

# Enough Is Enough! The Fine Line in Executing Multichannel Relational Communication

In an effort to build long-term, profitable relationships, many companies systematically engage in multichannel relational communication—personalized messages sent to existing customers through various channels as part of a broader relationship marketing strategy. In this research, the authors examine three key drivers of relational communication effectiveness: volume of communication, mix of communication channels, and alignment of those channels with customers' preferences. They hypothesize that customer response to relational communication follows a continuum in which reciprocity explains response to lower levels of communication, the classic ideal point describes a transition phase, and reactance explains response to higher levels of communication. They empirically test the theoretical framework by examining the impact of multichannel communication on repurchase over a three-year period. The results indicate that after the ideal level of communication is exceeded, customers react negatively. This negative response can be exacerbated by the use of multiple channels but attenuated by aligning channels with customer preferences. The findings suggest that the complex effects of multichannel communication can actually drive customers away from rather than closer to a company.

*Keywords:* multichannel relational communication, ideal point, reactance, reciprocity, customer repurchase

I spent two months assessing and segmenting the database of past donors and creating a plan for scheduling personal meetings with 60 high-gift-capacity donors. Ten donors were leery about speaking with me. I left messages for another 30 donors, but only three returned my call. Five donors hung up on me with varying degrees of anger. One person said that I was the third person to call in three days. Thirteen donors also received a handwritten note to inform them of our fundraising campaign. In the end, I did not book a single appointment. Because our organization relies heavily on phone and mail contacts along with face-to-face fundraising, potential donors have already been bombarded by mail and phone calls by the time I try to arrange a personal meeting. I am removing all of my donors from the phone and mail contact lists to control how much communication they receive from us.

—Major gifts officer, national nonprofit agency

**M**arketers champion the idea of focusing resources on customer retention strategies to avoid expensive acquisition initiatives and cultivate customer prof-

---

Andrea Godfrey is Assistant Professor, Department of Management and Marketing, School of Business Administration, University of California, Riverside (e-mail: andrea.godfrey@ucr.edu). Kathleen Seiders is Associate Professor, Marketing Department, Carroll School of Management, Boston College (e-mail: seiders@bc.edu). Glenn B. Voss is Associate Professor, Department of Marketing, Cox School of Business, Southern Methodist University (gvoss@cox.smu.edu). All three authors contributed equally. The authors thank their research partner for providing access to its data, the Boston College (Carroll School of Management) Dean's Research Fund, and the University of California, Riverside, Regent's Faculty Fellowship. They also thank Yuping Liu and Jacquelyn Thomas for their constructive comments, and the anonymous *JM* reviewers for their thoughtful and constructive suggestions.

---

itability. To encourage loyalty and build long-term relationships, firms must communicate with their customers in a compelling way. However, what if such marketing communication drives customers away from rather than closer to the company? As the major gifts officer in the preceding quote discovered, even an organization's most ardent supporters can be alienated when they feel bombarded by the communication.

This research focuses on multichannel relational communication, which we define as personalized communication with existing customers through various channels as part of a broader relationship marketing strategy. In an effort to retain and cross-sell to existing customers, companies use individual-level customer data to personalize this communication. The communication can remind customers of needed services, announce new products and locations, survey customer satisfaction following a service encounter, and convey targeted promotional offers.

Despite widespread use, multichannel relational communication has only recently attracted attention in the marketing literature, and its effects on customer repurchase are not well understood. Although general consensus exists that some amount of communication is better than none, relevant marketing theories and the limited empirical evidence are equivocal as to whether there is an ideal level beyond which additional communication leads to diminishing or even negative returns. For example, reciprocal action theory implies that increasing relational communication positively influences repurchase because customers perceive greater relationship investment by the firm. Conversely, reactance theory suggests that increasing relational communication

has a negative influence on repurchase because customers perceive the communication as invasive or obtrusive. The reciprocity perspective is supported by empirical studies reporting a positive linear association between relational communication volume and repurchase behavior, while reactance is supported by research reporting an inverted U-shaped effect between relational communication volume and repurchase behavior.

The challenge of understanding multichannel communication effects is complicated by the limited knowledge of how channels combine to influence customer repurchase. When firms use different communication channels in combination, it is a matter of speculation whether the effects are additive or multiplicative and, if multiplicative, whether the interaction enhances or diminishes customer response. Communication through multiple channels could enhance customer response by demonstrating greater resource investment on the part of the firm or could alienate customers by signaling an inadequate appreciation of one-to-one communication. Empirical studies involving the simultaneous use of multiple channels are particularly scant.

The mixed evidence as to whether there is an ideal level of communication—and how that level might vary when firms use multiple channels—undermines managerial practice in terms of effectively allocating marketing resources. Managers face additional challenges in aligning the communication channels used with customers' preferences. Although we might assume that aligning communication channels with customers' preferences increases the utility of the contacts, research has not examined the strength or importance of this moderating effect.

To explore these important and unresolved issues in current knowledge, we examine a set of interrelated research questions: Is there an ideal volume of relational communication? How is customer response to multichannel communication influenced by the total volume of communication and the mix of channels used? and To what degree do customers' channel preferences moderate the relationship between relational communication volume and customer repurchase? In addressing these questions, our study contributes theoretical, empirical, and substantive insights into the complex nature of multichannel communication.

We present a conceptual framework that integrates reciprocal action theory and reactance theory perspectives to describe the effects of multichannel relational communication on customer repurchase behavior. Together, these theories describe a continuum of customer response to relational communication, with lower volumes eliciting reciprocity and higher volumes triggering reactance. An ideal point along this continuum identifies the volume at which customer repurchase shifts from positive reciprocity to negative reactance. After that ideal point, additional contacts diminish rather than enhance customer repurchase.

We offer empirical support for this framework by examining the impact of multichannel relational communication on customer repurchase over three years. The longitudinal analysis provides a fine-grained examination of multichannel effects by combining three distinct data sets: (1) customer contact records, (2) customer transaction data, and (3) survey data capturing customers' channel preferences.

We use these data to estimate a system of simultaneous equations with endogenous variables. The results indicate that there is an ideal level of communication volume that varies across channels; the ideal point also shifts in response to multichannel communication efforts and across individual people, depending on their channel preferences.

Because shifts in the ideal point directly influence repurchase behavior, our results provide substantive insights that can lead to more effective customer relationship strategies. The findings highlight the importance of considering the impact of specific channels, individually and in combination, rather than aggregate volume as a means to manage the communication channel mix more effectively. The results also underscore the need to avoid inefficient allocation of marketing resources by developing protocols that limit total communication through all channels and specify effective channel combinations.

In the sections that follow, we develop a conceptual framework that predicts diminishing effects of multichannel relational communication on customer repurchase. We extend the framework to examine interaction effects for combinations of channels and for customer-level channel preferences. We then present the empirical model and results and conclude with implications for researchers and managers.

## Conceptual Framework

Reciprocal action theory builds on social norm theory to describe the obligation people experience to return "good for good," in which the response is proportional to what is received (Bagozzi 1995; Becker 1990). In market exchanges, firm investments in customer relationships can produce psychological bonding that triggers the normative reciprocity of purchase (Dahl, Honea, and Manchanda 2005). Customer reciprocity manifests when individualized communication increases perceived relationship quality (De Wulf, Odekerken-Schroder, and Iacobucci 2001) or feelings of gratitude toward the firm (Palmatier et al. 2009). Reciprocity suggests that relational communication positively influences repurchase because customers perceive a greater resource investment by the firm and enhanced informative or interpersonal value.

Reactance theory posits that attempts to influence behavior generate a motivational state of reactance (Brehm 1966). Customers resist marketing efforts that they perceive as an attempt to manipulate them, exercise control over their purchasing, or limit their freedom of choice (Clee and Wicklund 1980). As pressure from a firm's persuasion attempts increases, the reactance response grows stronger, resulting in diminished influence on customer behavior or, at extremes, a backlash or boomerang effect (Fitzsimons and Lehmann 2004; Wendlandt and Schrader 2007). Reactance theory can explain negative response to personal selling (e.g., Wicklund, Slattum, and Solomon 1970), advertising (e.g., Robertson and Rossiter 1974), direct marketing (e.g., Morimoto and Chang 2006), and rewards programs (e.g., Kivetz 2005). Prior studies have focused primarily on reactance to message content characteristics in transactional exchanges (e.g., Clee and Wicklund 1980; Fitzsimons and Lehman 2004). In contrast, we examine reactance to com-

munication volume in relational exchanges, in which theory predicts a negative customer response to communication perceived as invasive, obtrusive, or environmentally wasteful.

The relational communication literature provides empirical evidence that both theoretical perspectives are relevant to understanding customer response to firm contact. As Table 1 indicates, the limited empirical studies in this area offer conflicting results. The reciprocity principle is supported by several studies that find positive linear effects of relational communication on outcomes such as customer profitability, share of wallet, and relationship duration (Reinartz, Thomas, and Kumar 2005; Rust and Verhoef 2005; Verhoef 2003). Reactance receives support in studies that report an inverted U-shaped relationship between communication and purchase frequency (Venkatesan and Kumar 2004) and customer retention (Drèze and Bonfrer 2008), as well as a U-shaped relationship between communication and purchase timing (Kumar, Venkatesan, and Reinartz 2008). Reconciling the mixed results from this emerging set of studies is difficult because of variations in the operationalization of communication, the customer outcomes measured, and the research contexts.

