APPLYING ATTRIBUTION THEORY TO IS RESEARCH AS A PRACTICAL METHOD FOR ASSESSING POST-ADOPTION BEHAVIOUR

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Abstract

Researchers and practitioners alike see great value in understanding the implementation, adoption, and use of technology, and acknowledge the need to better understand post-adoption behaviour. Among theories that explain and predict human behaviour, attribution theory is recognised for its extensive investigation of behaviour's antecedents and consequences. This paper provides an overview of the theory, suggests a practical method for using it in IS contexts, and shows evidence that this method provides meaningful results. In order to address the complexities encountered in field-work, this paper argues that system-usage can be treated as an interpersonal relationship between the user and the system. This perspective allows us to draw on extensive knowledge gained in the field of interpersonal relationships research, in particular a relationship diagnostics method that uses interview data, followed by an analysis of the attributions mentioned in the interviews. The paper provides evidence from a study that successfully used attribution theory in this way to investigate a non-interpersonal relationship – an employee-organisation relationship. The paper concludes with suggestions for future research in IS based on this method.

Keywords: Attribution theory, Post-adoption behaviour, Measuring attribution, Usability evaluation.

1   Introduction

Researchers and practitioners alike see great value in understanding post-adoption behaviour, and acknowledge the need to understand the implementation, adoption, and use of technology (Lucas Jr. et al., 2008, p. 209). So far, the investigation of individual post-adoption behaviour has resulted in various rich and insightful research streams (Venkatesh et al., 2007, Lucas Jr. et al., 2008). Despite the long research history and promising advances it has made, post-adoptive behaviour is still seen as a field at its "early stage of development" (Jasperson et al., 2005, p. 531), for which research opportunities are abundant (Kelley et al., 2013, pp. 8-9).

A promising opportunity for this research area exists in drawing on *attribution theory*, a commonly used theory for explaining and predicting human behaviour (Gregor, 2006, Martinko et al., 2007, Harvey et al., 2008, Kelley and Michela, 1980). Although attribution theory has been previously recognised by prominent IS researchers (eg. Lamb and Kling, 2003), and was even mentioned in the development of the Technology Acceptance Model (Davis, 1989), this theory has rarely been used in IS post-adoptive behaviour research. One rare example was recently published by Kelley *et al.* (2013), who also called for further use of attribution theory in this area, a call to which this paper responds.

Attribution theory is useful in this area because of its extensive understanding of how people make sense of actors around them, and how this sense-making affects their future behaviour with respect to those actors. This attributional sense-making plays an important role in usage and post-adoptive behaviour. For example, if the user fails to complete a task using the new system and attributes the failure to the system's incompetence ("*this system is not addressing the needs of my job*"), the user is likely to avoid future use of the system, if they can, whereas if they attribute the failure to a temporary fault of their own ("*I didn't pay attention when they explain how to use this system*"), they are more likely to attempt further usage (Kelley et al., 2013).

The limited attention that attribution theory has received in technology adoption research is likely due to two main problems: (1) the complexity of the theoretical perspective, and (2) the difficulty in measuring attribution in field settings (Kelley et al., 2013). We attempt to address both problems in this paper. The first problem is addressed by providing a clear and succinct description of attribution theory's perspective in the next section. The second problem is addressed by taking an innovative perspective on technology usage and adoption, treating it as a relationship between the user and the system. While attribution theory has been mostly applied to study interpersonal (i.e., human-human) relationships, the work reported here shows that drawing on attributional tools from interpersonal research also offers great benefits to the understanding of a non-interpersonal (i.e., human – non-human) relationships. Our work presents as an example the study of such a non-interpersonal relationship – a relationship between employees and their organisation. Similar to how Actor-Network Theory views non-human entities as valid relationship partners, we treat an organisation as a non-human entity because organisations are not made only of people. Employees interact with their organisations also via their interactions with groups of people (e.g., top management, committees, etc.), and via policies and rules. A thorough comparison between an interpersonal relationship and an employee-organisation relationship is outside the scope of this paper, and is addressed elsewhere (Alony et al., Forthcoming). The work presented here shows that attribution towards a non-human entity can be tapped into using qualitative interviews, and that capturing these attributions offers useful insight into the non-interpersonal relationship.

The paper is structured as follows: first we provide a brief description of the main tenants of attribution theory. We then make an argument for our theoretical foundation of viewing usage as a relationship, and describe how attribution can be used to study a relationship. Next, we provide a description of our methodology, followed by a presentation of our results. We complete this paper with a discussion of our findings, and their implication for future research in IS.

