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DEVELOPING A NEW THEORY OF KNOWLEDGE SHARING: DOCUMENTING AND REFLECTING ON A MESSY PROCESS

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ABSTRACT

Much has been written about theories and how they can be tested. Unfortunately, much less has been written about how to develop them. This paper sheds light on the process of new theory development. We document and reflect on how we developed a context-sensitive indigenous theory of knowledge sharing by studying Chinese organizations. By reviewing and refining our own somewhat messy process, we have identified six key stages: abstract, identify, select, explain, synthesize, and validate. By presenting our model of theory development to the Academy of Management, we aim to encourage greater discussion of how theories can be developed, to stimulate the development of new contextual theories, and to provide useful methodological guidance for those who take up the theory building challenge.

Keywords: theory development, knowledge sharing, research method

INTRODUCTION

Much has been written about theories and how they can be tested. Much less has been written about how to develop them. We believe that a lack of attention to the process of developing a new theory has impeded the advancement of knowledge about information systems (IS) and management.

The development of a new theory about social or organizational phenomena is rare. It is not easy to distinguish native or indigenous theories from borrowed or imported ones (cf. Straub, 2012). Nevertheless, a cursory review of the literature on organizations, management, and IS suggests that theories imported from external reference disciplines far outnumber those developed indigenously. The problem is most evident in the IS discipline. Straub (2012, p. viii) mentions explicitly only 7 native IS theories developed since 1992, and alludes to 10 more. However, the IS theory wiki (http://istheory.byu.edu/wiki/Main_Page) lists nearly 100 theories used in IS research, although even this list is likely to be incomplete. This suggests that the lack of native theories highlighted by Lyytinen and King (2004) continues to haunt the IS discipline.

Many journals that publish our research stipulate the requirement for a theoretical contribution. For example, Straub (2009, p. vi) asserts that a required element for acceptance by *MIS Quarterly* is that it sufficiently uses or develops theory. Authors usually respond with incremental variations on or extensions of existing theories (Whetton, 2009). They commonly tweak variables or test either imported or existing theories in new contexts. Balancing the incremental tradition in the management field is a journal dedicated to theory development, the *Academy of Management Review*. Within IS, *MIS Quarterly* also has a well-established section entitled "Theory and Review". However, the papers in these journals are almost entirely about the final theory and its literary forebears. They leave out the process that was used to develop the

theory. A reviewer once told us "I am not interested in your dirty washing! Just show me the theory", so perhaps the lack of attention to the theory development process is not so surprising.

In a provocative article, Weick (1995) suggests that in focusing so much on the goal – theory – we have neglected the process needed to reach the goal – theorizing. This neglect has impaired theory development (Sandberg and Tsoukas, 2011; Straub, 2012). Doctoral programs tend to focus on research gaps and questions as well as data collection and analysis. Here again, the process of developing theory commonly remains shrouded in mystery. We are keen to pull back this shroud, share our experience, and stimulate the fruitful development of new theories.

This paper documents and reflects upon our own experiences in developing a new indigenous theory. In some respects, it complements Truex et al. (2006) who provide "a self-reflexive tale of how and why escalation was adopted for IS research". Our process of theory development undeniably incorporates some previously published 'how-to' guidance for grounded theory (Glaser, 2002; O'Reilly et al., 2012), case study research (Eisenhardt, 1989; Eisenhardt and Graebner, 2007), and action research (Davison et al., 2004). We describe how we engaged in pre-theorizing before undertaking a cyclical process that led, iteratively, to testable propositions and a formal theory. This theory was developed in the context of a multi-year investigation of knowledge sharing (KS) practices in a wide variety of Chinese organizations.

This is not a traditional 'theory paper' that describes a new theory or justifies its validity. Instead, by documenting and reflecting upon our experiences, we aim to share with our colleagues, and junior scholars in particular, *how* we developed a new theory. It follows the implicit advice of Smith and Hitt (2005, p. 572) who "believe that the best way to learn how to develop theory is by studying (those) who have developed important theories", as well as those who have written about theory. There are undeniably many different paths that can lead to the

development of a new theory, depend partly on epistemological assumptions and frameworks. This paper describes our experience in developing a new theory of knowledge sharing.

Studies such as Colquitt and Zapata-Phelan (2007) confirm that theory-testing papers vastly outnumber theory-building papers in our top journals. We want to encourage more of our peers to take up the challenge of developing valuable new theories rather than simply tweaking or testing existing ones. We believe that lessons from our experiences can guide them to successfully complete this challenge. By specifying each of the six key stages that were part of our process, we aim to provide actionable guidance to researchers interested in developing theories. Reactions from academic audiences to date suggest that doctoral students and junior scholars in particular can benefit from such guidance as they aim to contribute new theories.

Following this introduction, we first review the considerable, but rather dry, literature on theory and theorizing. We then describe our research context and the activities that led us, not always directly, towards a set of theoretical propositions. These propositions are grounded on both existing theories and our own research experiences. We subsequently propose a process for developing theory. We conclude the paper with a discussion of both theory and theorizing.

THEORIES AND THEIR PURPOSES

Since the real world is complex, human beings need to simplify it in order to understand and potentially manage it. Consequently, theory is needed to compress or filter a large amount of complex and/or uncertain information into simpler laws or principles. Lynham (2002) suggests that a (good) theory simply aims "to describe and explain how things actually work" (p.221). Similarly, Gioia and Pitre (1990, p.587) contend that a theory must provide "a coherent

description, explanation and representation of observed or experienced phenomena". Meanwhile, Smith and Hitt (2005, p.581) note that three prominent theorists (Oliver Williamson, Henry Mintzberg, and Jay Barney) have suggested, respectively, that a good theory is "one that can be tested", "a bridge that leads us to another theory" and "one that produces debate and discussion".