### ***The Classic Ideal Point and Relational Communication Volume***

We propose that reciprocity explains why customer repurchase is likely to increase as communication volume increases from low to moderate levels, whereas reactance explains why repurchase is likely to decrease as communication increases from moderate to high levels. To describe the transition phase of the reciprocity–reactance continuum, we draw on the classic ideal point concept, which posits that the perfect or utility-maximizing level of an attribute occurs at an intermediate level that elicits the most positive response (Teas 1993). Initially, as an attribute increases up to the ideal point, utility also increases and customer response becomes more favorable (Green and Srinivasan 1978). After the ideal point is attained, further increases in the attribute instead result in negative utility and less favorable customer response (Lilien, Kotler, and Moorthy 1992). Applied to multichannel relational communication, this continuum suggests that customers reciprocate with greater repurchase as communication increases, up to the ideal point; beyond that point, they exhibit reactance and repurchase less in response to further increases. Therefore, the ideal point implies an inverted U-shaped relationship between relational communication volume and customer repurchase.

The ideal point conceptualization is similar to the two-factor paradigm for predicting customer response to mass marketing communication. This theory proposes that opposing factors determine customer response to repeated advertising stimuli (e.g., Berlyne 1970; Rethans, Swasy, and Marks 1986). Initial exposures produce a positive response due to reduced uncertainty and learning about the stimulus (Stang 1975), but higher levels of exposure produce a negative response due to tedium or reactance (Sawyer 1981). The net effect of the opposing factors is a diminishing relationship between the amount of advertising

and customer response beyond a certain threshold (Anand and Sternthal 1990).

The ideal point should describe customer response to relational communication for any channel a firm uses. In this study, we examine communication volume through three channels firms commonly use for targeted customer contacts: telephone, e-mail, and postal mail. We formally hypothesize the following:

- H<sub>1</sub>: For each communication channel, there is an ideal level of relational communication volume, which implies an inverted U-shaped relationship between customer repurchase and (a) telephone contact volume, (b) e-mail contact volume, and (c) mail contact volume.

### ***Communication Channels in Combination***

The use of multiple communication channels in combination can stimulate either additive, independent effects, or multiplicative interaction effects. Interaction effects imply that the ideal point for relational communication volume in one channel depends on the level of communication in another channel. As volume in one channel changes, the ideal point for volume in the other channel shifts to a higher or lower point. Cross-channel interactions are consistent with both reciprocal action theory and reactance theory, but the two theories differ as to whether the interactions are positive or negative.

Customers may respond positively when they receive relational communication through a combination of channels, because the use of multiple channels, rather than a single channel, shows greater resource investment by the firm. Because of their varying characteristics, different channels provide distinctive advantages in communicating information to customers. For example, the telephone channel allows bidirectional communication and the capacity for the customer to be involved in the communication (Mohr and Nevin 1990), and the e-mail channel offers customers the ability to view rich visual representations of the information being conveyed (Alba et al. 1997). Contacting customers through multiple channels allows firms to offer customers complementary benefits that enhance the overall utility of the communication, signifying greater resource investment. When customers attribute the enhanced utility to firm actions, they reciprocate with increased spending.

This reciprocity-based perspective is consistent with a central tenet of integrated marketing communication, which holds that the combined effect of using multiple media channels is greater than the sum of the individual effects of each channel (Naik and Raman 2003). For example, using mass-media channels that effectively build brand awareness can enhance the effects of channels used to communicate more detailed information (Prins and Verhoef 2007). While limited research systematically examines synergies between communication channels, especially at the individual customer level, it is logical to expect such effects to be even more pronounced for direct channels because the customers may value customized content more.

The theoretical implication is that communication through multiple channels shifts the ideal point so that customers exhibit reciprocity up to a higher volume in one or

**TABLE 1**  
**Recent Empirical Studies of Relational Communication Effects on Customer Repurchase Behavior**

<b>Study</b>	<b>Relational Communication Variables Operationalization</b>	<b>Dependent Variables Operationalization</b>	<b>Effect of Relational Communication on Repurchase Behavior</b>	<b>Theory Consistent with Findings</b>
De Wulf, Odekerken- Schroder, and Iacobucci (2001)	Direct mail <i>Three survey items on seven-point Likert scale capturing customer's perception of firm's efforts to keep regular customers informed through mail contacts</i>	Perceived relationship investment <i>Three survey items on seven-point Likert scale capturing customer's perception of firm's efforts to contribute value to regular customers</i>	Positive linear effect (Europe) Nonsignificant effect (United States)	Reciprocity
Drèze and Bonfrer (2008)	Inter-e-mail time <i>Number of days since last e-mail contact</i>	a. Customer retention <i>Estimated customer retention probability</i> b. Customer equity <i>Calculated customer equity</i>	a, b. Inverted U-shaped effect	Ideal point
Kumar, Venkatesan, and Reinartz (2008)	a. Frequency of rich modes of communication <i>Number of face-to-face contacts</i> b. Frequency of standardized modes of communication <i>Number of telephone and mail contacts</i>	Purchase timing <i>Time (in months) between previous observed purchase and current observed purchase</i>	a, b. U-shaped effect	Ideal point
Prins and Verhoef (2007)	Direct marketing communication <i>a. Dummy indicating whether a telephone contact was sent in month t</i> Direct marketing communication × mass marketing communication <i>b. Dummy indicating whether a telephone contact was sent in month t × advertising expenditures in month t</i>	Adoption timing <i>Time (in months) between service introduction and customer's adoption</i>	a. Positive effect b. Negative interaction effect	Reciprocity Reactance
Reinartz, Thomas, and Kumar (2005)	Communication contacts <i>a. Number of face-to-face contacts</i> <i>b. Number of telephone contacts</i> <i>c. Number of e-mail contacts</i> Communication contact interactions <i>d. Monthly occurrence of both face-to-face and e-mail contacts</i> <i>e. Monthly occurrence of both telephone and e-mail contacts</i>	f. Acquisition likelihood <i>Indicator variable showing whether customer is acquired</i> g. Relationship duration <i>Time (in days) of customer's relationship with the firm</i> h. Customer profitability <i>Total revenue—total costs</i>	a, b, c. Positive linear effect d, e. Positive interaction effect for all dependent variables	Reciprocity Reciprocity
Rust and Verhoef (2005)	a. Transaction-oriented communication <i>Number of direct mail promotion contacts</i> b. Relationship-oriented communication <i>Number of relationship magazine contacts</i>	Change in gross profit per customer <i>Gross profit per customer = total number of services purchased × contribution margin</i>	a, b. Positive linear effect	Reciprocity
Venkatesan and Kumar (2004)	a. Frequency of rich modes of communication <i>Number of face-to-face contacts</i> b. Frequency of standardized modes of communication <i>Number of telephone and mail contacts</i>	Purchase frequency <i>Total number of products purchased</i>	a, b. Inverted U-shaped effect	Ideal point
Verhoef (2003)	Direct mailings <i>Number of mail contacts</i>	Change in customer share <i>Customer share = number of services purchased from focal firm (observed)/number of services purchased from all firms (self-report)</i>	Positive linear effect	Reciprocity

both channels, leading to increased repurchase. A customer's repurchase response to relational communication volume in one channel is enhanced as the volume of communication in another channel increases, manifesting as a positive interaction between any two channels used in combination.

Reinartz, Thomas, and Kumar (2005) provide empirical support for this perspective in a business-to-business context and report positive interactions when firms used (1) face-to-face and e-mail and (2) telephone and e-mail channels in combination. However, they measure the interaction between channels as the number of times two communication channels were used concurrently in a given month, an operationalization that may understate multiplicative effects because it does not capture the total volume of communication through each channel.

An opposing perspective is also plausible: Customers might demonstrate reactance and respond negatively when they receive relational communication through a combination of channels. The use of multiple channels might imply that the firm is employing an ad hoc rather than a customized approach to communicate with customers. Just as different communication channels offer distinct benefits, they also provide distinct disadvantages. For example, the mail channel can be environmentally wasteful, and the e-mail channel can heighten privacy concerns (Morimoto and Chang 2006). From this perspective, contacting customers through multiple channels implies an uninformed communication program, because the combined channels require the customer to manage a variety of annoyances that decrease the overall utility of the communication. Customers ultimately feel trapped and victimized by a seemingly manipulative relational marketplace (Fournier, Dobscha, and Mick 1997).

Theoretically, the reactance-based perspective predicts that the use of multiple channels shifts the ideal point in one or both channels so that reactance is triggered at a lower volume. Customer response to relational communication volume in one channel peaks at a lower level and then diminishes as the volume of communication in another channel increases. This effect would manifest as a negative interaction between any two channels used in combination and results in a diagonal, downward shift in the response function that attenuates the peak response.

Although a paucity of research has examined the effects of multichannel communication on repurchase, Prins and Verhoef (2007) offer evidence of customer reactance to the use of multiple channels. They report that telephone contact and mass communication (e.g., television, radio, print, outdoor) have negative interaction effects on adoption timing for a new service. They suggest that the use of both communication channels in combination causes customers to believe that the firm is placing too much attention on the new service and pressuring them excessively to adopt. Although that study examines the interaction between direct telephone and mass channel communication rather than multiple direct, personalized channels, the findings suggest that communication through a combination of channels can have a negative interaction effect on purchase behavior.

In summary, both theory and empirical evidence suggest multiplicative, interaction effects between multichannel

communication volume and repurchase, but results reported in prior studies offer divergent support for the direction of the interaction. As such, we leave the question whether the interactions are positive or negative to be determined empirically. More formally, we hypothesize the following:

H<sub>2</sub>: Relational communication volume using more than one channel produces shifts in the ideal point for at least one channel, which implies significant interaction effects on customer repurchase for (a) telephone × e-mail contact volume, (b) telephone × mail contact volume, and (c) e-mail × mail contact volume.

