, measured on a 5-point scale (1 = extremely familiar, 5 = not familiar at all). Intent to exit the relationship is measured on a 2-item scale (Spearman's rho = .73). Results of the mixed-factor ANOVA for the relationship dissolution intention show that participants in the reneging condition are more likely to exit the relationship than the participants in the disruption condition [$F(1,62) = 4.43$, $p = .039$, $\eta^2 = .121$]. Familiarity with purchasing is nonsignificant in predicting the decision to exit the relationship. These results provide further support for H1 regarding the effect of psychological breach attribution on supplier switching.

Practical Evaluation of the Findings

Practitioner insights are valuable for investigating the relevance of a research work (Rosemann & Vessey, 2008). Interviews are useful in drawing inferences from the experiences of the interviewees, and so we conducted a series of postexperimental semistructured interviews to contextualize our experimental findings

(Rowley, 2012). Participants were selected based on whether they had experience in coordinating services or products from a different organization. Interviews were conducted at various locations based on interviewee convenience. In interviewing the participants about their experiences as buyers and/or suppliers, we adhered to the following best practices (Rosemann & Vessey, 2008): (1) the interview group consisted of unbiased members of the population; (2) the interview guide was restricted to 12 open-ended questions; (3) the participants were briefed about our interest in the role of unsaid obligations and the experiments; and (4) in a bid to save the valuable time of the participants, interviews were conducted in group sessions where possible. Interviews lasted 30–45 minutes. Overall, we conducted five sessions with eight different participants. Demographic data are presented in Table 9. Involving participants with low and high levels of experience helps ensure that we understood the perspectives of exchange duration on the development of psychological contracts. Two of the participants served as both buyers and suppliers and were interviewed for both perspectives. The interview protocol is outlined in Appendix S4.

Psychological Contracts. The interviewees who work in roles that require them to procure goods/services from suppliers agreed to have developed some form of psychological contract. The buyers confided that there were varying reasons for these perceived obligations; however, the general perspective was that the obligations stemmed from the fact that the buyers contributed to the seller's business. It was perceived that the seller should show appreciation that the buyer's business benefited the seller financially and/or reputationally. The following excerpts from the interviews highlight the forms that psychological contracts took in these relationships. Note that while there was no legally enforceable contractual obligation for a supplier to invest in buyer-specific assets and capabilities, or to display behaviors in the best interests of the buyer, there was an expectation that they would do so.

> We want to understand what our suppliers are investing in our competitors and we want to know if they are investing the same resources at our company. We understand that as a supplier they have the decision to invest where they feel they are going to get the best value for their money... we expect our suppliers to invest with us, to be partners in our business—Food1/Buyer

> Since they are a vendor for us, in a way they are working for us. They are expected to be professional with us...and help us grow—ITService1/Buyer

The suppliers also acknowledged the role of psychological contracts in their business dealings. Furthermore, they admitted to being cognizant about the impact it might have on relationships:

> Of course, nothing is one sided. We have expectations from our suppliers, so as suppliers we are aware of what the buyer might be looking for... As a supplier we realize that by fulfilling these [psychological] contracts we will be able to develop better relationships and these in turn will help us in the long run—Publishing1/Supplier

> Yes obligations are certainly there. There are some things that you cannot share with the clients/buyers ... so you have to be diplomatic in answering .... I will probably tell my manager to speak to them about the matter .... That is taught to us while we are joining and getting trained—IT Service 3/Supplier

Psychological Contract Breach and Violation. The interviews also provide illustrations of instances when

TABLE 9

Demographic Data of Interview Participants

Industry/ Interviewee ID	Title	Category Worth	Experience	Buyer/ Supplier	Session
Food1	Planning Analyst	$1.5 B	1 year	Buyer	1
Food2	Replenishment Manager	$750 M	1 year	Buyer	
IT Service1	Project Specialist	N/A	1 year	Buyer	2
IT Service2	Project Specialist	N/A	1 year	Buyer	
IT Service3	Consultant	N/A	8 years	Supplier	
Food3	Owner	$6 M	6 years	Both	3
Publishing1	Owner	$50 K	8 years	Both	4
Beauty1	Export Manager	$10 M	5 years	Supplier	5

the buyers felt they had experienced psychological contract breach, and what actions they had taken as a result. These examples ranged from termination of relationships to notifying the supplier about the breach. Reneging was found to be a prominent breach factor in buyer–supplier relationship dissolution. Often when buyers felt they had experienced a breach, they additionally experienced a negative emotional reaction congruent with psychological contract violation. Some interviewees told us how psychological contract breach had led to the dissolution of relationships, while others spoke of remedial action on behalf of the supplier that prevented a supplier switch. Almost all the buyers agreed that they were more likely to switch when they felt that the supplier's actions were avoidable. This is in consensus with H1 and H4, as it implies that reneging is a significant factor in supplier switching:

> . . .we have a two day turnaround. So containers get cleared from customs and the goods are with us in two days. Our supplier told us that we would be charged a storage fee as they did not have a truck ready to get it out within those two days. For us, that was not good enough. . . they knew three or four weeks in advance that the shipment was coming and they were charging us the storage fee . . . . In that case we were so angry we actually went to different suppliers, received quotes and they were ready to pick up our consignment—Food3/Buyer

Interviewees made numerous emotion-laden statements implying that the effects of the breach were exacerbated because of the magnitude of the consequence, which is supportive of H2 and H4. However, it was difficult in this case to quantify precisely what constituted a major or minor breach, as it was subjective to the business and industry:

> The supplier has a big bucket of money called trade funds where they can give marketing dollars for programming and things like that. And so, they give those out to other retailers, in offers like buy one get one free and a lot of the advertising that we don't do. We feel like a lot of time we don't get our fair share of trade funds because trade funds are usually ear-marked for the special hot promos and not for cost of goods. We feel cheated. We feel like "you are not investing in your partnership with us."—Food1/Buyer

Some buyers also admitted that the extent to which the breach impacted their business (i.e., severity) was more important than whether it was controllable by the supplier (i.e., attribution):

> If we see that things have gotten out of hand and they are making decisions, purposely or not, that are negatively impacting our business we know there are consequences—Food 2/Buyer

Consistent with our failure to find support for H3, none of the buyers could vouch that a long relationship led to the supplier being exempt from the consequences of a psychological contract breach. While some did acknowledge that they trusted some suppliers more than others, during the course of the interviews, it emerged that all were willing to consider action against any supplier in the event of a psychological contract breach. Phrases like "we don't want anything to do with them" as well as emotionally charged language regarding supplier switching were observed regardless of the timing of the breach. Not surprisingly, the interviews elicited stronger emotions from the buyers as compared to our experimental participants.

The following quotes provide examples of buyer and supplier actions that attempted to ameliorate the effects of a breach. Interestingly, these attempts were not always successful:

> In the end, our supplier realized that we were moving and they fixed the situation straight away. They kept blaming the trucking company, because they outsource their trucking. They said the trucking company didn't have enough trucks. For us that is not an excuse—Food3/Buyer

> One of our biggest clients likes to gets his goods very quickly. We give him a lead time of two weeks. But, ever since we started, we get it to him within a week. And so now, because we have done that, if he doesn't get it within one week he will start complaining. So, at times, we will go the extra mile . . . . In some cases where we can't meet it we will bring up the paper saying this is what we agreed upon—Food3/Supplier

> [The buyer] orders a product and it is out of stock. I have to find a way not to say no but just to substitute it with another product—Beauty1/Supplier

Finally, underscoring the serious potential consequences of a breach, there was evidence that supplier switching behavior was not just a short-term emotional reaction to the breach, but could be an irreversible termination of the buyer–supplier relationship.

> [Recently] our supplier billed us wrong. In our business, many times, our customers will tell us that we need this particular book and we are expecting it at this price. As distributors we then ask various suppliers for the best quote. So we had told our suppliers that this is the discount that we are giving so any price that you charge us should

take into consideration our selling price. Quite a few of our suppliers said that they were not able to meet the price. Which is fine. One supplier, however, whom we had been dealing with for quite a few years agreed to the conditions. So we picked up the books and delivered them to the customer. However when we received the bill for the book it was more than what we had decided on. Actually we were making a loss on the whole transaction. We sat down and I repeated our conversation and he would just not agree to it. We could have continued the debate for [a long time]. But then we decided that we would pay him and never deal with him again. So we paid him and we never called him again. I think he did not expect that we would never want to deal with him again. He has called us a few times after the incident but we are 100 percent sure that we don't want anything to do with him.—Publishing1/Buyer