We agree with Hambrick (2007) that a theory will ideally aim to "help us organize our thoughts, develop coherent explanations, and improve our predictions" so that our experiences and expectations gain cohesion and stability (Llewelyn, 2003). Given these aims, a good theory will be practical (Lewin, 1945), balancing comprehensiveness with parsimony (Dubin, 1978; Whetton, 1989), "plausible … and correspondent with presumed realities" (Weick, 1989). It will also explain the meaning of specific social phenomena (Llewelyn, 2003; Sutton and Staw, 1995).

Although the importance of theory is acknowledged by (almost) all academics, the evaluation of a theoretical contribution is subjective. As Kilduff (2006, p.252) helpfully suggests "Theory papers succeed if they offer important and original ideas". Corley and Gioia (2011) assert that theoretical contributions are commonly judged on two dimensions – originality (classified as either revelatory or incremental) and utility (reflecting scientific and/or practical usefulness). They further argue that the academic community prefers contributions "that are revelatory/surprising and carry mainly scientific value" (Corley and Gioia, 2011, p. 26).

Even if we agree that theory is essential to academic research, and also agree on how to evaluate it, agreeing on what precisely a theory is, and is not, is trickier. Theory remains a polyseme, with various views on what it means and what it includes. Sutton and Staw (1995, p.371) contend that "references, data, variables, diagrams, and hypotheses are not theory", but admit that "authors routinely use these five elements in lieu of theory". Nevertheless, Weick

(1995) argues that these same five elements are useful components of the theorizing process, which threads together various elements through logical cause and effect relationships.

Our experience confirms that this 'threading together' is a messy process. Our review of the literature revealed that the word 'theory' is used very freely and inconsistently; there is no consensus on what it means. As both Gregor (2006) and Markus (2014) assert, many researchers use the word 'theory' without defining it adequately. Differing opinions among IS researchers regarding the definition of theory and its role in research are clearly evident in the debate and commentaries sparked by Avison and Malaurent (2014). Such a lack of consensus may also help to explain the rarity of so-called strong theories in the social sciences (Sutton and Staw, 1995).

Before going further, we thus believe that it is important to define what *we* mean by theory. Based on Davison et al. (2012), we first distinguish between two types of theory: focal and instrumental. The essence of a focal theory is the causal logic that connects a set of well-specified factors in order to explain the past and/or predict the future. A theory must go beyond mere description to answer the question: "Why is the phenomenon like this?".

More specifically, following from Dubin (1978), we believe that a focal theory must, at a minimum, answer three questions: what?, how? and why? Thus, it is necessary to specify *what* factors (concepts, constructs or variables) are included in the focal theory and *how* they are related. Together these *describe* the domain of the focal theory. A focal theory must also explain *why* the relationships between the factors exist. A convincing explanation may be based on logical reasoning, empirical data or both. Neither qualitative nor quantitative evidence *by itself* will complete a causal argument. Analysis and interpretation are usually needed to precisely answer the questions of *who?*, *where?* and *when*? The specification of contextual and temporal

factors will set or limit boundaries for the focal theory. Otherwise, the focal theory is assumed to be exceptional in that it is universally applicable.

In contrast to focal theory, an instrumental theory describes or models a process or a method that helps us to understand and act in a novel, complex and/or uncetain situation. An instrumental theory is commonly depicted as a model and/or a graphic. Davison et al. (2012) provide several examples of instrumental theories, including Stabell and Fjelstad's (1998) Value Shop, as well as Kaplan and Norton's (1992) Balanced Scorecard. Based on the conceptualization of Davison et al. (2012), this paper essentially generates an instrumental theory to describe and explain a process of theory development. In the remainder of this paper, the single-word term 'theory' refers to focal theory, distinguishing it from 'instrumental theory'.

We use the term 'theorizing' to define the process that is undertaken with the ultimate aim of developing a focal theory as defined above. Theorizing tends to be a lengthy and recursive process. Sutton and Staw (1996, p. 372) suggest that "the process of building theory is itself full of internal conflicts and contradictions", while Weick (1979) indicates that tradeoffs between simplicity, generality, accuracy and precision are inevitable.

Theorizing is commonly based on top-down deduction or bottom-up induction, although Shepherd and Sutcliffe (2011) argue that top-down induction is also possible. Regardless of the direction of the theorizing process, we agree with Weick (1989) that it is a form of "disciplined imagination", with the systematic application of trial-and-error thinking. Thus, theorizing fits the common definition of a *systematic process* or a *method* for research.

In the sections that follow, we reflect on our own theorizing process in a lengthy research program. This enables us to document the process that we used to develop theory and thus

present an instrumental theory for developing new theories. In contrast to Shepherd and Sutcliffe (2011), who outline an inductive process using secondary data ("the Literature"), our process of induction and abduction relies on primary data collected while studying communications and information/knowledge management in Chinese organizations.

During our research, we considered the applicability of several existing theories. We explicitly applied two of them, namely transaction cost economics (TCE) and transactive memory systems (TMS), to guide our initial investigation of the research context - knowledge sharing. Nevertheless, we ultimately found it necessary to develop a new indigenous theory in order to adequately explain 'why knowledge sharing is like this'. We next describe, reflect on and discuss our journey as we developed this new theory.

DEVELOPING A NEW THEORY OF KNOWLEDGE SHARING

We first describe our research context and the methods that we used. We then examine what we call a pre-theorizing stage, in which we reviewed several sources of inspiration and evidence. These included existing scholarly work, insights from practitioners, and reflections on our previous research. The formal theorizing that followed informs our instrumental theory for developing theory.

We believe that a refined form of such an instrumental theory will help to guide the activities that create and develop theories in the future. The culmination of these theorizing activities is the formal specification of a focal theory. We then present a post-theorizing stage with reflections on our journey and the new theory. Finally, we discuss validations of the theory that can be undertaken in the future.