### ***The Moderating Role of Channel Preference***

Various perspectives imply that communication channel preference is idiosyncratic and that heterogeneity in individual channel preferences influences customer response to relational communication. For example, the telephone channel is commonly perceived as one of the most intrusive (Reinartz, Thomas, and Kumar 2005), but some customers prefer its interpersonal nature, which enables them to request clarification and elaboration of the message (Roberts and Berger 1999). Some customers perceive a company's use of costly communication channels as a proxy for relationship investment, whereas others regard such costs as an inefficient expense that ultimately increases price (Palmatier 2008). Boulding et al. (2005) encourage researchers to examine such heterogeneity to understand customer response to relationship marketing actions.

Reciprocal action and reactance theories both suggest that customers' channel preferences moderate their response to relational communication and produce a shift along the reciprocity-reactance continuum to a higher ideal point. The reciprocity principle suggests that identifying and using preferred channels enhances customers' motivation to reciprocate because they appreciate the company's personalization efforts. As a result, customers respond more positively to higher volumes of communication than they do when their preferred channels are not used. Although prior research has not examined the moderating effect of channel preferences theoretically or empirically, this expectation is consistent with the finding that direct communication aligned with customer needs increases perceived relationship investment and encourages reciprocity (De Wulf, Odekerken-Schroder, and Iacobucci 2001).

Reactance theory suggests that matching the communication channel with customers' preferences attenuates reactance related to communication volume. When a customer views a channel as intrusive, for example, managing that channel's contacts requires greater effort and creates more reactance (Kivetz 2005). If customers prefer channels that provide greater utility, the matching process enhances the overall value of the communication, thereby decreasing reactance and increasing repurchase response. This perspective is consistent with Fitzsimons and Lehmann (2004), who find that offering product recommendations that are inconsistent with a customer's a priori preferences triggers reactance, but providing recommendations that align with preferences enhances satisfaction with the purchase decision process. The authors advocate that firms directly measure customers' preferences.

In effect, both theoretical perspectives imply that aligning channels with customers' preferences increases receptivity to the communication and shifts the ideal point to a higher volume. Formally,

H<sub>3</sub>: Customer preference for a channel shifts the ideal point for relational communication through that channel and enhances customer response, which implies a positive interaction effect on customer repurchase for (a) telephone channel preference × telephone contact volume, (b) e-mail channel preference × e-mail contact volume, and (c) mail channel preference × mail contact volume.

## Empirical Application

Our research design features data from three sources, combining survey data that capture customer channel preferences with 39 months of customer contact history and repurchase behavior. We collected the data for customers of a large automobile dealership with a high-volume service department. The survey sampling frame included 3370 randomly selected customers who had visited the service department within the past year. We sent each customer a packet that included a letter from the owner of the dealership, a five-page survey, a postage-paid return envelope, and an offer for a \$5 gift card on return of the completed questionnaire. We mailed follow-up surveys to all nonrespondents four weeks after the initial mailing. The two mailings produced 180 undeliverable addresses and 1162 complete responses, for a 36% effective response rate. The majority of the respondents were men (57%) and were between the ages of 35 and 64 years (60%). Sixty-nine percent had some technical or university education, and 66% had an average household income exceeding \$63,000.

For each customer, we matched survey responses with the corresponding objective data from the company's contact records and transaction database. Contact records included the dates each customer was contacted and the communication channel used for each contact. The transaction database captured the date of each customer's visit and the dollar amount spent. To facilitate a longitudinal analysis, we aggregated the data into 13 quarterly periods (quarters 0–12), which constitute the 39-month observation period.

The combined data sets represent panel data that are subject to several forms of bias (Hsiao 2004). First, cross-sectional differences in the dependent variable not captured by the explanatory variables can manifest as a heterogeneity bias and produce inconsistent estimates of the coefficients of interest. Second, the survey data we use to capture the panel's communication preferences are subject to selection bias if the panelists' decision to respond to the survey is related to repurchase, the dependent variable of interest. Third, our analysis of customer response to relational communication is subject to endogeneity bias because marketers tend to communicate more with customers who repurchase more, so causality may be circular. We now describe the key variables and the methods we use to control for all three forms of bias.

### Variables

Table 2 presents descriptive statistics and variable correlations. The Appendix provides additional details on the measurement of each variable.

*Dependent variables.* Consistent with the theoretical framework, the dependent variable of interest should capture customer response to relational communication. We examined two direct measures of customer response: repur-

**TABLE 2**  
Descriptive Statistics and Correlation Matrix

Variables	1	2	3	4	5	6	7	8	9	10
1 Repurchase spending <sup>a</sup>	1.0									
2 Repurchase visits <sup>a</sup>	.59	1.0								
3 Telephone contacts <sup>a</sup>	.15	.27	1.0							
4 E-mail contacts <sup>a</sup>	.09	.18	.04	1.0						
5 Mail contacts <sup>a</sup>	.16	.29	.22	-.02	1.0					
6 Telephone preference	.01	.05	.05	-.08	.07	1.0				
7 E-mail preference	.02	.04	-.07	.21	-.02	-.16	1.0			
8 Mail preference	-.03	-.04	-.02	-.05	-.01	.13	.10	1.0		
9 Warranty work <sup>a</sup>	.43	.41	.10	.05	.11	.01	.03	-.01	1.0	
10 Number of vehicles	.15	.30	.04	.12	.15	.03	.07	.00	.09	1.0
Mean	122.3	2.12	1.25	.62	1.31	3.54	2.81	3.12	25.47	2.20
Standard deviation	295.9	2.80	1.39	1.38	1.92	1.15	1.28	1.08	112.0	1.49
Standard error	2.50	.02	.01	.01	.02	.01	.01	.01	.95	.01
Skewness	6.68	2.02	1.36	2.89	2.28	-.58	.13	-.21	15.62	.86
Minimum	0	0	0	0	0	1	1	1	0	1
Maximum	5376	25	14	14	16	5	5	5	4302	5
Median	25.40	1	1	0	1	4	3	3	0	1
Lower 99% CL	115.8	2.06	1.22	.59	1.27	3.51	2.78	3.10	23.03	2.17
Lower 95% CL	117.4	2.07	1.23	.59	1.28	3.52	2.79	3.10	23.61	2.18
Upper 95% CL	127.2	2.17	1.28	.64	1.35	3.56	2.83	3.14	27.32	2.22
Upper 99% CL	128.7	2.18	1.28	.65	1.36	3.56	2.84	3.14	27.91	2.23

<sup>a</sup>Quarterly measures.

Notes: Correlations greater than |.02| are significant at  $p < .05$  (two-tailed test).

chase visits and repurchase spending for each customer during quarters 1–12. We log-transformed both dependent variables to improve distribution normality.

*Control variables.* We included mean-centered main and quadratic terms for the 12 quarters (TIME) to allow for trend effects. To control for heterogeneity across individual respondents, we included four exogenous variables that are not directly related to our research questions but are related to auto service spending levels. All four variables were captured in the transaction database: lagged repurchase spending (lagSPEND), lagged number of repurchase visits (lagVISIT), the amount of warranty work in the current quarter (WW), and the number of vehicles each respondent owned (VEH). We log-transformed the warranty work variable to improve distribution normality.

We controlled for selection bias using Heckman's (1979) two-step procedure. We first estimated the probability of responding to our survey using relevant information for all customers in the sampling frame: the number of relational communications before the survey through each communication channel; household income (HI), which we determined from census data by zip code; and whether the respondent had moved to a different home address during the observation period (MOVE), as captured in the transaction database. We then created an inverse Mills ratio for each respondent ( $\lambda$ ), which is a monotonic decreasing function of the probability that each customer responded to our survey. Including the inverse Mills ratio in the empirical model controls for the effect of unmeasured characteristics related to the selection process.

*Exogenous independent variables.* Channel preference was a self-reported measure that captured customers' responses to a single five-point Likert-scale question asking whether the customer preferred to be contacted through each channel (PrefPHONE, PrefEMAIL, and PrefMAIL). We have no theoretical expectations for the effect of channel preference on repurchase, but because underlying curvilinearity can bias tests of interactions (e.g., Cortina 1993), we examined both main and quadratic terms to ensure that unexpected nonlinear relationships did not emerge as a significant interaction effect. None of the quadratic terms were significant.

*Endogenous independent variables.* Three independent variables capture the volume of relational communication the firm sent to its customers by telephone (PHONE), e-mail (EMAIL), and mail (MAIL). We determined the number of contacts according to the date of each contact in each quarter of the firm's customer contact database. We mean-centered the contact measures to facilitate interpretation of the quadratic and interaction effects.

### Model Specification

Hausman (1978) tests confirmed that the three relational communication volume measures were endogenous. To control for this endogeneity, we estimated a simultaneous system of four equations for each of the endogenous variables. We specified the dependent variable (repurchase visits or spending) equation as follows:

$$\begin{aligned}
 DV_{ij} = & \alpha_0 + \alpha_1 \text{TIME} + \alpha_2 \text{TIME}^2 + \alpha_3 \lambda_i \\
 & + \alpha_4 \text{lagSPEND}_i + \alpha_5 \text{lagVISIT}_i + \alpha_6 \text{WW}_i + \alpha_7 \text{VEH}_i \\
 & + \alpha_8 \text{PrefPHONE}_i + \alpha_9 \text{PrefEMAIL}_i + \alpha_{10} \text{PrefMAIL}_i \\
 & + \alpha_{11} \text{PHONE}_i + \alpha_{12} \text{EMAIL}_i + \alpha_{13} \text{MAIL}_i \\
 & + \alpha_{14} \text{PHONE}_i^2 + \alpha_{15} \text{EMAIL}_i^2 + \alpha_{16} \text{MAIL}_i^2 \\
 & + \alpha_{17} \text{PHONE}_i \times \text{EMAIL}_i + \alpha_{18} \text{PHONE}_i \times \text{MAIL}_i \\
 & + \alpha_{19} \text{EMAIL}_i \times \text{MAIL}_i + \alpha_{20} \text{PrefPHONE}_i \times \text{PHONE}_i \\
 & + \alpha_{21} \text{PrefEMAIL}_i \times \text{EMAIL}_i + \alpha_{22} \text{PrefMAIL}_i \\
 & \times \text{MAIL}_i + e_{i1},
 \end{aligned}$$

where the time subscript  $t$  is implied for all variables and lag indicates that the measure was taken from the quarter before the dependent measure observation. (i.e.,  $t - 1$ ) In addition,

