

**NEVER PROMISE MORE THAN YOU CAN DELIVER: PSYCHOLOGICAL
CONTRACT VIOLATION IN RECOMMENDATION AGENT USE**

PREVIEW

**NEVER PROMISE MORE THAN YOU CAN DELIVER: PSYCHOLOGICAL
CONTRACT VIOLATION IN RECOMMENDATION AGENT USE**

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of the requirements for the degree of
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ABSTRACT

Although electronic-commerce (e-commerce) has grown rapidly over the last decade, it still represents only a very small share of total retail sales. One major reason for this low share is the immense product choices offered by digital marketplaces result in excessive information processing demands on consumers, making it difficult them to identify products that meet their needs. To address this challenge, e-commerce websites increasingly offer personalized advice giving technologies, such as recommendation agents (RAs). RAs are software tools that attempt to understand individual users' preference function implicitly or explicitly and make recommendations accordingly. As there is an enormous potential for e-commerce yet to be exploited, there is a need for researchers as well as practitioners to examine how RAs can alleviate challenges faced by consumers and enhance their decision making while conducting online purchases.

There has been a vast body of research studying RA use and outcomes, such as decision quality and trust. While rich insights have emerged from this stream of research, the impact of psychological obligations that users perceive RAs have towards them has been relatively under-researched. This dissertation, organized into three essays, investigates how do unfulfilled obligations by an RA affect user perceptions and behavior. Essay 1 integrates the rich psychological contract literature with theories of social response to technology, trust in technology, and technology adoption to understand the role of unmet obligations in RA–user relationship. This essay contends that a psychological contract breach causes a negative emotional reaction, called a psychological contract violation, which, via trust and usefulness perceptions, influences users' intentions to follow an RA's recommendation. Essay 2 focuses on the role of

design features in reducing the likelihood of a psychological contract breach in a user-RA relationship. This essay proposes that design features, such as the preference elicitation interface and explanation facilities, play a critical role in influencing user perceptions of a psychological contract breach. Finally, essay 3 examines the role of personality to explain individual differences in the RA–user relationship. Recent developments in the Information Systems literature have highlighted the role of dispositional factors in explaining individual differences in the technology acceptance and use. However, the influence of personality on consumer attitudes, cognitions, and behaviors has received very little attention. Essay 3 addresses this gap by arguing that consumers with different personality traits react differently when RAs do not deliver what they promise.

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PREVIEW

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PREVIEW

I. INTRODUCTION

Electronic-commerce (e-commerce) has grown rapidly over the last decade (Papamichail and Papamichail 2007; Qiu and Benbasat 2009). Still it represents only a very small share of total retail sales. According to the U.S. Census Bureau, internet shopping for 2010 is about 3.2% of total retail sales (Census 2010). One major reason for this low share is that the immense product choices offered by digital marketplaces result in excessive information processing demands on consumers, making it difficult for them to identify products that meet their needs (Kraut et al. 2005; Oppong et al. 2005; Singh et al. 2005). To address this challenge, digital marketplaces increasingly offer personalized advice giving technologies such as recommendation agents (RAs; Komiak and Benbasat 2007). RAs are software tools that attempt to understand individual users' preference function implicitly or explicitly and make recommendations accordingly (Bechwati and Xia 2003; Xiao and Benbasat 2007). Use of such advice giving technologies has the potential to enhance consumer's usefulness and trust perceptions. As there is an enormous potential for e-commerce yet to be exploited, there is a need for researchers as well as practitioners to examine how RAs can alleviate challenges faced by consumers and enhance their decision making while conducting online purchases.

There has been a vast body of research studying RA use and outcomes such as decision quality (e.g., Komiak and Benbasat 2006) and trust (e.g., Wang and Benbasat 2009). Studies have also examined the interaction between user and RA (e.g., Al-Natour et al. 2008). More recently, Xiao and Benbasat (2007) have used expectation-disconfirmation paradigm to propose that confirmation or positive disconfirmation