Context and Background

Our knowledge management (KM) research program in China began in two Public Relations (PR) Firms. These projects started in late 2006 and continued until late 2010. We subsequently continued the research in other industries, including hospitality and software development.

The two PR firms were Eastwei (now MSL China) and RF Asia. They compete in a dynamic industry, helping primarily foreign firms to establish and maintain their brand image in the burgeoning China market. In each firm we used an inductive theory discovery methodology, namely Canonical Action Research (CAR) based on Davison et al. (2004). CAR resembles grounded theory (O'Reilly et al., 2012) and case research (Eisenhardt, 1989) in that the theoretical account is grounded in empirical data. However, CAR is distinctive in seeking to simultaneously advance scholarly knowledge and improve the organizational situation (Davison et al., 2004).

CAR typically includes a cycle of five key activities – diagnosis, planning, intervention, evaluation, and reflection. The first stage of our research was to diagnose the current state of KM activities. Later we planned and implemented changes aimed at improving selected key performance indicators (KPIs). After considering the interests of different stakeholders, we decided to focus our efforts on improving the KPIs associated with individual and team productivity.

We gleaned significant knowledge about the KM environment, although the organizational change initiatives met with limited success. In particular, we learned about the KS practices of individual employees. Their patterns of behavior contrasted markedly with existing theories. This inconsistency led to the realization that a new theory was needed. Key components

of the Chinese socio-cultural context had to be incorporated into the theory to accommodate the anomalies that we were seeing. The pre-theorizing and theorizing that we undertook are described in the next two sections.

Pre-Theorizing and Some Initial Theorizing Activities

In CAR, researchers must first diagnose the organizational problem situation. We used several diagnostic approaches, notably work methods, interviews with employees, conversations with senior managers, and brainstorming sessions with focus groups of employees. We also mapped processes based on Stabell and Fjelstad's (1998) Value Shop model, which we adopted as an instrumental theory. An extensive series of interviews with large numbers of employees in both firms was particularly informative. Through these interviews, we came to understand how individual employees shared (and did not share) knowledge. A strong KS work culture was mediated by IT applications, particularly the ubiquitous instant messenger (IM).

Many KS behaviors were consistent with the knowledge-based theory of the firm (Grant 1996). This theory helped us to understand the organizational situation, especially the roles of knowledge in saving time (efficiency) and making the best choice (effectiveness). Getting the right knowledge at the right time from the right person proved to be critical. This is consistent with the essential role of mutually reciprocal relationships, called guanxi, in Chinese society (Xin and Pearce, 1996). Many managers and junior employees made claims to us such as: "without guanxi, I cannot work"; "if you don't have guanxi, you can't get things done".

Notwithstanding the critical importance of guanxi, senior management espoused an economic imperative to improve KM. Following an extended series of discussions with both employees and senior managers, notably the Chief Executive Officer (CEO). we adopted the

perspective of TCE when formulating our action plan for Eastwei. A key justification for taking an economic perspective to organizational change related to the CEO's need to 'sell' the economic benefits of the whole project to his senior colleagues.

An economic perspective also seemed to be appropriate when we considered the 'process inefficiencies' that we had observed in employee KS behavior. From a research perspective, TCE was plausible since the inefficiencies associated with Eastwei's 'internal knowledge market' suggested that an in-house system would increase KS efficiency by formalizing a hierarchy of knowledge. Many employees told us that the wiki-based platform we had proposed would be acceptable. However, this espoused support did not translate into actual support or commitment. The employees refused to accept the change and adopt the new working practices despite the prospect of a payoff if they do so. Consequently, we suggest that the lure of financial rewards that are fundamental motivation with TCE was trumped by other factors.

In a series of interviews and discussions after the failed intervention, we realized that the guanxi-mediated, IM-based KS process was fundamental to the indigenous consciousness. It could not simply be shunted aside by the promise of process efficiencies or economic incentives. The informal and employee-centric approach to KS was consistent with prevailing patterns of KM in China (Burrows et al., 2005). It also reflected the principles of transactive memory systems – TMS (Wegner, 1987), since each employee had access, through IM-based guanxi-mediated network, to the expertise of others. Unfortunately, the Global Financial Crisis of 2008 intervened before we completed our validity testing of TMS at Eastwei.

Our research of KS (narrowed from the original scope of KM) continued in another PR firm, RF Asia. This venue was chosen based on the principle of theoretical sampling (Eisenhardt and Graebner, 2007). A key aim was to replicate and extend our findings in order to have a

complete set of conceptual categories for TMS. At RF Asia, we jettisoned the economic formalisms and planned our CAR intervention based on TMS. A key dimension of TMS is the meta-knowledge of 'who knows what'. RF Asia employees individually maintained extensive personalized indices of people recognized as being experts in specific functional areas. Some of these indices ran to 500 or more contacts – far more than the 150 who were employed by the firm itself and thus indicative of a far-reaching set of networks that function as a privately-accessible, distributed knowledge system (Borgatti and Cross, 2003).

TMS seemed to be a useful theory for understanding KS behavior. We developed a new action plan that incorporated principles of TMS, embedded into Microsoft's SharePoint product. SharePoint was to supplement (not replace) existing IM tools for brainstorming, content management and informal KS within the team. In this way, SharePoint would enhance the efficiency of their work, enabling the sharing of meta-knowledge about 'who knows what' for the benefit of the team as a whole. We pilot-tested SharePoint with geographically-distributed teams, each having more than an dozen members.

Again, the observed improvement was minimal, much less than we or the firm's leaders expected. The teams used some SharePoint functions, such as archiving static documents, but they resisted using it to share knowledge. The software was criticized for failing to improve individual interactions or the overall structuring of organizational knowledge. Perhaps most importantly, SharePoint fit poorly with key aspects of the Chinese culture, most notably guanxi and in-groups. It was too open and transparent, forcing knowledge to be shared across the whole team. Previously, individuals could share their knowledge selectively and discretely.