- $DV_{ij}$  = customer  $i$ 's quarterly response,
- $j$  = repurchase visits or spending,
- TIME = quarter from 1 to 12,
- $\lambda_i$  = selection control factor for customer  $i$ ,
- SPEND = quarterly repurchase spending by customer  $i$ ,
- VISIT $_i$  = number of quarterly repurchase visits by customer  $i$ ,
- WW $_i$  = amount of warranty work completed for customer  $i$ ,
- VEH $_i$  = number of vehicles serviced for customer  $i$ ,
- PrefPHONE $_i$  = customer  $i$ 's self-reported preference for the telephone channel,
- PrefEMAIL $_i$  = customer  $i$ 's self-reported preference for the e-mail channel,
- PrefMAIL $_i$  = customer  $i$ 's self-reported preference for the mail channel,
- PHONE $_i$  = number of quarterly telephone contacts targeting customer  $i$ ,
- EMAIL $_i$  = number of quarterly e-mail contacts targeting customer  $i$ ,
- MAIL $_i$  = number of quarterly mail contacts targeting customer  $i$ , and
- $e_{i1}$  = autoregressive error term.

For the three endogenous relational communication volume equations, we used exogenous, lagged variables as predictor variables:

$$\begin{aligned}
 CV_{ik} = & \beta_0 + \beta_1 \text{TIME} + \beta_2 \text{TIME}^2 + \beta_3 \text{QUARTER2} \\
 & + \beta_4 \text{QUARTER3} + \beta_5 \text{QUARTER4} + \beta_6 \text{lagSPEND}_i \\
 & + \beta_7 \text{lagSPEND}_i^2 + \beta_8 \text{lagVISIT}_i + \beta_9 \text{lagVISIT}_i^2 \\
 & + \beta_{10} \text{WW}_i + \beta_{11} \text{VEH}_i + \beta_{12} \text{lagPHONE}_i + \beta_{13} \text{lagPHONE}_i^2 \\
 & + \beta_{14} \text{lagEMAIL}_i + \beta_{15} \text{lagEMAIL}_i^2 + \beta_{16} \text{lagMAIL}_i \\
 & + \beta_{17} \text{lagMAIL}_i^2 + \beta_{18} \text{lagPHONE}_i \times \text{lagEMAIL}_i \\
 & + \beta_{19} \text{lagPHONE}_i \times \text{lagMAIL}_i + \beta_{20} \text{lagEMAIL}_i \\
 & \times \text{lagMAIL}_i + \beta_{21} \text{HI}_i + \beta_{22} \text{HI}_i^2 + \beta_{23} \text{lagMOVE}_i + e_{ij2},
 \end{aligned}$$

where

- CV $_{ik}$  = communication volume for customer  $i$  through channel  $k$  = telephone, e-mail, and mail;

QUARTER2, 3, and 4 = dummy variables to control for programmatic seasonal changes in communication volume;

HI<sub>i</sub> = annual household income of customer i; and

MOVE<sub>i</sub> = dummy variable indicating that customer i had moved to a new home address.

We used full-information maximum likelihood analysis to estimate the system of equations (Chow 1964). We examined five hierarchical models to assess the robustness of individual results and overall fit of each model (see Tables 3 and 4). To explore whether multicollinearity might be biasing the estimates, we examined the condition numbers in each model; none exceeded 15, which is well below the level that would indicate potential problems (Greene 1990).

### Model Selection

The analyses produced similar empirical results for both repurchase visits (Table 3) and repurchase spending (Table

4). For expositional brevity, we report results for the analyses using repurchase spending as the dependent variable. We used the Bayesian information criterion (BIC) to assess overall model fit. Model 1 was a baseline model that did not include quadratic or interaction terms. In Model 2, we added the three relational communication volume quadratic terms that test H<sub>1</sub>. Applying generally accepted standards for model fit (Kass and Raftery 1995), we can conclude that the addition of the relational communication volume quadratic terms (Model 2) results in very strong improvement in fit (Table 4; ΔBIC = 395.6).

We then compared the BIC for Models 3–5 with that for Model 2. In Model 3, we added the three two-way relational communication volume interactions that test H<sub>2</sub>. We also examined higher-order terms to fully explore how the ideal point shifts in the presence of two-way interaction effects. Specifically, we considered the three-way interaction among telephone, e-mail, and mail contact volume, which assesses whether the total volume of communication through all three channels significantly altered the ideal

**TABLE 3**  
**Simultaneous Equation Results for Repurchase Visits**

		Model 1	Model 2	Model 3	Model 4	Model 5
Intercept		1.04***	1.09***	1.06***	1.09***	1.04***
Time		-.01*	-.01**	-.01***	-.01**	-.01***
Time <sup>2</sup>		-.01***	-.01***	-.01***	-.01***	-.01***
Selection control factor		-.09***	-.08***	-.08***	-.08***	-.08***
Lagged spending		-.00	-.00	-.00	-.00	-.00
Lagged visits		.02***	.03***	.03***	.03***	.03***
Amount of warranty work		.18***	.19***	.19***	.19***	.19***
Number of vehicles		.07***	.08***	.08***	.08***	.08***
<b>Main Effects</b>						
Telephone preference		.03***	.03***	.02***	.05***	.04***
E-mail preference		-.00	-.00	.00	.00	.00
Mail preference		-.01*	-.01*	-.01*	-.01*	-.01*
Telephone contacts		.03*	.04**	.02	.04**	.02*
E-mail contacts		.08***	.09***	.04***	.09***	.04***
Mail contacts		.16***	.15***	.14***	.15***	.14***
<b>Volume Quadratic Effects</b>						
Telephone contacts <sup>2</sup>	H1a -		-.01***	-.01***	-.01***	-.01***
E-mail contacts <sup>2</sup>	H1b -		-.01***	-.01***	-.01***	-.01***
Mail contacts <sup>2</sup>	H1c -		-.01***	-.01***	-.01***	-.01***
<b>Volume Interactions</b>						
Telephone contacts × e-mail contacts	H2a +/-			-.02***		-.02***
Telephone contacts × mail contacts	H2b +/-			.00		.00
E-mail contacts × mail contacts	H2c +/-			-.02***		-.02***
Telephone contacts <sup>2</sup> × e-mail contacts				.01***		.01***
Mail contacts <sup>2</sup> × e-mail contacts				.002***		.002***
<b>Preference × Volume Interactions</b>						
Telephone preference × phone contacts	H3a +				.01***	.01***
E-mail preference × e-mail contacts	H3b +				.01**	.01**
Mail preference × mail contacts	H3c +				-.00	-.00
Telephone preference × phone contacts <sup>2</sup>					-.004**	-.003**
<b>Model Fit</b>						
R <sup>2</sup>		.42	.46	.46	.46	.47
BIC		170,212.2	169,849.2	169,731.7	169,835.0	169,722.7
ΔBIC (compared with Model 1)			363.0	480.4	377.2	489.4
ΔBIC (compared with Model 2)				117.5	14.2	126.5

\**p* < .05.

\*\**p* < .01.

\*\*\**p* < .001 (one-tailed t-tests for directional hypotheses; two-tailed for nondirectional hypotheses).

**TABLE 4**  
**Simultaneous Equation Results for Repurchase Spending**

		Model 1	Model 2	Model 3	Model 4	Model 5
Intercept		3.51***	3.68***	3.54***	3.67***	3.53***
Time		-.01	-.01*	-.02**	-.01*	-.02**
Time <sup>2</sup>		-.04***	-.03***	-.03***	-.03***	-.03***
Selection control factor		-.22***	-.20***	-.20***	-.20***	-.20***
Lagged spending		.00	.00	.00	.00	.00
Lagged visits		.05***	.07***	.06***	.07***	.06***
Amount of warranty work		.50***	.51***	.51***	.51***	.51***
Number of vehicles		.18***	.19***	.19***	.19***	.19***
<b>Main Effects</b>						
Telephone preference		.10***	.09***	.08***	.17***	.15***
E-mail preference		.00	-.01	-.01	.00	.01
Mail preference		-.02	-.03	-.02	-.02	-.02
Telephone contacts		.11**	.14***	.07	.15**	.08*
E-mail contacts		.26***	.32***	.16***	.32***	.15***
Mail contacts		.58***	.54***	.48***	.53***	.48***
<b>Volume Quadratic Effects</b>						
Telephone contacts <sup>2</sup>	H1a	-	-.04***	-.03***	-.04***	-.03***
E-mail contacts <sup>2</sup>	H1b	-	-.04***	-.03***	-.04***	-.03***
Mail contacts <sup>2</sup>	H1c	-	-.04***	-.03***	-.04***	-.03***
<b>Volume Interactions</b>						
Telephone contacts × e-mail contacts	H2a	+/-		-.08***		-.08***
Telephone contacts × mail contacts	H2b	+/-		-.01		-.01
E-mail contacts × mail contacts	H2c	+/-		-.06***		-.07***
Telephone contacts <sup>2</sup> × e-mail contacts				.02***		.02***
Mail contacts <sup>2</sup> × e-mail contacts				.01***		.01***
<b>Preference × Volume Interactions</b>						
Telephone preference × phone contacts	H3a	+			.04***	.04***
E-mail preference × e-mail contacts	H3b	+			.02*	.02**
Mail preference × mail contacts	H3c	+			.00	-.00
Telephone preference × phone contacts <sup>2</sup>					-.02***	-.02**
<b>Model Fit</b>						
R <sup>2</sup>		.34	.39	.40	.39	.40
BIC		203,537.6	203,142.0	203,006.7	203,120.6	202,991.3
ΔBIC (compared with Model 1)			395.6	530.8	417.0	546.3
ΔBIC (compared with Model 2)				135.3	21.4	150.7

\**p* < .05.