2   Attribution Theory

Attribution theory deals with how and why people form an opinion about the reasons for an event or observation (Winkler, 2010). This theory is based on the idea that perception is the foundation of human understanding, sense-making and behaviour. This theory claims that people develop explanations for the behaviours of others based on how they perceive the behaviour and the reality surrounding it. This explanation - the attribution - is based on how the observing person perceives a cause for the actor's behaviour. Originally, attribution theory only dealt with human actors. This paper extends this dealing to include non-human actors, such as an organisation, or an information system. An extensive review of attribution theory in the context of IS, and particularly post-adoptive behaviour, is found in (Kelley et al., 2013).

The first judgment that people make when they observe a behaviour is whether the behaviour was caused by internal or external reasons: by the actor, or by something outside the actor. An observer will be more inclined to make such judgement if the act affects their own welfare. Since information systems are a major part of a person's work-life, they affect their users' welfare, and attribution theory appears relevant when studying technology users.

People commonly attribute performance outcomes to factors of ability, effort, task difficulty and luck (Graham, 1991, Weiner, 1985, Weiner, 1986). These and other attribution factors vary along several underlying dimensions such as locus of causality (internal/external to attributor), stability, controllability and globality (Martinko and Thomson, 1998). The three most common dimensions of causal attributions are locus of causality (internal/external to attributor), stability and controllability (Locke, 1991, Russell et al., 1987, Silver et al., 1995, Weiner, 1986, Weiner, 2000). For clarity and convenience, these factors and their underlying dimensions are summarised in Table 1. However, despite being central to attribution theory in general, these dimensions are used in our study indirectly, as explained in the next section.

Stability			
Locus of Control	Stable		Unstable	
	Controllability			
	Controllable	Uncontrollable	Controllable	Uncontrollable
Internal	Ability		Effort	
External		Task Difficulty		Luck

Table 1. Common attributions and dimensions in attribution theory (Source: Kelley et al., 2013, p. 10)

2.1 System-usage as a relationship

We suggest that system-usage can be viewed as a *relationship* between the user and the system. This may seem like an unusual conceptualisation; however we argue that it is a valid and useful conceptualisation of system-usage. Viewing an information system as an entity participating in a relationship with humans has long been considered by the Actor-Network Theory (Callon, 2001), and this interpretive perspective has been applied to technology adoption (Tatnall and Gilding, 2005). We strengthen this view further using relationship theory. For any relationship to exist, three main conditions need to be satisfied (Hinde, 1979): (1) intermittent interactions between the parties; (2) a degree of mutuality in the interchanges, i.e., each party's behaviour takes into account (to some degree) the behaviour of the other party; and (3) continuity between successive interactions. The relationship between an information system and its user satisfies all these requirements, as does the employment relationship of an employee and their organisation. We draw on a study that we conducted in the context of employees and their organisations to suggest that attribution theory would be usefully applied to system-usage, if that was viewed a relationship. Although system-usage, employment, and interpersonal relationships are fundamentally different, we believe that drawing parallels and using attribution theory is beneficial for researchers and practitioners. This paper provides an example of how attribution theory can be used when such a parallel is drawn between an interpersonal and a non-interpersonal relationship. Specifically, this paper reports the results of a study that treats employment as an interpersonal relationship between the employee and the organisation, and uses attribution theory to investigate the quality of employment attitudes[1].

Drawing on the field of interpersonal relationships makes three major conceptual contributions to our research: (1) it reduces the complexity of attributions identified, (2) it provides an expectation of a

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[1] This research makes two departures from existing theory: first, from interpersonal relationships into non-interpersonal ones, and, second, from affect ratio into the use of attribution ratio. To manage the risk of such leaps, we chose to use a non-interpersonal relationship that has interpersonal components in it (person-organisation), to explore if the approach continues to provide meaningful results. The next step is to examine if the approach provides meaningful results in post-adoption context.

balance in attributions to sustain a relationship, and (3) it provides an expectation of a mental image of the relationship partner. The last two contributions are explained in more detail in Section 3.1.

Most attribution studies are complex as they distinguish between the various dimensions of attributions. In contrast, our research does not. The relational perspective we adopt enables us to collapse these dimensions into two global categories: relationship *enhancing* attributions, and relationship *distressing* attributions. For example, attributing a harmful action taken by the organisation to external causes is considered enhancing, whereas attributing it to enduring characteristics of the organisation is distressing. Besides adding conceptual and practical measurement complexity, the various dimensions have been found not to be meaningful when the *quality* of a relationship is concerned (Bradbury and Fincham, 1990). We therefore ignore all attributional dimensions and focus on a single question: "does the attribution enhance the relationship, or does it distress it?". The following section explains how such attributions can be used to diagnose the quality of a relationship.