DISCUSSION AND IMPLICATIONS

Theoretical Contributions

Our research makes several contributions to theory. First, our findings reflect the need to go beyond the essential cost-benefit analysis to include the behavioral dynamics of a buyer–supplier relationship that might inadvertently lead to relationship dissolution. Specifically, we demonstrate the critical role psychological contracts play in the buyer's choice behavior regarding supplier switching. This adds to a small yet burgeoning stream of research examining the impact of psychological contracts in buyer–supplier exchanges (Blancero & Ellram, 1997; Eckerd et al., 2013; Hill, Eckerd, Wilson & Greer, 2009). Importantly, we find that the role of psychological contracts is quite complex and nuanced depending on the context and the outcomes evaluated. We find that when a buyer has supply options, reneging attributions and major severity breaches are more likely to lead to relationship dissolution, despite the costs associated with such an action. Surprisingly, timing of the breach did not come into play; buyers were equivalently inclined to terminate an exchange whether the breach occurred early or late in the relationship life cycle. This runs counter to previous findings regarding adjustments to order quantities in a sole-source scenario (Eckerd et al., 2013) and emphasizes how psychological contract breach manifests differently in buyer–supplier exchanges depending on the context and choice sets.

Second, our study contributes an improved understanding of the role of emotions in buyer–supplier relationship dissolution. We find that psychological contract violation in a competitive setting mediates the relationship between breach attribution and supplier switching behavior. Interestingly, Eckerd et al. (2013) did not find a mediating effect on the ordering behavior evaluated in their study; they attributed this to the phenomenon of emotion regulation, in which the decision-maker ignores unwanted emotions. This may satisfice in a scenario, such as that in Eckerd et al. (2013), where the buyer has no meaningful recourse against a sole supplier. However, our competitive scenario provides a meaningful outlet for the buyer to self-protect via supplier switching, and in this case, we find buyer emotions to be relevant in explaining the behavior. These findings further illustrate the complexity of psychological contracts in buyer–supplier exchange, and the need for advancing contextualized theoretical development in this area (Whetten, 2009). Collectively, our findings mark an important contribution to the relationship dissolution and industrial buyer behavior literatures.

Finally, while not a focal point of our study, our experimental design afforded us an interesting opportunity to evaluate buyers' perceptions of switching costs. Previous work shows that switching costs may be perceived differently depending on the circumstances of the outcome (Whitten & Leidner, 2006), but the switching costs in that research are not static across respondents. Our experiment had the same $1,000 supplier switching cost across all participants and treatments. Results of a one-way ANOVA reveal that buyers in our experiment that switched suppliers indeed reported lower perceived switching costs ($M = 4.52$) than buyers who did not switch (($M = 5.00$); $F(1, 263) = 6.127$, $p < .05$), *despite the costs being identical.* In other words, buyers who switch suppliers perceive the same $1,000 cost of switching to be lower than those who do not switch; their cost-benefit calculus is different regarding this objective item when viewed in tandem with the subjective event of psychological contract breach. Thus, our study provides important insight into the trade-offs between a perceptual factor (i.e., psychological contracts) influencing supplier switching behavior and a concrete factor (i.e., cost).

Managerial Contributions

From a managerial perspective, our experimental results and interview findings together highlight the importance of understanding and upholding perceived obligations in buyer–supplier relations. The results from our experiments reveal that the effect of reneging increases the likelihood that buyers will dissolve a relationship with a supplier. Our interviews mirror the same sentiment with most of the buyers having experienced some form of reneging that led them to at least think about switching suppliers. For example, one of the interviewees (Food3) remarked that "... for some suppliers we know we are one of their bigger

customers, so if they don't treat us right then we will take action and sever the relationship." The same interviewee further discusses the role of relational dynamics as they pertain to supplier switching, stating "...if the whole playing field was even we would of course work with those that we were happier with." These statements reinforce the notion that in many instances, the buyer–supplier relationship is one of partnership and of mutually beneficial activities (Petersen, Handfield, Lawson & Cousins, 2008; Whipple, Wiedmer & Boyer, 2015). Obligations reflected in psychological contracts (i.e., what defines mutually beneficial activities) might not be evident until a breach has taken place. Thus, ill-defined psychological contracts may ultimately lead to relationship dissolution.