\*\**p* < .01.

\*\*\**p* < .001 (one-tailed t-tests for directional hypotheses; two-tailed for nondirectional).

points, and the interactions between the channel volume quadratic terms, which assess whether each curvilinear channel volume relationship varied as a function of the volume in other channels (e.g., Luo and Donthu 2006). We included two significant higher-order terms in Model 3, which produced strong improvement in fit over Model 2 (ΔBIC = 135.3).

For Model 4, we added the channel preference × channel volume interactions that test H<sub>3</sub>. We also examined channel preference × channel volume quadratic interactions, which assess whether the curvilinear channel volume relationship varied as a function of channel preference. We included one significant quadratic interaction term in Model 4, which resulted in a strong improvement in fit over Model 2 (ΔBIC = 21.4). A comparison of Model 4 with Model 3 offers no theoretical insight but is practically noteworthy: The BIC and R-square values indicate that the relational communication volume interactions (Model 3) have greater predictive ability than do the channel preference × channel volume interactions (Model 4).

We estimated all theoretical relationships simultaneously in Model 5, which produced strong improvements in fit over Model 2 (ΔBIC = 150.7), Model 3 (ΔBIC = 15.4), and Model 4 (ΔBIC = 129.3). Therefore, we focus the remaining discussion on the Model 5 results.

### Results

The results for the control variables are logical. The main effect and quadratic coefficient for time are both negative, suggesting a downward trend in repurchase over time. The selection control factor is significantly negative, suggesting that nonrespondents repurchased more than respondents. This might indicate that people with more free time (perhaps older and retired) were more willing to respond to the survey than were younger, working-age people with more vehicles in the household who subsequently repurchased more. The coefficient for lagged spending is not significant, consistent with the idea that large automotive repair expenditures in one quarter might preclude large expenditures in the following quarter. The coefficient for lagged visits is

positive, indicating that relational customers return regularly for routine maintenance. The coefficients for warranty work and number of vehicles are also positive, indicating that more work performed under warranty and more cars in the household translate into greater spending on maintenance and repairs. We now examine the results related to our three research questions.

A positive main effect and a negative quadratic coefficient for contact volume through a given channel support the classic ideal point hypothesis ( $H_1$ ). The results in Table 4 offer full support for  $H_1$ , because the main effect for communication volume is positive, and the quadratic coefficient is negative for telephone, e-mail, and mail contacts. These results indicate that the volume of relational communication through each channel has a positive impact on repurchase until the ideal point is reached. After the ideal point is exceeded, increasing volume has a negative effect on spending. Figure 1 illustrates the inverted U-shaped effects in the plots. For each channel, the first few contacts create a positive response. The positive response peaks at approximately three contacts for the telephone channel, between three and four contacts for the e-mail channel, and between nine and ten contacts for the mail channel.<sup>1</sup> Increasing volume beyond these points triggers negative reactance among customers, causing them to repurchase less.

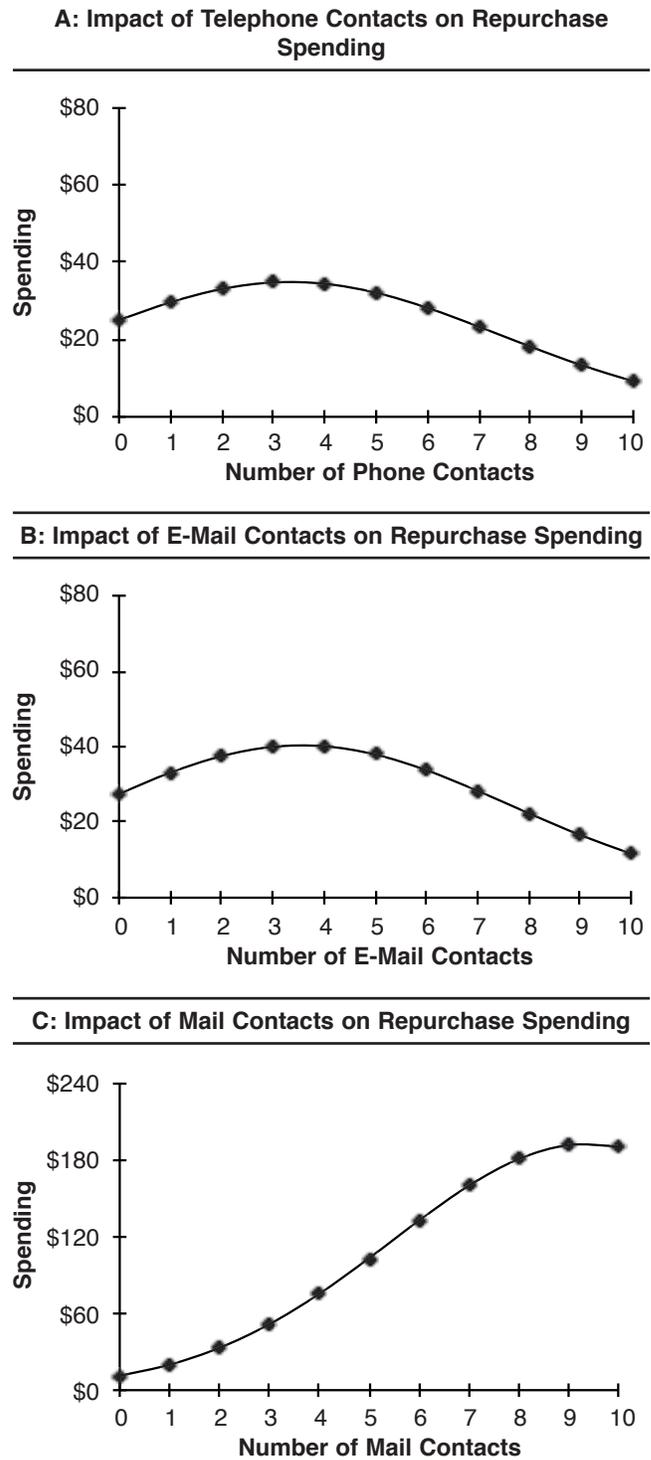
A significant interaction effect for contact volume in two channels supports a shift in the ideal point ( $H_2$ ). The results in Table 4 provide full support for two of the three predictions from  $H_2$ . The telephone contacts  $\times$  e-mail contacts and e-mail contacts  $\times$  mail contacts interactions are both significantly negative. These negative two-way interactions are consistent with a reactance theory perspective. The telephone contacts  $\times$  mail contacts interaction coefficient also is negative but is only marginally significant using a two-tailed t-test ( $p < .10$ ; t-value = -1.85) and is not significant in the repurchase visits analysis (Table 3).

We present graphs for the two significant cross-channel interaction effects in Figure 2. Panel A shows that customer response to e-mail contacts follows an inverted U-shaped pattern consistent with reciprocity followed by reactance for all levels of telephone contact. There is a clear shift in the ideal point for e-mail contacts as the number of telephone contacts increases. When there is one telephone contact, the ideal number of e-mail contacts is between five and six, but the ideal number of e-mail contacts drops to between two and three when there are three to five telephone contacts. This ideal point shift is consistent with cross-channel reactance, which leads to lower repurchase as the number of telephone and e-mail contacts jointly increases. The results in Panel B also indicate a shift in the ideal point consistent with reactance. When there is one mail contact, the ideal number of e-mail contacts is approximately five, but the ideal number of e-mail contacts drops to one when the number of mail contacts is five.

We also find support for  $H_3$ , which predicts that preference for a channel leads to more positive customer response

<sup>1</sup>All values in the graphs fall within the range of the data. Maximum values were 14 telephone, 14 e-mail, and 16 mail contacts per quarter.

**FIGURE 1**  
Ideal Points for Impact of Relational Communication on Repurchase Spending

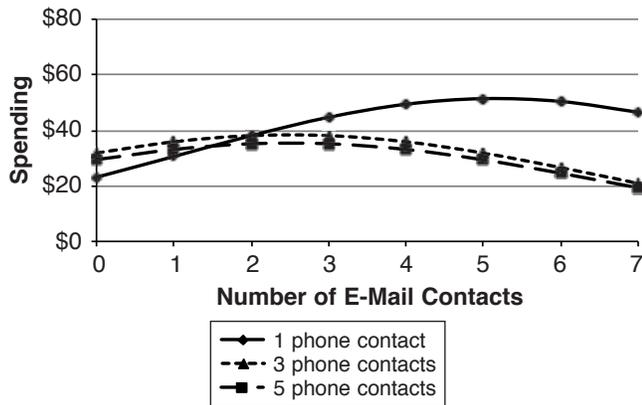


to communications through that channel. Consistent with  $H_{3a}$ , the telephone channel preference  $\times$  telephone contact volume coefficient is significantly positive. Figure 3, Panel A, shows that customer response follows the inverted U-shaped pattern that is consistent with reciprocity followed by reactance when customer preference ranges from moderate to high. There is no perceptible shift in the ideal point, which

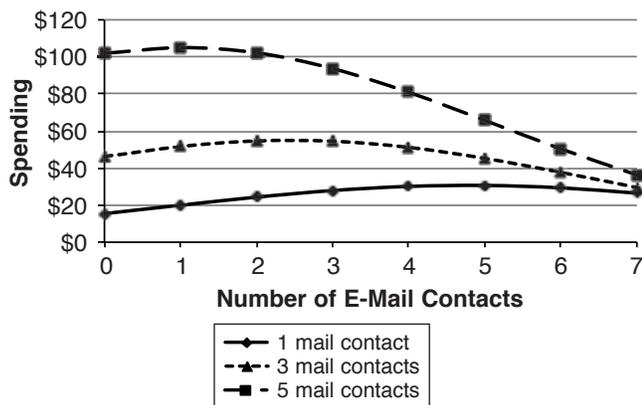
**FIGURE 2**

**Plotting Significant Volume Interaction Effects**

**A: Telephone × E-Mail Interaction Effect on Repurchase Spending**



**B: Mail × E-Mail Interaction Effect on Repurchase Spending**



occurs at approximately three phone contacts. However, when preference for the channel is low, customers exhibit no response, either positive or negative, to any phone contacts.