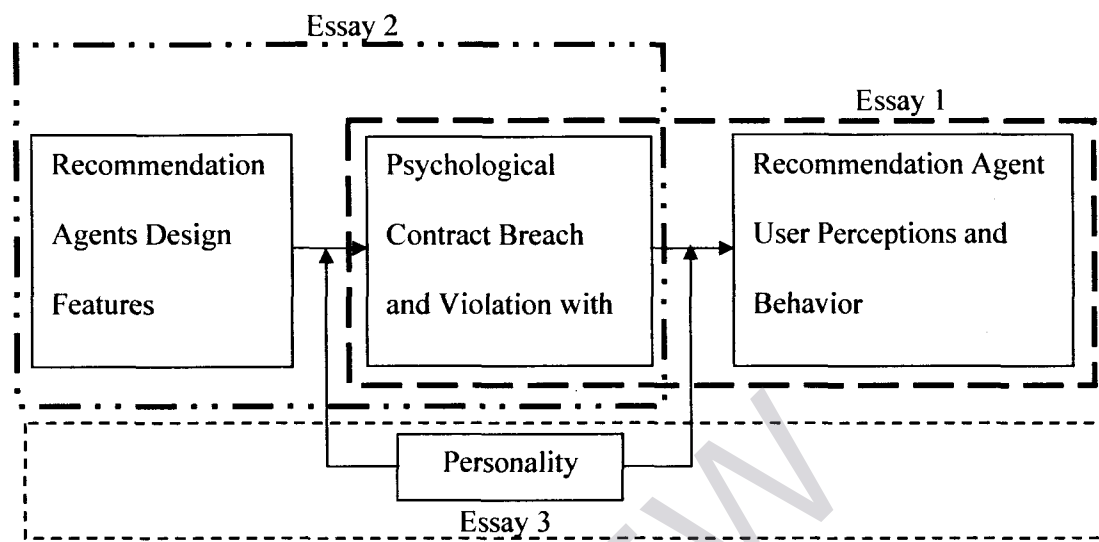
(experiences exceeding expectations) would increase user satisfaction whereas negative disconfirmation (expectations exceeding experiences) would decrease user satisfaction. While rich insights have emerged from this stream of research, the impact of psychological obligations that users perceive RAs have towards them has been under-researched. Management and organizational behavior literature (e.g., Robinson and Brown 2004; Rosen et al. 2009; Rousseau 1995; Zhao et al. 2007), has shown that the negative impact of unmet obligations goes well beyond the impact of negative disconfirmation.

This dissertation investigates how do unfulfilled obligations by an RA affect user perceptions and behavior. A psychological contract is defined as one party's belief about reciprocal obligations between two parties (Morrison and Robinson 1997; Thompson and Hart 2006). Obligations are defined as beliefs held by each party that they are bound by a promise or a debt to an action or course of action in relation to the other party (Robinson and Brown 2004; Robinson and Morrison 2000). Cognitive awareness that something promised has not been received is called a psychological contract breach, whereas the emotional experience emanating from the interpretation of the breach in a given context is called psychological contract violation (De Vos et al. 2003).

This dissertation is organized into three essays. Essay 1 draws from the rich psychological contract literature to examine the role of unmet obligations in RA–user relationship. Theories of social response to technology, trust in technology, and technology adoption are used to adapt psychological contract theory from the interpersonal domain to user-RA domain. This essay will contend that a psychological contract breach will cause a negative emotional reaction, called a psychological contract

violation, which, via trust and usefulness perceptions, will influence users' intentions to follow an RA's recommendation. Essay 2 focuses on design features of a RA that would help reduce the likelihood of users perceiving a psychological contract breach with an RA. This research proposes that design features, such as the preference elicitation interface and explanation facilities, play a critical role in influencing user perceptions of a psychological contract breach. Finally, essay 3 examines the role of personality to explain individual differences in the RA–user relationship. Recent developments in the IS literature (e.g., Devaraj et al. 2008; McElroy et al. 2007) have highlighted the role of dispositional factors in explaining individual differences in the technology acceptance and use. However, the influence of personality on consumer attitudes, cognitions, and behaviors has received very little attention. We address this gap by arguing that consumers with different personality traits react differently when RAs do not deliver what they promise. The overall research framework is presented in Figure 1.

Figure 1. Research Framework



II. PSYCHOLOGICAL CONTRACT VIOLATION IN RECOMMENDATION AGENT USE

A. ABSTRACT

We examine whether psychological contract theory can explain users' responses to e-commerce recommendation agents (RAs). Theories of social response to technology, trust in technology, and technology adoption are used to adapt psychological contract theory from the interpersonal domain to user-RA domain. We theorize that a psychological contract breach will cause a negative emotional reaction, called a psychological contract violation, which, via trust and usefulness perceptions, will influence users' intentions to follow an RAs' recommendation. First study elicited perceived user-RA mutual obligations, which form the basis for the posited psychological contract. Using a sample of 102 participants, Study 2 tested the effect of breaching these obligations on theorized emotional, cognitive, and behavioral reactions to the RA using experimental RAs. Using a sample of 269 subjects, study 3 confirmed these findings. If principles of psychological contract theory can be successfully adapted from the human-human to the human-RA domain, insights can be gained about how to design RAs to achieve important business results and avoid negative side effects.