We came to realize that existing theories, developed in a Western context, were simply inadequate to describe and explain what we were observing. Echoing Whetton (2009), they

failed to represent the richness of the Chinese context, and thus failed to predict and explain how KS could be encouraged in a societal culture based on personal relationship and in-groups. As suggested by Tsui (2004), a new indigenous theory was needed. The story of how we developed that new theory follows a brief review of the literature on theorizing.

THE ITERATIVE THEORIZING PROCESS

Theorizing is a messy and complex process that includes many activities. The pre-theorizing work that we describe above provides the background and context for our own theorizing. We basically agree with Weick (1995, p.389) that theorizing "consists of activities like abstracting, generalizing, relating, selecting, explaining, synthesizing, and idealizing". Unfortunately, neither Weick nor anyone else has described these activities in detail. A key contribution of this paper is to model the theory development process by sequencing and detailing six key stages.

The products of a positivist theorizing process, notably propositions, hypotheses and predictions, sometimes represented as diagrams, are mutable. They may be altered or excised altogether from the final theory. Since later changes do not preclude their significance in the theorizing process, it would be useful to report and discuss them as part of the theorizing process. The process will engage with elements such as references, data, variables, diagrams and hypotheses, before even the most tentative and fragile theory emerges.

Among the aforementioned five elements, we found diagrams to be particularly valuable. They brought us closer to theory than mere reference lists and data samples. We used diagrams to plot propositions with cause and effect relationships. As Strauss (1987) suggests in his prescriptive formula for grounded theory, a diagram that explicitly shows causal relationships

can most simply and completely describe *how* variables are related. Similar to a theory itself, a diagram depicting the core relationships must balance comprehensiveness and simplicity.

Notwithstanding the value of a diagram, it cannot explain *why* the relationships exist between factors. Therefore, we found it necessary to write out the logic behind our diagrammed relationships. Similarly, the reasoning behind moderating and mediating variables needs to be explained logically rather than simply shown in a diagram. Thus, it is imperative to explain not only what occurs, but how and why it occurs, and also when and where it occurs.

The value of references is that they can bolster proposed relationships while data is needed to validate them. In asymptotically striving towards a theory, researchers integrate these various elements to make it sufficiently plausible, valid, and practical. Why asymptotically? Because we should *not* be striving for the chimera of a perfect or grand theory that sweeps aside all others (Hambrick, 2007). Every theory has limitations – whether of too much or little parsimony in scope, too few or many variables, too much or little depth. This means that reviewers, editors and authors should recognize a 'good enough' or 'much better than before' theory. Rigorous testing can then evaluate the utility and validity of a nascent theory.

Our theorizing process included many of the activities that Weick (1995) mentions, and several that he does not. It also includes most of the artifacts identified by Sutton and Staw (1995). In recognizing the need for a new theory of KS that incorporates both Western and Chinese values and behavior, we consciously responded to calls for a more culturally reflexive approach to research (Davison et al., 2008). Such an approach is particularly salient in China, given significant differences from the West in terms of both social psychology and the institutional environment (Xin and Pearce, 1996).

During the course of the longitudinal project, we had become very familiar with both the focal research topics – KM and KS – and two theories that we had applied – TCE and TMS. We had also explored the literature on Chinese culture, notably that relating to the concepts of guanxi (relationships), mianzi (face), renqing (favour), huibao (reciprocity), and quan'nei (in-groups). A new theory was needed to bring these disparate elements together. However, we did not ignore prior theoretical work. We thoroughly reviewed both the English and Chinese language literatures to ensure that our theorizing was inclusive and comprehensive.

After identifying several dozen relevant concepts, we selected the key concepts for our new theory. This selection process was critical because it would set the scope for the theory. We recognized the value of simplicity or parsimony, but also wanted the theory to be broadly applicable and measurable. Thus, the concepts would have to be comprehensible in different languages and cultures. For instance, to include indigenous Chinese concepts such as *guanxi*, *mianzi* and *renqing*, we had to ensure that they could be represented in English and other languages in ways that were both faithful to the original meaning and yet also meaningful in the destination or host culture.

Locating exact translations of indigenous terms proved to be very difficult. Mianzi is often translated as giving 'face' (Ho, 1976) – in the sense of showing respect to others. There is also a need to protect one's own face or the collective face of one's in-group (quan'nei). Guanxi refers to mutually reciprocal (huibao) and obligatory relationships, while 'renqing' incorporates the exchange of social favours to maintain guanxi (Kiong and Kee, 1998; Xin and Pearce, 1996).

First Draft of Theoretical Propositions

The next step in our theorizing was to draft a set of theoretical propositions. Our propositions were concise statements of *what* we had seen occur and what we expected to occur. Each

proposition was underpinned by a clear and logical argument of *why* it was expected to occur. Our initial set of propositions were structured as dichotomous pairs of statements. An example of such a pair of propositions, together with its introductory text, is written out in **Box 1**.

Box 1: Knowledge and Relationships (First Draft)

In observing the way knowledge is sought and shared in the Chinese context, we recognize the primary importance of guanxi. However, in a Western context, while knowledge-related relationships and responsibilities do exist, individual behavior can also be characterized as adhering to norms of economic rationality or irrationality.

1a: KS primarily occurs between guanxi-linked members of in-groups.

1b: KS primarily occurs between independent individuals due to personal discretion based on economic rationality, opportunism, volunteerism/altruism or formal responsibility.

These initial propositions roughly corresponded to stereotypical notions of Chinese and Western KS behavior. They were intended primarily to stimulate an ongoing discussion amongst ourselves (a trio of researchers) and also with our scholarly and organizational audiences. We recognized that juxtaposing our propositions created an artificially bipolar perspective. This was done deliberately to provoke discourse. We believed that intensive debates and extensive discussions would reveal a better understanding of key issues. We fully expected that we would modify the propositions, supplement them with new ones, or remove them from the theory altogether. Nevertheless, they were a key step in the theorizing process.