2.2 Attribution theory and the diagnostics of interpersonal relationships

Similarly to system-usage and post-adoptive behaviour research, most studies of employment relationships use self-reported survey-based methods. In contrast, the breakdowns of interpersonal relationships have been studied using a different approach. Our research uses marriage as an exemplar of interpersonal relationships, for which successful diagnostics and prediction methods have been developed, and argues that these methods can be applied to non-interpersonal relationships such as those between an employee and their organisation or between a user and a technical system . Marital research has diverted its attention from overt to cover behaviours (Bradbury and Fincham, 1990), and particularly, has been able to distinguish satisfied and dissatisfied couples by the nature of attributions that the spouses made for one-another's behaviours (Camper et al., 1988). Our work aims to perform the same systematic analysis, but for a non-interpersonal relationship, and to examine if attributions made by one relationship-partner for the behaviours of another predict the quality of their relationship in the future. While we are doing our analysis in a specific context (employment relationships), we believe that this method will be applicable to the study of other non-interpersonal relationships, such as system-usage and technology adoption behaviour.

Our research relies on a form of systematic diagnostics and prediction successfully used in marital research. Using this method, marital researchers have been able to predict not only *if* a married couple will separate and divorce, but also *when* this separation will take place (i.e., within 7 or 14 years), with an astounding accuracy of over 90% (Gottman and Notarius, 2000). This method focuses on the positive and negative portion of emotions and affect displayed by couples when they recount memories of their relationship (Buehlman et al., 2005, Buehlman et al., 1992, Carrère et al., 2000). The emotions and affect displayed in these interviews were found to predict the course of the marital relationship: high proportions of negative emotions were associated with relationship deterioration, and ultimately, breakdown and divorce.

In our research we applied the oral history interview (OHI) approach to collect and analyse interview data from employees in order to diagnose their relationship with the organisation. We then examined whether attribution (in addition to emotion and affect) could be used to predict the course of a non-interpersonal relationship. The results of the attribution analysis are presented in this paper as we believe this aspect has strong relevance for an IS audience as proposed earlier.

2.3 A theoretical foundation for diagnosing interpersonal relationships

The theoretical foundation of marital relationship diagnostics has a predictive component (Gregor, 2006), which deals with the balance of affect (Gottman, 1994), and an explanatory component (Gregor, 2006), which explains how relationship partners construct their view of one another over time

(Fincham and Bradbury, 1990). The *predictive* component suggests that a balance between relationship-distressing and relationship-enhancing factors will sustain a relationship (Gottman, 1994). The *explanatory* component relies on the well-documented subjective nature of human recall (Einhorn and Hogarth, 1986, Kahneman and Tversky, 1979, Tversky and Kahneman, 1974), showing that human memories are typically biased, skewed and constructed. Similarly, marital diagnostics assumes that partners have a constructed view of one another — a mental image. Unhappy spouses tend to overlook the positive behaviours of their partners (Weiss, 1980), suggestibly due to such memory construction. This image, in turn, determines the kind of attribution that partners are likely to make for the other's behaviour (Bradbury and Fincham, 1990), which successfully predicts a couple's trajectory towards divorce (Buehlman et al., 1992, Carrère et al., 2000, Gottman et al., 1998). Our study examines if humans create a similar mental image of their non-human relationship partners, if this image is consistent with the attributions that the humans make for their non-human partners, and if these attributions, like in marriage, predict the course of the non-interpersonal relationship.

Inspired by the success of the method described above in predicting divorce, along with the evidence that distressed and non-distressed couples are distinguished according to the nature of their commonly used attributions (Bradbury and Fincham, 1990), we asked the following :

RQ: How well do biases in attribution predict the course of a non-interpersonal relationship?

To answer this question, we designed a study that elicits attributions that individuals make of a non-human relationship partner (in our case, their employing organisation). Our methodological approach is described in detail next.