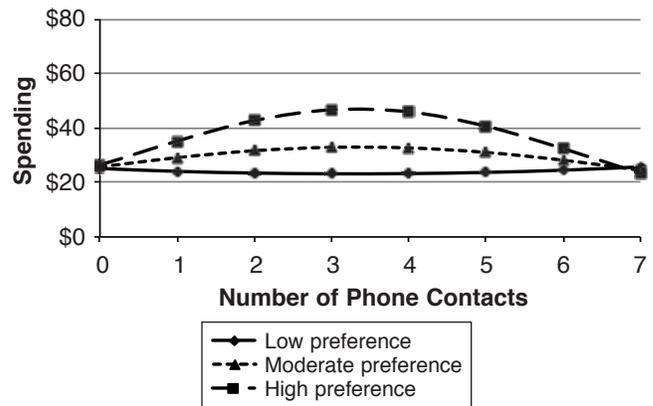
H<sub>3b</sub> receives support because the e-mail channel preference × e-mail contact volume coefficient is significantly positive. Panel B in Figure 3 shows a shift in ideal point. For customers who prefer the e-mail channel, repurchase is highest at five e-mail contacts; for customers who do not prefer that channel, repurchase is highest between two and three e-mail contacts.<sup>2</sup>

<sup>2</sup>We also examined whether a “mismatch” between channel preference and channel volume would produce a negative shift in the ideal point. Three of the 6 mismatch interactions were significantly negative: telephone preference × mail volume, e-mail preference × telephone volume, and e-mail preference × mail volume. We do not include these terms in our analyses because inclusion did not change the results for the hypothesized relationships and because our measures of (lower/higher) preference for one channel do not necessarily translate into (higher/lower) preference for another channel. For example, sending a high volume of mail communication to someone who indicates a high preference for the telephone channel does not necessarily imply a mismatch, because that person might also have a high preference for the mail channel ( $r = .13$ , Table 2).

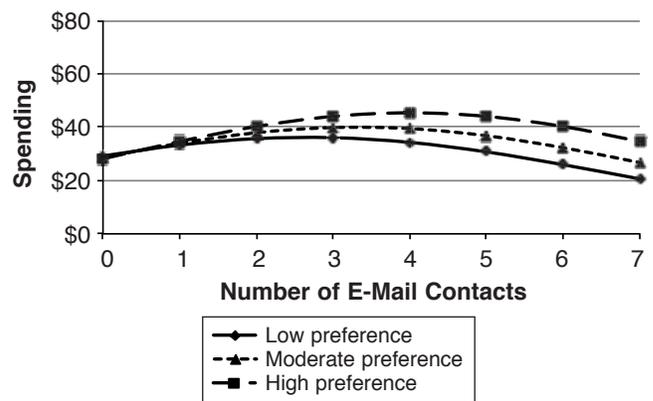
**FIGURE 3**

**Plotting Significant Preference × Volume Interaction Effects**

**A: Telephone Preference × Telephone Contacts Interaction Effect on Repurchase Spending**



**B: E-Mail Preference × E-Mail Contacts Interaction Effect on Repurchase Spending**



**Discussion**

This research was motivated by three key questions: In multichannel relational communication, is there an ideal volume? Are volume effects across channels additive or multiplicative, and if the effects are multiplicative, are the interactions positive or negative? and To what extent do customers’ channel preferences moderate the relationship between communication volume and repurchase? We use the classic ideal point to conceptualize a response continuum that reflects reciprocity followed by reactance in response to multichannel communication volume. We extend this theoretical framework to explain volume interaction effects between channels and gauge the strength of channel preferences as moderating effects.

We provide empirical support for our framework by matching longitudinal customer transaction data with relational communication records and a large-scale customer survey. Our results offer concrete answers to the research questions and yield new insights into the unintended and potentially detrimental effects of multichannel relational

communication. First, the results indicate that there is an ideal volume of relational communication that varies across channels; after the ideal point is reached, additional communication generates reactance and increasingly negative customer response. Second, we find that volume effects across channels are multiplicative and that, in contrast with prior studies that find synergies between channels, the interactions are negative, indicating that the ideal level of communication through one channel decreases as communication volume in other channels increases. Specifically, our results show that combining e-mail contacts with either telephone or mail contacts generates reactance at a faster rate; the ideal volume of e-mail contacts decreases as the number of telephone or mail contacts increases. Finally, we find that customers' preferences for the telephone and e-mail channels positively moderate the impact of communication volume through each of those channels, respectively.

### **Theoretical Implications**

Our conceptual framework shares some characteristics with the two-factor model of mass marketing repetition, as we noted previously. Experimental studies have uncovered empirical support for the two-factor model, but there has been little support in field studies. For example, in a study of television advertising, Tellis, Chandy, and Thaiwanich (2000, p. 43) conclude that their results "do not provide support for the two factor theory of advertising response ... [perhaps because] the effects of advertising frequency are too weak to register in a field setting."

One explanation for why negative consumer reactance may not manifest in a field study pertains to individual control over message processing. If a consumer leaves the room during commercial breaks or fast-forwards through commercial breaks when watching prerecorded shows, reactance does not occur because the consumer has not been compelled to expend effort to process the advertisement. Despite the widespread occurrence of message avoidance, the phenomenon has received little theoretical or empirical examination.

Our results offer tantalizing insights into the role of individual control over message processing on response to communication volume. Specifically, they suggest that reactance occurs more quickly in the telephone channel, more slowly in the e-mail channel, and much more slowly in the mail channel. Furthermore, our findings suggest that reactance occurs more quickly when customers receive communication through multiple channels and occurs more slowly when customers receive communication through channels they prefer. We speculate that these results pertain to the intrusiveness of the communication and the person's corresponding lack of control in avoiding the message.

We take the perspective that the telephone channel is the most intrusive among the three channels we examined. A telephone call disrupts the receiver in real time or, if a voice message is left, forces the receiver to process the message at least minimally to determine whether he or she wants to delete it. As a result, telephone contacts prompt reactance after three contacts per quarter on average (Figure 1, Panel A). However, this average reactance point understates sen-

sitivity toward the telephone channel. Reactance is generated at even lower volumes when customers receive high levels of e-mail contacts. For customers who prefer not to be contacted by telephone, the ideal point for telephone contacts is zero because these customers exhibit no positive response to the company's efforts to build a relationship through telephone communication. On average, these customers also repurchase less than customers who are more receptive to telephone communication. Thus, for the intrusive telephone channel in which message avoidance is difficult, reactance occurs early, and the subsequent negative effects are strong.

Following this logic, we believe that the e-mail channel is somewhat less intrusive than the telephone channel because it does not necessarily disrupt the receiver in real time. Messages can be reviewed and deleted whenever the receiver chooses, and the receiver has the ability to flag senders so that future messages go directly into a junk folder. As a result, e-mail contacts prompt reactance after four contacts per quarter on average (Figure 1, Panel B). The intrusiveness of e-mail is amplified, however, for customers who receive higher volumes of communication by telephone (Figure 2, Panel A) or mail (Figure 2, Panel B).

It seems that respondents viewed the postal mail channel as the least intrusive and the easiest to ignore, which is consistent with prior reports that consumers view unsolicited e-mail as more intrusive than postal mail (Morimoto and Chang 2006). Apparently, the ease with which direct mail is disposed of reduces activation of negative reactance. As a result, reactance did not appear until after nine mailings per quarter (Figure 1, Panel C). Given the high number of contacts required to trigger reactance and the relatively low message processing costs for direct mail, reactance to postal mail may be infrequent.

We believe that the subsequent onset of reactance toward mail contacts may inform previous failures to uncover reactance toward advertisements in field studies. The receiver's ability to retain control and avoid message processing attenuates the onset of reactance so that messages through channels such as television (in which the receiver has significant control over message processing) may rarely evoke negative reactance. These inferences are consistent with experimental research demonstrating that an inverted U-shaped response occurs when participants perform deep processing of advertisements but does not occur with shallow processing (Nordhielm 2002).

The overall story that emerges is that customers react negatively to multichannel relational communication levels that exceed their ideal point. This negative reactance is muted if customers can control and avoid exposure to the message. Customers may perceive greater control over messages sent through channels that are less intrusive or for which they have greater preference. Reactance is heightened if customers believe that control and avoidance is difficult, especially when messages come through multiple channels. These findings underscore the importance of examining the effects of multichannel communication volume by considering the impact of specific channels, individually and in combination, rather than aggregate volume. Our findings also highlight the importance of considering

individual customer characteristics, such as channel preference, that moderate the impact of relational communication on repurchase.

### **Reconciling Empirical Findings**

Our review of empirical studies examining the effect of relational communication on repurchase behavior indicates that a majority uncover effects consistent with reciprocity (see Table 1). Of the studies we examined, only one (i.e., Prins and Verhoef 2007) reports a negative interaction effect consistent with reactance, and just three (i.e., Drèze and Bonfrer 2008; Kumar, Venkatesan, and Reinartz 2008; Venkatesan and Kumar 2004) report ideal points consistent with reciprocity followed by reactance. We offer several explanations for the prevalence of reciprocity effects.