We developed six other pairs of dichotomous propositions, structured similarly to the example in Box 1. They covered: KS and the strength of ties; KS and reciprocal obligation as

opposed to impersonal discretion; KS with respect to long or short term interests; KS mediated by formal or informal technologies; the sharing of codified and uncodified knowledge; and KS occurring as a continuous stream or as a series of discrete events.

Feedback and a Second Draft of the Theoretical Propositions

Following our initial effort to develop propositions, we undertook an extended series of presentations to and discussions with both researchers and practitioners. The primary aim was to elicit feedback that would confirm the plausibility of the theoretical ideas by helping us to verify the face and content validity of our theorizing thus far. We first subjected the background material, theoretical arguments and seven pairs of propositions to a detailed scrutiny by academics at three universities in China (March-May, 2011) and one university in the United States (June, 2011).

Our academic audience in China criticized several aspects of the emerging theorization. Some suggested that our reliance on a single industry (Public Relations) was a weakness. They claimed that PR employees had distinctive work behaviors that could not be generalized, especially beyond the professional service sector. Meanwhile, the U.S. audience queried the extent to which Chinese concepts applied in non-Chinese contexts.

These comments and queries reveal the importance of specifying the scope of a new theory. A theory must include causal relationships to describe *what causes what else*, and to explain *why*. However, before a theory is complete, we must also understand *when* and *where* it applies. A theory may be *universal* or *contingent* on a particular set of circumstances.

Reflecting on this feedback from China and the United States, we engaged in another round of theorization. The second author took the theoretical propositions and recontextualized

them into a new set of theoretical linkages. This set of linkages was used as a basis for discussion with the other authors. Following this iterative series of internal discussions, the revised propositions were presented in the form of a structural model to academic audiences in The Netherlands, Great Britain and China (August-November, 2011). They were also useful to guide interviews with junior managers in several Chinese Internet portals such as Tencent and RenRen (November, 2011). The new rendering of the role of guanxi base in the emerging theory was as in **Box 2**.

Box 2: Guanxi Base as a Moderator of Knowledge Seeking and Sharing (Second Draft)

Guanxi emanates from one or more bases including family, current and former colleagues, professional acquaintances. Guanxi base is believed to moderate the path between the knowledge seeking and sharing process and its psychological and technical antecedents.

Final Set of Theoretical Propositions

Reflecting on the feedback from this second round of presentations and interviews, we fine-tuned the propositions further. Another set of presentations was made to academics in Australia, China, Thailand and the United States (January-March, 2012), the United Kingdom, Denmark, Sweden (May-June, 2012) and Brazil (July, 2012). These presentations encouraged us to create explicit relationships between all of our theoretical constructs by formulating seven propositions.

We configured these propositions into a new, high-level, structural model that included cause-and-effect linkages. We also provided a detailed theoretical rationalization for each

proposition in isolation, as well as in combination. The first of these propositions is written out in **Box 3**.

Box 3: Proposition 1 (Guanxi Elements) of the Final Draft
Guanxi elements, including principles of reciprocal favours (P1a), mutual understanding (P1b), and relationship harmony (P1c) between linked individuals, constitute powerful antecedents for knowledge exchange.

Post-Theorizing Reflections and Further Validation

Our theory is now reasonably complete, although it needs further testing and validation. This can be done in several ways. One could seek evidence from case studies in different contexts to demonstrate the veracity of the relationships that we are positing. Ideally, future case studies would take place in organizations of different sizes, in different industries, and in different national cultures. These cases may reveal new relationships that require the new theory to be modified or extended.

Alternatively, one could transform the theoretical propositions into specific hypotheses that could be tested with a large-scale survey of employees across different industry types and national cultures. A third option is to use the theory as the basis for a new CAR intervention. A CAR project would collect direct empirical evidence from organizational stakeholders to confirm or refute the validity of the theory. Only through such repetitive testing can we become increasingly certain about the validity of a new theory, and specifically clarify when and where it is valid.

AN INSTRUMENTAL THEORY TO DEVELOP A FOCAL THEORY

In the previous sections, we have described how we inductively developed a focal theory of knowledge sharing. It involved what we term the pre-theorizing, theorizing and post-theorizing stages. Each stage is quite intricate and involves several activities. The overall process was creative and undeniably serendipitous. Yet it was also systematically structured and consistent with high-level abstract theorizing (Weick, 1995). We iterated through a cycle of six stages until we had developed a theory that stood up to repetitive testing. Significantly, our large-scale iteration resulted in new versions of the focal theory. We acknowledge that small-scale iteration is also possible, whereby a theorist oscillates between stages.

Our review of the methods literature and discussions with fellow researchers suggest that the model (as shown in **Figure 1**) is broadly applicable to various forms of inductive theory building, including those that draw on action research, ethnographies, and case studies. The model also constitutes an instrumental theory, as defined by Davison et al. (2012), to facilitate the development of focal theory. Thus, it extends Eisenhardt's (1989) more general perspective of how case study research can lead to new theory, and Weick's (1995) high-level theorizing. The six stages that we define in **Table 1** and describe below are also relevant to grounded-theory building. Nevertheless, we do not intend that this method be applied rigidly or inflexibly. Instead, we hope that it useful guidance to develop a (new) theory.