3 Methodology

The study aims to determine if employee attributions to their organisation are predictive of the quality of their relationship with the organisation over time. We measured the enhancing and distressing attributions that the participants made, calculated a ratio between them, and compared this ratio with job and workplace measurements one year later. The study used a two-stage longitudinal, mixed-methods approach. Data were collected in two forms: qualitative, using the oral history interview method, described next, and a quantitative survey of job and workplace attitudes. At Time 1, qualitative oral history interview data were collected. One year later, at Time 2, quantitative survey data were collected. The qualitative data were the source of the independent variables (distressing and enhancing attributions to the organisation), while the dependent variables resulted from the various survey measures (the course of their employment). For illustration and clarification purpose, the data collected, its conversion, and the resulting variable are presented in Table 2, according to the time of collection.

Time	Data type	Data conversion	Variable
Time 1	Interview	Attribution coding	Independent; Attribution ratio
Time 2	Survey	Attitudes median scores	Dependent; Constructs

Table 2.   Data collection plan

3.1 The oral history interview (OHI) — a method for diagnosing interpersonal relationships

The oral history interview (OHI) was designed to probe people for memories of significant events in the relationship that is being studied. In studies of marital relationships, for example, couples are asked in a joint interview to remember significant events in their lives as a couple (that is, first date,

wedding planning, and so on), their good and bad times together, and their descriptions of successful and unsuccessful marriages. In IS research, a similar method of identifying attributions was used by Kelley *et al.* (2013), asking users to describe usage experiences with positive and negative outcomes.

The main difference between this method and other qualitative research methods is in the analysis. While most qualitative research considers the *content* of the responses, the participants' *evaluations* of their relationship partner (enhancing or distressing) is examined, as in (Camper et al., 1988).

3.2 Measuring the quality of the employment relationship at Time 2

To assess the quality of the employment relationship, our study examined self-reported job and workplace attitudes that are typically measured as identifiers of the employment relationship quality (that is, overall job satisfaction, commitment and turnover intentions). In addition, three other constructs were included, due to their influence on the quality of the employment relationship (Allen et al., 2003, Fairhurst, 2008, Schaufeli and Bakker, 2004): perceived organisational support (POS), work engagement, and burnout.

3.3 Sample

As part of a greater study, two organisations were involved: a law firm (*LawFirm*) and a healthcare provider (*HealthyCare*) in a large metropolitan city in Australia. Participants selected for this study had permanent positions (full- or part-time), and had been employed by their organisation for at least one year, to enable the formation of an employment relationship. Company tenure averaged seven years (range: one to thirty-five years at Time 1). Participant selection was random and not guided by potential satisfaction levels.

Eleven members from LawFirm and thirty-five members HealthyCare agreed to participate in this study, a total of forty-six participants. One participant's responses were inadmissible due to technical problems. The study reported here focuses on the results of employees that are not in managerial roles and do not regularly oversee or supervise others, in total thirty-three of our original pool of participants. Out of these thirty-three participants, three were highly trained clerical staff, six lawyers and twenty-four nurses. Eight participants were males, and the rest were females.

4 Data Collecting and Coding

Following the oral history interview approach, each participant was interviewed in a quiet room for as long as they took to respond to the interview questions — up to 55 minutes. Based on the marital relationship diagnostics, the OHI was used to tease out participants' views of the organisation. Employees were asked to describe positive and negative events during the course of their employment, the organisations' strengths and weaknesses, and a view of a good and a bad workplace (Buehlman et al., 1992). Responses covered a wide variety of content, according to individual views: social relationships, equity (or lack thereof), stress-causing factors, managerial behaviour, and many more.

4.1 Attribution coding

The study reported here is part of a bigger project, which required more than seven coding rounds. This paper reports the results of the last coding round: a coding of attribution. Attribution was identified either by direct expressions of the participant ("it was done because…"), or by indirect or contextual reference to a reason provided by the participant ("that happens here a lot", "that's what we nurses are like", "mistakes happen. We are all human.").

The nature of the attribution was coded according as per its effect on the relationship with the organisation. *Enhancing* attributions include highlighting supportive behaviour despite difficulties, and discounting negative impact due to external circumstances. *Distressing* attributions include

attributing unkind, selfish, or unflattering motives, discounting positive actions due to external impositions, or discounting reports of positive effects due to their rare occurrence. The dimensions listed in Table 1 were consulted to identify if the cause is enhancing or distressing by nature. For example, if an unfavourable procedure is used in an organisation, but the participant mentioned that the same procedure is used throughout the industry ("it's like that everywhere"), this was considered an *enhancing* attribution. If, in contrast, the participant brought up another organisation that does things differently ("in my previous workplace, you would never do that"), this was considered a *distressing* attribution.