Not surprisingly, our interviews revealed communication as a key prescriptive measure for understanding buyer–supplier psychological contracts and avoiding breaches. Interviewee ITService 3 stated, "the best way to avoid any sort of confusion is to communicate, or over-communicate." By communicating openly with buyers about any potential lapse in the psychological contract, suppliers can turn a negative situation into a service recovery opportunity (Miller, Craighead & Karwan, 2000). For buying firms, it is good practice to thoroughly communicate not only expectations, but also perceptions of breach with the supplier to enhance understanding of the psychological contract. One of the buyers we interviewed noted that when their supplier was notified of a situation of reneging, the supplier mended its ways and diffused the situation. This could lead to substantial savings for both parties.

Limitations and Future Research

In our laboratory evaluation of supplier switching behavior, several simplifying assumptions were necessary. For example, we imposed homogeneity in objective supplier characteristics, such as cost and quality. This degree of control allowed us to keep focus on the purely behavioral aspect of supplier switching. Future research could evaluate more complex trade-offs between social and psychological factors with more objective supplier selection criteria such as delivery performance, quality, and service. For our purposes, the insights achieved through our carefully designed laboratory experiment outweigh the limiting assumptions incorporated into our model of buyer–supplier exchange.

Another potentially limiting factor is that our study models a primarily transactional exchange, in that the buyer and supplier did not engage in communications together. While this models the many online transactions taking place in practice today, it is representative of only one end of the exchange relationship spectrum. On the more relational end of the spectrum, social and psychological factors may further exacerbate switching costs as exchange agents develop rapport, trust, and commitment to one another (see for example Wagner, Coley & Lindemann, 2011). This may explain why we find that the timing of the breach did not have a significant effect on switching behavior. While we witness buyers in a transactional exchange as willing to accept monetary switching costs to move to other supply options, it may be that additional "soft" costs that exist and increase over time in a relational exchange would alter this dynamic. Future research can expand on these issues by evaluating different types of exchange, and by increasing switching costs over time.

Relatedly, we recognize that the buyer's perceptions of switching costs vis-à-vis supplier switching presents an interesting avenue for future research, in that we only evaluate one switching cost in our experiment. Future research could explore a range of switching costs to better quantify the trade-offs of staying with a potentially unreliable supplier versus absorbing the costs to switch to a new and uncertain supplier. Future research in this domain should look at the supplier switching process by relaxing some of the assumptions in our research. For example, how does the supplier switching process work when the buyer procures more than one item from a supplier, or when the supplier provides a critical part for the buyer's business? Additionally, what happens if the buyer gives the supplier another chance and a similar breach happens? Research should also consider situational dynamics with regard to the formation of psychological contracts. For example, one interviewee (Food1) remarked, "... we have different expectations from a small mom and pop supplier than a giant company not in terms of honesty or integrity, but in terms of resources that they have and what they will be providing us." Thus, similar situations that involve different players might elicit varied responses from an individual. Finally, there is ample opportunity in the field of buyer–supplier psychological contracts to evaluate the supplier's side of the story. We believe the current stream of literature investigating the role of psychological contracts in buyer–supplier exchange is in its infancy, and many new opportunities for exploring this complicated phenomenon exist.

CONCLUSION

Our study provides a close examination of one stage of the buyer–supplier life cycle—relationship dissolution under the psychological contract lens. We find that while some attributes of psychological contract breach (breach attribution and breach severity) are associated with increased supplier switching behavior, the timing of breach does not appear to differentially

influence the buyer's switching intentions. In addition, we find that reneging leads to an emotional state of psychological contract violation, which mediates the supplier switching decision. Interviews conducted with supply management professionals further corroborate our experimental findings and provide additional context to the role of psychological contracts in practice. More broadly, our work serves to underscore the complex and highly nuanced role of psychological contracts in buyer–supplier exchanges and offers a meaningful contribution to the relationship dissolution and industrial buyer behavior literatures.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in the online version of this article:

Appendix S1. Profit calculation and experiment parameters.
Appendix S2. Laboratory experiment instructions.
Appendix S3. Vignette for scenario-based role-playing experiment.
Appendix S4. Interview protocol.