Insert Figure 1 and Table 1 about here

Abstract

The practical purpose of theorizing is to solve a mystery. Our mystery was an observed phenomenon that contradicted existing theory: KS in the Chinese context. The phenomenon

reflects the relationship-based society and economy of China (Martinsons, 2008) and represents an anomaly based on existing (Western) theory. Poole and Van de Ven (1989) suggest that theory building is often triggered by an anomaly or paradox. For example, Martinsons and Westwood (1997) created a new theory to explain IT application patterns in Chinese business after discovering that they differed significantly from Western prescriptions, predictions and practices. We discovered that existing KS theory was contingent rather than universal. This motivated us to resolve this anomaly and answer a new research question: how can we explain what we are seeing when the existing theory *does not fit?*

The theorizing process was triggered by abstracting a research question that was both interesting and important. Based on our pre-theorizing, it was deemed worthy of a theoretical investigation. After spending time to make sense of our research phenomenon in its natural context, we started to integrate our pre-theorizing observations and experiences with insights from the existing knowledge sharing/management literature. The aim was to specify an (interesting) mystery that has yet to be solved or resolved by prior research (Alvesson and Kärreman, 2007).

Using a metaphor from building and construction, Mintzberg (2005) suggests that the process of theory development can range from adding a few bricks onto an existing structure to building a new overarching architecture with a solid foundation of pillars. Based on this metaphor, the literature often provides some of the building materials as the observations and experience are abstracted by the researcher(s). To abstract effectively, the research question needs to be both sufficiently broad in scope and sufficiently interesting to guide the rest of the theory building process.

Several questions may be asked to determine whether a significant new theory is being developed: Does it challenge the conventional wisdom or significantly alter it? Does it offer a new perspective on an important phenomenon? Does it refocus an existing perspective on to new aspects of an important phenomenon? Does it involve the imagination of plausible relationships beyond the current evidence?

Identify

Once an interesting research question has been abstracted by integrating real-world experiences and the academic literature, the next step is to examine and decompose the focal phenomenon. It is helpful not only to review the relevant literature but also to communicate with those actively involved with the phenomenon. These communications may include asking questions and simply listening to and observing people at work. For example, we engaged with a variety of Chinese organizations in order to study how their stakeholders shared knowledge.

Consistent with Eisenhardt (1989), the specific choice of organizations should reflect the research question(s). This is where theory meets practice; the former is not possible without the latter. Here we acknowledge our own preference for the use of intensive and qualitative methods during the theory developing process. Close and careful observation enables a rich and comprehensive description of the phenomenon.

It is also useful to compare and contrast theories at this stage. Developing a new theory does not require clean slate thinking or starting with a blank canvas. Instead, it is more likely to include the extraction and possible integration or combination of elements from one or more existing theories. In order to advance our cumulative knowledge it is often better to ‘stand on the shoulders of giants’ than to completely ‘reinvent the wheel’. For example, our theory relies on

existing theories in culture and psychology. Wherever possible, we applied existing concepts that are well defined and have existing measures. We believe that identifying relevant theories in different disciplines, listing out their similarities and differences, and then thoughtfully integrating them is a fruitful way to develop a new theory. Nevertheless, we ultimately saw a need to identify and define several new concepts and constructs.

The primary aim at this stage is to identify the concepts and attributes as well as constructs and antecedents, which may be relevant to the research question or scope of interest. Consistent with Whetton (1989), we suggest initially creating a long list of potential 'variables' by examining the phenomenon or searching through the literature thoroughly. This will help to ensure that no important element of the phenomenon is neglected. The common desire to have a parsimonious theory requires subsequent filtering of these variables. A focus on key conceptual themes is helpful to move on to the next stage, and select a manageable set of theory components.

Select

The selection process among the identified components or 'variables' commonly involves careful observations of the phenomenon and thorough documentation of ideas (Mintzberg, 2005). However, we also feel that some educated guesses and creative speculation are needed. Opportunism and serendipity undeniably played a role in our theory development process. Chance conversations and seemingly peripheral ideas often generated new insights. Dozens of insights contributed to our theorizing even if only a few were incorporated into the theory.

The components in a new theory should collectively represent a conceptual scheme that answers the research question. For example, we selected variables for our theory that together

would be able to explain the patterns of KS that we were observing in Chinese organizations. We also ensured that our selection and conceptualization of variables would enable our theory to be applicable beyond the Chinese context.

An existing theory may be enhanced by selectively adding pillars (not merely bricks) to its foundation. This selective addition can redefine the scope of a theory to make it more stable, and thus answer the proposed research question better. This pillar-adding approach is evident in the evolving process that led to the development of the Theory of Planned Behavior from the Theory of Reasoned Action (cf. Ajzen, 1991).

Explain

In this stage, the selected variables need to be individually defined within the research scope. Each variable also needs to be supported either with reference to the existing theory, the researchers' pre-theorizing experience, or both. By now, a draft version of the theory should be carefully articulated, with a clear scope, one or more firmly established pillars to form a solid foundation, and well defined core variables. In order to explain the scope and pillars of the theory, we need to recognize the similarities and differences between different variables. This requires a classification of the variables as a prelude to connecting them.

We classified the factors into psychological motivations, IT tools, and design. We also included socio-cultural aspects so that the scope and individual pillars could serve as place markers (cf. Weick 1995) of the theory. Although the final theory may be more parsimonious, it is helpful to list all the relevant variables at this stage. The variables in the emerging theory need to be related in order to explain how specific actions lead to specific results. This synthesis is accomplished by creating first propositions and later hypotheses. Each proposition should

formally describe a logical cause-and-effect relationship between two different types of variables: one or more *causal factors* or variables and at least one *outcome variable*.

Synthesize

The aim is to organize all the meaningful elements of the phenomenon into a coherent and logical whole. It is often helpful to develop a formal structural model at this time. This model provides a pictorial guide to the emerging theory and all of its concepts. Following Aristotle's maxim that "the soul never thinks without a picture", theorists often use diagrams to visualize the causal relationships between factors. In addition to propositions, hypotheses and relationships between variables in a research model, we argue that the reference list is also a product of this synthesization stage. A reference list should neatly document the supporting theories and relevant arguments for justifying the new proposed theory.