4.2 Independent variable – attribution ratio.

Similarly to other studies of relationships quality (Gottman and Levenson, 1992), we calculated the attribution ratio, a composite score, by adding up the percentage of time spent in the interview making enhancing attributions to the organisation, divided by the total time spent in the interview making distressing and enhancing attributions (i.e., enhancing / (enhancing + distressing)). Ratios ranged from 0.11 to .894 ($M = 0.57$, $SD = 0.21$).

4.3 Dependent variables

Constructs were measured using a survey were used to calculate the dependent variables in this study. The items selected for the survey reflect aspects of the employment relationship. The constructs names, meaning, medians, standard deviations and Cronbach alpha values are provided in Table 2.

Construct	Measurement	Range	Median	SD
Perceived organisational support (POS) Employees' belief of the extent to which the organisation values their contributions and cares about their wellbeing (Eisenberger et al., 1986). (C. Alpha = .917)	Eight items (Eisenberger et al., 1997) ranked over a seven-point Likert-type scale	1 – 7	4.71	1.51
Overall job satisfaction (OJS) The favourableness of job conditions (Shore and Tetrick, 1991). (C. Alpha = .704)	Four items (Eisenberger et al., 1997) (Porter et al., 1974) ranked over a seven-point Likert-type scale	1 – 7	4.98	1.38
Intention to quit (INT) Intentions to turn over (Ajzen, 1991, Fishbein, 1980, Golden, 2007, Benson, 2006, Aryee and Chay, 2001). (C. alpha = .864)	Two items (Chau et al., 2009, Hom et al., 1984) based on a 12-month reference, ranked over a seven-point Likert-type scale	1 – 6.5	2.59	1.56
Affective commitment (AC) Employees' emotional attachment to, identification with, and involvement in, the organisation (Meyer et al., 2002). (C. alpha = .856)	Eight items (Allen and Meyer, 1990), ranked over a seven-point Likert-type scale	1 – 7	4.44	1.30
Continuous commitment (CC) Commitment based on the costs that employees associate with leaving the organisation (Payne and Huffman, 2005, Meyer et al., 2002). (C. alpha = .765)	Eight items (Allen and Meyer, 1990), ranked over a seven-point Likert-type scale	1 – 7	4.06	1.58
Normative commitment (NC) Employees' feelings of obligation to remain with the organisation (Yao and Wang, 2006). (C. alpha = .811)	Eight items (Allen and Meyer, 1990), ranked over a seven-point Likert-type scale	1 – 6.5	3.68	1.42

Work engagement (ENGA) Employees' involvement fulfilment with, and enthusiasm for their work (Maslach et al., 2001). (C. alpha = .907)	A 17-item scale (Schaufeli and Bakker, 2003) ranked over a seven-point Likert-type scale.	2 – 6	4.64	1.05
Burnout (BURN) Schaufeli (2009) characterises burnout as a combination of low energy (exhaustion) and low identification (cynicism). (C. alpha = .812)	Maslach's burnout inventory (MBI) (Maslach and Jackson, 1986).	1 – 4	2.24	0.84
Composite relationship variable (COMP) A composite measure of the relationship quality (C. alpha = .719)	Calculated as an average of all previous measures: POS, OJS, AC, CC, NC, INT, ENGA and BURN2.	2.44 – 5.81	4.58	0.79

Table 3.   Dependent variables - constructs, measures, and descriptive statistics

5   Findings

A bivariate correlation between the interview attribution ratio (based on OHI results) and the survey variables was measured using a one-tailed Spearman's coefficient. Spearman's coefficient was selected due to the non-normal distribution of the data.

Correlations between study variables are presented in Table 4. We focus our discussion on the correlations between the independent variable, *attribution ratio*, and the dependent variables, which include the survey measures and the composite relationship variable. These correlations are sufficient to support our case that attribution theory is useful when applied to a non-interpersonal relationship (in our case, employment). Other correlations were found but are not presented or discussed here because they are not relevant to the focus of this paper.

Construct	Correlation Coefficient with attribution ratio	Sig (1-tailed)
POS	.482**	.002
OJS	.358*	.020
INT	-.349*	.023
AC	.242	.087
CC	.195	.139
NC	-.034	.426
ENGA	-.055	.380
BURN	-.195	.138
COMP	.376*	.016
**p > .01; *p .05		

Table 4:   Correlation between attribution ratio and employment variables (N=33)

Ratios between enhancing and distressing attributions were calculated to produce the interview *attribution ratio*. The ratio was found to significantly predict the composite employment-relationship variable (COMP) one year later, at Time 2.