B. INTRODUCTION

Recommendation agents (RAs) are software tools provided on electronic-commerce (e-commerce) websites that attempt to understand individual users' preference function implicitly or explicitly and make product recommendations accordingly (Bechwati and Xia, 2003; Xiao and Benbasat, 2007). The trade press shows an

increasing interest in the development of RAs by major web vendors. *The New York Times* and *BusinessWeek* reported that online movie rental service, Netflix Inc., paid \$1 million to a team for improving the accuracy of its movie recommendations (Hafner 2006; MacMillan 2009). The central motivation in these investments is that “[RAs] hold out the promise of making shopping on the internet better not just by finding lower prices but by matching products to the needs of the customers” (Aggarwal and Vaidyanathan, 2003b, p. 159). But, use of RAs to provide recommendations is not entirely without risk. Unfulfilled promises by an RA may cause negative consequences not only for the RA but also for the web vendor associated with the RA. For example, Wal-Mart Inc., world’s largest retailer, was forced to permanently remove a movie recommending RA from its website when the RA provided customers with incorrect and offensive recommendations (Flynn 2006). Moreover, incorrect or misleading recommendations provided by RAs may also result in a class-action lawsuit against the web vendors (Heckman and Wobbrock 1999). Therefore, understanding the influence of unfulfilled promises would help researchers, as well as practitioners, design more effective RAs and explain when and why users would follow the recommendations of an RA and purchase the recommended products.

The purpose of this research is to understand the role of obligations in a human-RA relationship. A vast body of marketing and consumer research (e.g., Haubl and Murray 2003, 2006; Häubl and Trifts 2000; Murray and Haubl 2005) as well IS research (e.g., Al-Natour et al. 2008; Komiak and Benbasat 2006; Wang and Benbasat 2007, 2009) has examined the factors that influence consumer decision making in online shopping. A consistent theme in this stream of research is that RAs have the potential to support and

improve the quality of decisions consumers make. Moreover, these RAs reduce the problems associated with information overload and complexity of online searches while searching for and selecting products (Kleinmuntz 1991; Xiao and Benbasat 2007). It is also well documented that using a decision aid does not always result in improved decision quality and increased effectiveness (see Lilien et al. 2004; Mackay and Elam 1992; Parasuraman and Riley 1997). However, the negative influence of unmet obligations—i.e., when RA fails to deliver what it promised—is still largely under-researched. There is a strong evidence in the management, the organizational behavior, and the IS literature that suggests that when psychological contracts between humans and agents are not fulfilled, the consequences are very intense as the reaction is not only attributable to the unmet expectations but also to other beliefs such as codes of conduct and the respect for the relationships (Koh et al. 2004; Pavlou and Gefen 2005; Robinson and Brown 2004; Rosen et al. 2009; Rousseau 1995; Thompson and Hart 2006). Therefore, examining why and how unmet obligations would influence consumer decision making in online stores would help researchers better understand the human-RA relationship.

Recently, Xiao and Benbasat (2007) has used expectation-disconfirmation paradigm (see also, Bhattacharjee and Premkumar 2004; Oliver 1980) to propose that the confirmation (experiences meeting expectations) or the positive disconfirmation (experiences exceeding expectations) would increase user satisfaction with an RA whereas the negative disconfirmation (expectations exceeding experiences) would decrease the user satisfaction with an RA. While rich insights have emerged from their (Xiao and Benbasat 2007) proposition, the impact of psychological obligations that an

RA has towards the user is still not been understood. Management and organizational behavior literature (e.g., Morrison and Robinson 1997; Robinson 1996; Robinson et al. 1994; Rosen et al. 2009), has shown that the obligations are distinct from expectations as the expectations are general beliefs about what an employee will find in their job whereas the obligations are what employees believe they are entitled to receive because employer conveyed promises to deliver those things. Further, Robinson (1996) argues that “not all expectations emanate from perceived promises and expectations can exist in the absence of perceived promises” (p. 575). For example, users may *expect* an RA to provide them with the least expensive product based on a wide variety of sources such as past experiences or observations by friends. However, if the RA explicitly or implicitly promises to provide least expensive products (e.g., www.pricegrabber.com), it creates not only an expectation but also an obligation that is a part of users’ psychological contract.

A *psychological contract* is defined as one party’s belief about reciprocal obligations between the two parties (Robinson and Brown 2004; Rousseau 1995). *Obligations* are defined as beliefs held by each party that they are bound by a promise or a debt to an action or a course of action in relation to the other party (Robinson 1996; Robinson and Morrison 2000). Cognitive awareness that something promised has not been received is called a *psychological contract breach*, whereas the emotional experience emanating from the interpretation of the breach in a given context is called a *psychological contract violation* (De Vos et al. 2003; Thompson and Bunderson 2003; Thompson and Hart 2006).