Weick (1995), citing TenHouten and Kaplan (1973, p.147), contends that theorists change the vision for a theory "from entwined ideas at the edge of words to a linear order in which the ideas are unraveled and set forth in the form of a propositional argument". This linear order is in fact a synthesizing process of connecting the factors together so as to describe their relationships logically (Mintzberg, 2005). It covers what came before and what comes next according to the defined scope (Weick, 1995).

The appropriate size of a theory is subject to debate. For example, we have watched with interest as two groups of comparative historical sociologists battled over the scope of general theory in their sub-discipline. Boswell and Brown (1999, p. 154) report that the contentious issues in this "holy war … include broad versus narrow scope conditions, explicit versus contingent theorizing, and theory testing versus theory building". We suggest that by developing

new theories, we can avoid a similar battle in our discipline. Nevertheless, we acknowledge that some trade-offs are inevitable in order to make a theory reasonably parsimonious while also being sufficiently complete to be useful in both practice and further research.

Validate

Finally, we need to validate our emerging theory. This validation may involve logical reasoning and/or empirical testing. A big-picture perspective is also helpful to evaluate the theory as a whole. Based on Corley and Gioia (2011), we suggest that three questions be considered: Is the theory new in terms of revealing something surprising? Does the new theory significantly advance our understanding? Is the theory scientifically and/or practically useful? Answering yes to all three questions suggests that the theory will make a theoretical contribution.

Weick (1995) refers to a similar activity as 'idealize', but we prefer 'validate' because of the explicit focus on the validation of the propositions and hypotheses. Early stage validation is more likely to involve experts, ideally both academics and practitioners, who provide feedback. The internal validity of a new theory will be strengthened by clearly defining the variables and the relationships between them, as well as using data to render support for a new theory.

We found it helpful to iterate between the literature and the data while also interacting with the wider worlds of both academia and practice. We presented early formulations of our theory to scholars from different disciplines and cultures, and to business/IS practitioners in different industries. Thorough debates of contentious issues prompted us to refine our new theory in order to make it more robust. For example, the primary focus of our discussions during 2011 was on the scope of application. Weick (1979) argues that a theory cannot be simultaneously simple, accurate and general. Very few theories apply universally; most are applicable only in

certain circumstances. A mismatch between our theoretical pre-understanding and the initial empirical findings triggered our development of a new theory. Our initial context-embedded research ultimately resulted in a context-sensitive theory (Tsui, 2004). More generally, the validation process is helpful to determine when and where a theory applies. It can also reveal anomalies or paradoxes that suggest the limitations of a new theory.

A theory is like a newborn baby. It must be nurtured in order to develop fully over time. As a theory matures, its constructs should be exposed to a wider range of organizational and/or experimental circumstances and subjected to rigorous statistical or analytical testing. Later stage validation is likely to focus on external validity.

A theory may be made more rigorous by testing it with data collected using methods such as surveys, experiments, case studies, ethnographies or action research. The rationale for theoretical sampling has been made previously in articles such as Eisenhardt and Graebner (2007) and Urquhart et al. (2010). Suffice to say, new data is helpful to test, challenge and extend a theory, especially a new one.

THE PROCESS OF THEORY DEVELOPMENT

Our theory development process was deliberately cyclical so as to enable iteration. Iterative revisions to a theory based on constructive criticism and empirical testing will strengthen it. We expect that theory development will normally follow a clockwise motion with a cyclical sequence of steps as outlined here.

However, it may be necessary to backtrack for retrieving the feedback. We did this several times when the outputs of an earlier stage prevented forward movement because we

judged them to be incomplete. We agree with Smith and Hitt (2005, p. 572) that "the process of theory development is causally ambiguous, involving tacit knowledge and difficult-to-observe processes". In retrospective we also endorse the view of Weick (1989) that theorizing invovles disciplined imagination, with a combination of discipline and imagination being necessary throughout the theory development process.

Grand theories, such as TCE, have evolved over decades and involved many career-long efforts to advance and refine them. In contrast, our experience suggests that a more modest yet robust new theory can emerge from an intensive research agenda that spans a few years. This type of theory is variously known as mid-range theory, focal theory (Davison et al., 2012) or a 'theory of provenance' (Markus, 2014, p. 342) that applies to "more delimited and concrete sets of phenomena like outsourcing decisions, technology acceptance, or IS project success".

A key component of our process model is periodic *reflection*. Researchers need to reflect honestly on the theorizing process, challenging their own assumptions and opening themselves to challenges from others. If the reflections and analysis are thorough, it is unlikely that a theory will emerge unscathed after a single round of theorizing. Iterating through a number of cycles is more likely, especially if the validation process is undertaken systematically and thoroughly.

Independent and critical views obtained from other stakeholders are likely to reveal flaws in the theoretical design and prompt further reflection. New theories are not accepted easily: it is human nature to resist change. As Mintzberg (2005) suggests, even Einstein would find it difficult to publish his theory of relativity because it "is speculative, not proven" (p.358).

The development of a new theory is almost invariably an iterative process. Some of the early ideas, concepts or constructs are thus unlikely to survive the entire process. However, this does not negate their importance. They played a critical role in our early theorization while

stimulating valuable discussions. The ideas, concepts and constructs that emerged in that early stages are significant links in the chain of evidence for the theory development process. As such, we believe that they should not simply be discarded. Instead, they should be mentioned, at least briefly or included in an Appendix, when the theory is documented and presented.

When a sufficiently robust theory has been developed, the theorists may 'exit' from the process. However, this exit may only be temporary. Indications that a theory lacks accuracy or fails to predict the outcomes of specific activities or phenomena in certain circumstances will warrant its re-examination. In this regard, we have participated in lively and fruitful discussions with both scholars and practitioners who have criticized specific parts of our theory. Sharing and, if appropriate, responding to these criticisms will help other researchers to make an informed judgment of "the usefulness and limitations of the theory in their own work" (Walsham, 1997).