First, reactance effects may be attenuated in some contexts due to inertia or switching barriers. For example, Verhoef (2003) and Rust and Verhoef (2005) report effects consistent with reciprocity in an insurance context that can be described as an ongoing, contractual service with designated renewal periods. Generating reactance in a continuing service context, in which inertia and switching barriers are high, might require far higher communication volume than in contexts featuring repeated, noncontractual transactions, such as automobile service.

Second, the theory, research design, and analysis in prior studies may not have considered curvilinear effects. Cortina (1993, pp. 917–18) notes that there is a “bias against nonlinear hypotheses” that leads to “complex, non-additive models without consideration of possible nonlinear effects.” Of the studies in Table 1 that report linear effects consistent with reciprocity, none reports the results of tests to explore whether the relationship between communication and repurchase might be curvilinear. Thus, we cannot discern whether the underlying effects of communication were linear or curvilinear. Given emerging evidence in support of an ideal point of communication, we encourage further research to assess curvilinear effects on repurchase explicitly by including quadratic terms.

Third, including quadratic terms is especially important when examining interaction terms because underlying curvilinearity can bias tests of interaction effects (e.g., Cohen 1978; Cortina 1993). Two prior studies examining cross-channel interactions have used empirical approaches that do not include quadratic terms, which may explain the variation in their findings; one reports a positive interaction consistent with reciprocity (Reinartz, Thomas, and Kumar 2005), and the other reports a negative interaction consistent with reactance (Prins and Verhoef 2007). Another explanation for this difference is Reinartz, Thomas, and Kumar’s (2005) operationalization of cross-channel interactions as the number of times both types of communication occurred within the same month. This operationalization creates a change in the intercept rather than a change in the slope for one independent variable as a function of another.

Finally, uncovering curvilinear relationships consistent with an ideal point is sensitive to coarseness or range restrictions in measuring the independent variable (Russell and Bobko 1992). For example, Prins and Verhoef (2007)

operationalize telephone communication as a dummy variable capturing whether any telephone contact occurred in a given month; restricting the independent variable to two levels (0, 1) cannot capture curvilinear effects. De Wulf, Odekerken-Schroder, and Iacobucci (2001) measure customers’ perceptions of firm communication using a seven-point Likert scale, which creates a ceiling in assessing the level of communication. In contrast, studies supporting an ideal point use independent measures with unrestricted distributions, such as the number of contacts and number of days since the last contact (Drèze and Bonfrer 2008; Kumar, Venkatesan, and Reinartz 2008).

In summary, plausible theoretical, methodological, and substantive explanations exist for the prevalence of reciprocity effects in prior research, which should encourage additional research to try to understand when customers are likely to demonstrate reciprocity or reactance in response to relational communication.

### **Managerial Implications**

Increased access to individual-level customer information has accelerated the use of targeted, multichannel communication. Despite significant financial investments, firms have surprisingly limited knowledge about how the simultaneous use of multiple communication channels affects customer response. Our results can inform multichannel communication practice to strengthen customer relationships effectively without wasting firm resources.

Managers should carefully identify which channels are most effective in reaching their customers and avoid the assumption that different communication channels exert equivalent effects. As an example, the low cost per contact and quick execution of e-mail might encourage companies to increase the proportion of e-mail contacts, under the assumption that e-mail communication is equally effective. Our industry partner increased the proportion of e-mail communication from 2% of total contacts in the first quarter to 10% in the twelfth quarter. This increased allocation is not warranted if the e-mail channel is less effective than other channels in driving customer repurchase. As Figure 1 illustrates, this firm’s customers are far more responsive to mail contacts than to either telephone or e-mail contacts.

To maximize repurchase and minimize the likelihood of negative customer reactance, managers should monitor total contact volume and explore how specific channel combinations may shift the ideal point. Our results show that e-mail combines poorly with both telephone and mail contacts, producing a decline in customer spending (Figure 2, Panels A and B). Conversely, the absence of a negative interaction between telephone contacts and mail contacts suggests that customers respond better to this combination than to the other combinations.

To exploit revealed channel preferences, firms should develop protocols that limit total communication through all channels and specify effective combinations of channels. For example, the cross-channel interactions in our study point to two segments: (1) customers who respond positively to traditional telephone and mail channels and (2) customers who respond positively to the technological e-

mail channel. To investigate the spending implications of targeting these segments, we used the coefficient estimates in Model 5 to simulate the impact of three relational communication strategies, holding all other independent variables at mean values.

First, we examined the effect of using equal numbers of telephone and mail contacts but no e-mail contacts. This strategy should generate positive reciprocity among customers who prefer telephone and mail contacts but negative reactance among those who prefer e-mail contacts. Second, we examined the effect of using only e-mail contacts but no telephone or mail contacts. This strategy likely generates positive reciprocity among customers who prefer e-mail contacts but negative reactance among those who prefer telephone and mail contacts. Third, we examined the effect of using equal numbers of telephone, mail, and e-mail contacts, which likely generates reactance from both customer segments.

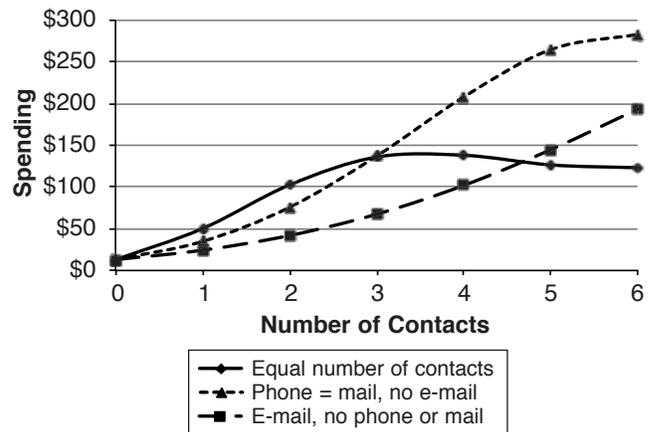
As Figure 4 shows, when the number of contacts is less than three, customers respond most positively to equal numbers of contacts across all three channels. However, negative reactance appears after the number of contacts through each channel reaches four, and spending subsequently decreases. Customer spending is actually higher in response to six e-mail contacts and no telephone or mail contacts than it is in response to five e-mail, five telephone, and five mail contacts combined. This finding reinforces the results that indicate negative interactions between e-mail and telephone contacts and between e-mail and mail contacts (Figure 2, Panels A and B).

Customer spending is highest in response to a strategy that combines an equal number of telephone and mail contacts (but no e-mail), peaking at nearly \$300 when the company sends six contacts through each channel. These results suggest that the telephone and mail channels may exert complementary, independent effects on customer repurchase (Voss, Godfrey, and Seiders 2010).

### Limitations and Further Research

This research has several limitations. Our study focuses on repurchase visits and spending as the outcome measures in a single purchase category. Further research should consider the extent to which multichannel relational communication triggers reactance with respect to other purchase outcomes, including share of wallet, interpurchase time, cross-buying, and customer defection, as well as in other purchase categories. Although we expect to find similar pat-

**FIGURE 4**  
Simulated Results of Three Relational Communication Strategies



terns of results across outcomes, we anticipate that customer response to volume of communication, individual communication channels, and specific combinations of channels may vary across industries. The automotive service context represents a low-involvement, utilitarian purchase category in which inertia may play a significant role in repurchase behavior. Studies should assess whether reactance becomes manifest at higher or lower volumes of communication in high-involvement or hedonic purchase categories in which the role of habituation is less prominent.

Further research should also explicate different relational communication effects in business-to-business (B2B) versus business-to-consumer settings (B2C). For example, the negative interactions between channels in our research contradict prior findings that support a positive interaction between channels in a B2B context (Reinartz, Thomas, and Kumar 2005). B2B contexts may not elicit negative reactance because the perceived invasiveness of relational communication is not activated in a commercial setting. In B2B contexts, multichannel communication may be viewed as a normal aspect of the business process, whereas in B2C contexts, customers may view this practice as an intrusion on their personal space and time. We hope that our study motivates further research that offers additional insights into the dark side of relational communication efforts—research that identifies when enough is enough.

## APPENDIX

### Measurement Details for Each Variable

Variable	Label	Operationalization	Data Source
<b>Dependent Variables</b>			
Repurchase spending	SPEND <sub>i</sub>	Repurchase spending dollars by customer <i>i</i> during the current quarter	Transaction database
Repurchase visits	VISIT <sub>i</sub>	Number of repurchase visits by customer <i>i</i> during the current quarter	Transaction database

**APPENDIX  
Continued**

Variable	Label	Operationalization	Data Source
<b>Control Variables</b>			
Quarter	TIME	Current quarter, from 1 to 12	Transaction database
Lagged repurchase spending	lagSPEND <sub>i</sub>	Repurchase spending dollars by customer <i>i</i> during the previous quarter	Transaction database
Lagged repurchase visits	lagVISIT <sub>i</sub>	Number of repurchase visits by customer <i>i</i> during the previous quarter	Transaction database
Warranty work	WW <sub>i</sub>	Repurchase spending dollars covered by warranty	Transaction database
Vehicle ownership	VEH <sub>i</sub>	Number of vehicles owned by customer <i>i</i>	Transaction database
Household income	HI <sub>i</sub>	Median household income reported in the 2000 census for customer <i>i</i> 's zip code	Transaction database/census data
Moved address	MOVE <sub>i</sub>	Dichotomous variable indicating whether customer <i>i</i> 's address changed from the previous quarter (1 = yes, 0 = no)	Transaction database
<b>Exogenous Independent Variables</b>			
Telephone channel preference	PrefPHONE <sub>i</sub>	Survey item: I prefer SP <sup>a</sup> contact me by telephone.	Survey
E-mail channel preference	PrefEMAIL <sub>i</sub>	Survey item: I prefer SP contact me by e-mail.	Survey
Mail channel preference	PrefMAIL <sub>i</sub>	Survey item: I prefer SP contact through the mail.	Survey
<b>Endogenous Independent Variables</b>			
Telephone contact volume	PHONE <sub>i</sub>	Number of outgoing marketing contacts directed toward customer <i>i</i> by telephone	Contact records
E-mail contact volume	EMAIL <sub>i</sub>	Number of outgoing marketing contacts directed toward customer <i>i</i> by e-mail	Contact records
Mail contact volume	MAIL <sub>i</sub>	Number of outgoing marketing contacts directed toward customer <i>i</i> by mail	Contact records

<sup>a</sup>SP = Service provider.