The interview attribution ratio also significantly predicted perceived organisational support (POS), overall job satisfaction (OJS) and intention to quit (INT). Its prediction of affective commitment (AC) was nearly significant. The attribution ratio had no significant correlation with the measures of normative and continuous commitment (NC and CC), engagement (ENGA) or burnout (BURN).

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[2] Negative constructs (INT and BURN) were calculated as reversed items.

6   Discussion

The purpose of this study was to examine the usefulness of attribution theory when a relationship that is not interpersonal is treated like one. By viewing employment as an interpersonal relationship between the employee and their organisation, and using the OHI in the employment context, this study identified attributions that predicted the course of employees' job and workplace attitudes. The results show that there are potential benefits to treating a non-interpersonal relationship as an interpersonal one. It shows that attribution theory provides insight into how the person involved in a non-interpersonal relationship perceives the other party, and that using attribution theory enables the prediction of how this perception will progress in the future. Specifically, the results show two main points that are useful for IS researchers to keep in mind: (1) people form a mental image of non-human relationship partners, similarly to how they do for human partners, and this mental image is consistent with attributional biases towards the relationship partner, and (2) these attributional biases predict future attitudes towards the relationship partner. Each is discussed below.

6.1   A mental image of the relationship partner

The results indicate that employees create a mental image of their workplace, which is consistent with the attributions that they make for events in their organisation. This is concurrent with past proposition of an integrated mental image created by relationship parties (Fincham and Bradbury, 1990). The results show that the attribution integrated into this image can be tapped into by using the OHI method, and that the nature of the attributions exposed during the OHI are consistent with the course of the employment relationship over time.

6.2   Attribution in the present predicts the relationship in the future

The attributional biases captured during the interview at Time 1 predicted the future perceived organisational support, overall job satisfaction, and employee intention to quit one year later. This indicates that the attributions that employees make to events in their organisation serve to shape their perception of their organisation, and of their willingness to sustain the relationship with it. These attributions also predicted the quality of the overall relationship of the employee and the organisation one year later, further supporting our conclusion.

6.3   The benefit of attribution theory when taking a relational perspective

Apart from the simplicity of its use and its natural appeal to participants, who favour story-telling over surveys, this perspective offers the benefits of relying on a relationship that has been built over time. This paper shows that it is not necessary to identify and describe the mutual history of the relationship partners in order to diagnose its quality, and its likely future direction. It can therefore be useful to provide an insight into post-adoption behaviour that is based on usage history, without a need to engage in a time-consuming analysis of this history.

From an IS perspective we draw parallels between the non-interpersonal relationship of employees with their organisation and the non-interpersonal relationship of users and systems. Both relationships are central to the worker's life, and thus impact their wellbeing. In addition, both non-human partners (i.e., organisations and information systems) have been repeatedly conceptualised in literature as socio-technical systems (Trist, 1981, Harvey et al., 2012, Oden, 1999), involving two major components: a technical component, and social one. For this reason, we believe that this method of enquiry is of value to researchers in systems usage and adoption.

7   Conclusion and Future Research Directions

Our theoretical foundation for this work is that people form a relationship with non-human partners, and that this relationship has similar characteristics to that of an interpersonal relationship. We suggest that, like in interpersonal relationships, the employees create a mental image of their partner (in this case, their employing organisation), based on the history of the experiences in this relationship. This history, to a large extent, determines the way the non-human partner is viewed by the human. Because of the parallels between an interpersonal relationship and a usage relationship between a user and an information system, we see this result providing a useful direction for IS systems adoption research. Our next step is to investigate the antecedents and consequences of user attributions in the context of system-usage, using this method of enquiry. Since the method is less complicated and more natural for the research subject, we encourage researchers interested in attribution theory to seek opportunities to do the same.

In addition to the theoretical argument in the favour of viewing usage as a relationship, the paper provides evidence of the benefits of using attribution theory in the case of such a relationship: the ability of attribution to predict the quality of the relationship in the future.

This paper provides a less complicated, and yet very useful, method to identify the attributions, diagnosing the quality of a relationship and predicting its future. While most of attribution theory research involves complex distinctions between internal and external causes of behaviour, and specifies various other dimensions of attributions (controllability and stability), a relational perspective allows for a simplified enquiry of attribution, focusing on two categories: relationship-distressing, and relationship-enhancing.

7.1   Limitation

Apart from a relatively small sample, we suggest that correlations identified in this research may be strengthened if participants were to be asked directly to provide their explanation for events that they describe.

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Acknowledgments