In the present research, we first use theory of social response (Moon 2000; Moon and Nass 1996) to explain how and why psychological contract theory, which has been

used to explain inter-personal relationships, can also be used to better understand the human-RA relationship (hereafter referred to as the user-RA relationship). We then present some of the dimensions along which we believe a psychological contract would exist between a user and an RA. Finally, we develop a theoretical model to explain how and why an online consumer's perception that an RA breached their psychological contract would influence their decision making and key beliefs of trust and usefulness.

Given this backdrop, the current work has the following objectives:

1. Develop and empirically test a research model that explains an online consumer's perception and behavior; and
2. Understand the role of obligations in a human-RA relationship.

C. THEORETICAL BACKGROUND

Before moving to the theory development, it is very important to define some of the key constructs studied in this research and also outline some of the key boundary conditions and assumptions.

1. Recommendation Agents

RAs are software agents that elicit preferences and interests of users and make product recommendations that best fit users' measured responses (for a review, see Gershoff et al. 2001; Xiao and Benbasat 2007). Although there are various typologies for RAs, Xiao and Benbasat (2007) argue that the most commonly used typology is based in the filtering methods—i.e., *content-filtering* RAs and *collaborative filtering* RAs. RAs that explicitly ask users to provide information regarding attributes that are most important to them are called content-filtering RAs. RAs that make product recommendations based on preferences of similar consumers using a variety of data-

mining algorithms are called collaborative filtering RAs (Ansari et al. 2000; Swaminathan 2003). Examples of current commercial implementations of content-filtering RAs include Yahoo Shopping and My Product Advisor and collaborative-filtering RAs include Amazon and Netflix. Because content-filtering RAs require users to explicitly state their preferences and attribute levels for these preferences, they may require higher user effort than collaborative filtering RAs (Ansari et al. 2000). However, irrespective of the type of the RA, users have to spend effort in evaluating the recommending products and making a decision. Moreover, it is also possible that the effort spent in evaluating recommendation made by a collaborative-filtering RA may be more than the content-filtering RA because prior research (e.g., Kramer 2007) has shown that users need to identify and understand their stated preferences to evaluate product recommendations.

2. Psychological Contracts

A *psychological contract* refers to individuals' perceptions of what they owe to the other party and what the other party owes to them (Rosen et al. 2009; Rousseau 1995; Zhao et al. 2007). A *psychological contract breach* refers to subjective perception that other party has failed to adequately fulfill promised obligations (Koh et al. 2004; Robinson and Brown 2004; Rousseau 1998). The emotional reaction to the interpretation of the breach experience is termed as a *psychological contract violation* (Robinson and Brown 2004). It is important to note here that the psychological contract lies in the “*eyes of the beholder*” (Rousseau 1995) such that both the parties in the contract may not necessarily share the common understanding of the contract terms or share the perception that an actual contract breach took place (Morrison and Robinson 1997; Robinson 1996).

Therefore, in the present study, the focal point of interest is not actual breach of the psychological contract, but the users' perception of the psychological contract breach and the behavioral and attitudinal consequences of this breach.

Extant psychological contract research demonstrates that when a psychological contract is fulfilled, individuals experience positive outcomes such as greater satisfaction and increased commitment (Pavlou and Gefen 2005; Robinson and Morrison 2000; Rousseau 1995; Zhao et al. 2007). However, when a psychological contract is violated, individuals tend to experience negative attitudinal and behavioral consequences (Rosen et al. 2009). Because a psychological contract violation erodes beliefs in the good faith and the fair dealing (Robinson et al. 1994), individuals experience attitudinal consequences such as low commitment, low satisfaction, and high intentions to quit (Robinson and Brown 2004). Some of the key behavioral consequences of a psychological contract violation include high turnover, lower performance, and lower citizenship behaviors (Robinson and Brown 2004; Robinson et al. 1994). The key argument for these behavioral consequences is that a contract violation may subject an employee to feelings of injustice and betrayal (Robinson and Morrison 2000).

A psychological contract breach is inherently subjective and perceptual such that it may arise out of actual contract breach or just a misunderstanding on the part of the user (Robinson et al. 1994; Robinson and Rousseau 1994). Robinson and Morrison (2000) outline reneging and incongruence as the two key antecedents of a psychological contract breach. *Reneging* refers to purposeful breach of the contract because the breaching party is unable to or unwilling to fulfill terms of the contract (see also, Thompson and Bunderson 2003). *Incongruence* refers to the inadvertent breach that