## REFERENCES

- Alba, Joseph, John Lynch, Barton Weitz, Chris Janiszewski, Richard Lutz, Alan Sawyer, and Stacey Wood (1997), "Interactive Home Shopping: Consumer, Retailer, and Manufacturer Incentives to Participate in Electronic Marketplaces," *Journal of Marketing*, 61 (July), 38–53.
- Anand, Punam and Brian Sternthal (1990), "Ease of Message Processing as a Moderator of Repetition Effects in Advertising," *Journal of Marketing Research*, 27 (August), 345–53.
- Bagozzi, Richard P. (1995), "Reflections on Relationship Marketing in Consumer Markets," *Journal of the Academy of Marketing Science*, 23 (4), 272–77.
- Becker, Lawrence C. (1990), *Reciprocity*. Chicago: University of Chicago Press.
- Berlyne, Donald E. (1970), "Novelty, Complexity, and Hedonic Value," *Perception and Psychophysics*, 8 (5A), 279–86.
- Boulding, William, Richard Staelin, Michael Ehret, and Wesley J. Johnston (2005), "A Customer Relationship Management Roadmap: What Is Known, Potential Pitfalls, and Where to Go," *Journal of Marketing*, 69 (October), 155–66.
- Brehm, Jack W. (1966), *A Theory of Psychological Reactance*. New York: Academic Press.
- Chow, Gregory C. (1964), "A Comparison of Alternative Estimators for Simultaneous Equations," *Econometrica*, 32 (October), 532–53.
- Clee, Mona A. and Robert A. Wicklund (1980), "Consumer Behavior and Psychological Reactance," *Journal of Consumer Research*, 6 (March), 389–405.
- Cohen, Jacob (1978), "Partialled Products are Interactions: Partialled Powers Are Curve Components," *Psychological Bulletin*, 85 (4), 858–66.
- Cortina, Jose M. (1993), "Interaction, Nonlinearity, and Multicollinearity: Implications for Multiple Regression," *Journal of Management*, 19 (4), 915–22.
- Dahl, Darren W., Heather Honea, and Rajesh V. Manchanda (2005), "Three Rs of Interpersonal Consumer Guilt: Relationship, Reciprocity, Reparation," *Journal of Consumer Psychology*, 15 (4), 307–315.
- De Wulf, Kristof, Gaby Odekerken-Schroeder, and Dawn Iacobucci (2001), "Investments in Consumer Relationships: A Cross-Country and Cross-Industry Exploration," *Journal of Marketing*, 65 (October), 33–50.
- Drèze, Xavier and André Bonfrer (2008), "An Empirical Investigation of the Impact of Communication Timing on Customer Equity," *Journal of Interactive Marketing*, 22 (1), 36–50.
- Fitzsimons, Gavan J. and Donald R. Lehmann (2004), "Reactance to Recommendations: When Unsolicited Advice Yields Contrary Responses," *Marketing Science*, 23 (1), 82–94.

- Fournier, Susan, Susan Dobscha, and David Glen Mick (1997), "Preventing the Premature Death of Relationship Marketing," *Harvard Business Review*, 75 (January/February), 2–8.
- Green, Paul E. and V. Srinivasan (1978), "Conjoint Analysis in Consumer Research: Issues and Outlook," *Journal of Consumer Research*, 5 (2), 103–123.
- Green, William H. (1990), *Econometric Analysis*. New York: Macmillan.
- Hausman, Jerry A. (1978), "Specification Tests in Econometrics," *Econometrica*, 46 (6), 1251–71.
- Heckman, James J. (1979), "Sample Selection Bias as a Specification Error," *Econometrica*, 47 (January), 153–61.
- Hsiao, Cheng (2004), *Analysis of Panel Data*. Cambridge, UK: Cambridge University Press.
- Kass, Robert and Adrian E. Raftery (1995), "Bayes Factors," *Journal of the American Statistical Association*, 90 (June), 773–95.
- Kivetz, Ran (2005), "Promotion Reactance: The Role of Effort-Reward Congruity," *Journal of Consumer Research*, 31 (March), 725–36.
- Kumar, V., Rajkumar Venkatesan, and Werner Reinartz (2008), "Performance Implications of Adopting a Customer-Focused Sales Campaign," *Journal of Marketing*, 72 (September), 50–68.
- Lilien, Gary L., Philip Kotler, and K. Sridar Moorthy (1992), *Marketing Models*. Englewood Cliffs, NJ: Prentice Hall.
- Luo, Xueming and Naveen Donthu (2006), "Marketing's Credibility: A Longitudinal Investigation of Marketing Communication Productivity and Shareholder Value," *Journal of Marketing*, 70 (October), 70–91.
- Mohr, Jakki and John R. Nevin (1990), "Communication Strategies in Marketing Channels: A Theoretical Perspective," *Journal of Marketing*, 54 (October), 36–51.
- Morimoto, Mariko and Susan Chang (2006), "Consumers' Attitudes Toward Unsolicited Commercial Email and Postal Direct Mail Marketing Methods: Intrusiveness, Perceived Loss of Control, and Irritation," *Journal of Interactive Advertising*, 7 (1), 8–20.
- Naik, Prasad A. and Kalyan Raman (2003), "Understanding the Impact of Synergy in Multimedia Communications," *Journal of Marketing Research*, 40 (November), 375–88.
- Nordhielm, Christie L. (2002), "The Influence of Level of Processing on Advertising Repetition Effects," *Journal of Consumer Research*, 29 (December), 371–82.
- Palmatier, Robert W. (2008), *Relationship Marketing*. Boston: Marketing Science Institute.
- , Cheryl Burke Jarvis, Jennifer R. Bechhoff, and Frank R. Kardes (2009), "The Role of Customer Gratitude in Relationship Marketing," *Journal of Marketing*, 73 (September), 1–18.
- Prins, Remco and Peter C. Verhoef (2007), "Marketing Communication Drivers of Adoption Timing of a New E-Service Among Existing Customers," *Journal of Marketing*, 71 (April), 169–83.
- Reinartz, Werner, Jacquelyn S. Thomas, and V. Kumar (2005), "Balancing Acquisition and Retention Resources to Maximize Customer Profitability," *Journal of Marketing*, 69 (January), 63–79.
- Rethans, Arno J., John L. Swasy, and Lawrence J. Marks (1986), "Effects of Television Commercial Repetition, Receiver Knowledge, and Commercial Length: A Test of the Two-Factor Model," *Journal of Marketing Research*, 23 (February), 50–61.
- Roberts, Mary L. and Paul D. Berger (1999), *Direct Marketing Management*. Upper Saddle River, NJ: Prentice Hall.
- Robertson, Thomas S. and John R. Rossiter (1974), "Children and Commercial Persuasion: An Attribution Theory Analysis," *Journal of Consumer Research*, 1 (1), 13–20.
- Russell, Craig J. and Philip Bobko (1992), "Moderated Regression Analysis and Likert Scales: Too Coarse for Comfort," *Journal of Applied Psychology*, 77 (3), 336–42.
- Rust, Roland T. and Peter C. Verhoef (2005), "Optimizing the Marketing Intervention Mix in Intermediate-Term CRM," *Marketing Science*, 24 (3), 477–89.
- Sawyer, Alan G. (1981), "Repetition and Cognitive Response," in *Cognitive Responses in Persuasion*, R.E. Petty, T. Ostrum, and T.C. Brock, eds. Hillsdale, NJ: Lawrence Erlbaum Associates, 237–62.
- Stang, David J. (1975), "The Effects of Mere Exposure on Learning and Affect," *Journal of Personality and Social Psychology*, 31 (1), 7–13.
- Teas, R. Kenneth (1993), "Expectations, Performance Evaluations, and Consumers' Perceptions of Quality," *Journal of Marketing*, 57 (October), 18–34.
- Tellis, Gerard J., Rajesh K. Chandy, and Pattana Thaivanich (2000), "Which Ad Works, When, Where, and How Often? Modeling the Effects of Direct Television Advertising," *Journal of Marketing Research*, 37 (February), 32–46.
- Venkatesan, Rajkumar and V. Kumar (2004), "A Customer Lifetime Value Framework for Customer Selection and Resource Allocation Strategy," *Journal of Marketing*, 68 (October), 106–125.
- Verhoef, Peter C. (2003), "Understanding the Effect of Customer Relationship Management Efforts on Customer Retention and Customer Share Development," *Journal of Marketing*, 67 (October), 30–45.
- Voss, Glenn B., Andrea L. Godfrey, and Kathleen Seiders (2010), "How Complementarity and Substitution Alter the Customer Satisfaction-Repurchase Link," *Journal of Marketing*, 74 (November), 111–27.
- Wendlandt, Mark and Ulf Schrader (2007), "Consumer Reactance Against Loyalty Programs," *Journal of Consumer Marketing*, 24 (5), 293–304.
- Wicklund, Robert A., Valerie Slattum, and Ellen Solomon (1970), "Effects of Implied Pressure Toward Commitment on Ratings of Choice Alternatives," *Journal of Experimental Social Psychology*, 6 (4), 449–57.

Copyright of Journal of Marketing is the property of American Marketing Association and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.