DISCUSSION AND CONCLUSIONS

Our new theory of KS resulted from a messy yet rewarding process of collecting, organizing, analyzing and interpreting primary data. This paper documents and reflects upon this process. Consequently, it sheds new light on the often obscure aspects of how a new theory can emerge and evolve. More significantly, by reflecting upon our theorizing, we have developed a six-stage process for theory development. This includes the key activities, inputs and outputs that we believe are needed to develop a robust theory based on induction and abduction. Our proposed process (or instrumental theory) complements work such as Eisenhardt (1989), Eisenhardt and Graebner (2007), Gioia et al. (2013), O'Reilly et al. (2012), and Urquhart et al. (2010). It aims to guide those seeking to develop new theories in the future.

We have diagrammed theory development as a sequential and cyclical process. However, we recognize that it may not be appropriate or even possible to follow a clockwise motion rigorously. Backtracking to an earlier stage, or oscillating between stages, may occasionally be necessary. This iteration will be familiar to action researchers, who follow a sequential cycle with specified principles and criteria at each stage (Davison et al., 2004), yet occasionally backtrack between stages.

A complete and robust theory is unlikely to result from completing a single cycle of the process model. Several iterations will typically be needed before a new theory matures into a useful foundation for further research and also practical guidance. Even when a complete theory is presented, it will be subject to challenges. Further validation and testing is likely to reveal anomalies, paradoxes or shortcomings that merit additional theorization and reflection. We deliberately put reflection in the centre of our iterative process model because we found it helpful to reflect periodically during our theory development process. These reflections should not be purely thought experiments based on subjunctive reasoning. More usefully they involve thorough discussions and constructive criticism of the ideas being promulgated.

We believe that the inter-personal dynamics between the three authors encouraged such thorough discussions. Two of us have worked together on assorted research projects for many years. Our differences in university studies – engineering versus languages – and professional backgrounds – management consulting versus IS applications – have been complementary. The third member of our trio has added youthful enthusiasm and an indigenous Chinese perspective to our discussions. This was particularly helpful to bridge the English and Chinese language literatures as well as to define and translate key terminology.

The process of developing a new theory is almost invariably a team effort. Each of us led and contributed to different parts of this process. Our complementary knowledge and skills were essential to complete the process. Many professional colleagues also contributed by commenting on and criticizing our emerging theory. Thus, relationship-based KS was remarkably not only the focus of our research but also critical to the success of our own theory development process.

The focus of our theory development efforts, the processes of knowledge seeking and sharing, inevitably incorporated many contextual elements. Following a thorough literature review and detailed descriptions of how Chinese employees leverage both technology and guanxi to seek and share knowledge, we drafted a set of propositions and configured them in a theoretical model. We refined and validated these propositions using many interviews and some surveys in industry and by giving presentations to both academic and practitioner audiences.

The feedback that we received was critical to improve our proposed theory. It led us to drop some propositions and revise others. Our nascent theoretical ideas matured over several years. The process of identifying, selecting and synthesizing these components was difficult and time-consuming. We did not discover any significant short-cuts while developing our theory.

A new theory does not emerge all at once. It is developed over time. A new theory needs to be nurtured in its early days and guided to maturity over time. Theories need to germinate and be socially (re) constructed through engagement with diverse groups of people. A new theory is likely to be challenged by some researchers in its native discipline by some researchers. If it survives these challenges, it will become part of the cumulative knowledge in that discipline.

The quality of a theory can be hindered if the development process is rushed. Even after going through the process that we have modeled here, our theory is not finalized. Further testing and validation are needed. This may lead to refinements if not revisions of our focal theory.

Similarly, our instrumental theory should be seen as a work in progress. We have shared it with our peers and doctoral students, and encouraged them to comment on and improve it. Indeed, we envision the refinement of methods to advance theory as a continuous and endless journey. There will always be opportunities to improve both focal and instrumental theories. We hope that the 2015 Academy of Management meeting will provide one of those opportunities.

REFERENCES

Alvesson, M. & Kärreman, D. (2007). Constructing mystery: Empirical matters in theory development, *Academy of Management Review*, 32, 1265-1281.

Ajzen, I. (1991). The theory of planned behavior, *Organizational Behavior and Human Decision Processes*, 50, 179-211.

Avison, D. & Malaurent, J. (2014). Is theory king?: Questioning the theory fetish in information systems, *Journal of Information Technology*, 29, 327-336.

Borgatti, S.P. & Cross, R. (2003). A relational view of information seeking and learning in social networks, *Management Science,* 49, 432-445.

Boswell, T. & Brown, C. 1999. The scope of general theory: Methods for linking deductive and inductive comparative history, *Sociological Methods Research,* 28,154-185.

Burrows, G.R., Drummond, D.L. & Martinsons, M.G. (2005). Knowledge management in China, *Communications of the ACM,* 48(4), 73-76.

Colquitt, J. & Zapata-Phelan, C. (2007). Trends in theory building and theory testing: A five decade study, *Academy of Management Journal*, 50, 1281-1303.

Corley, K.G. & Gioia, D.A. (2011). Building theory about theory: What constitutes a theoretical contribution?, *Academy of Management Review*, 36, 12-32.

Davison, R.M., Martinsons, M.G. & Kock, N.F. (2004). Principles of canonical action research, *Information Systems Journal*, 14, 65-86.

Davison, R.M., Martinsons, M.G. & Ou, C.X.J. (2012). The roles of theory in canonical action research, *MIS Quarterly*, 36, 763-786

Davison, R.M., Sia, S.K. & Dong, X.Y. (2008). Introduction to the special issue on information systems in China, *Information Systems Journal,*18, 325-330.

Dubin, R. (1978). Theory Development, New York: Free Press.

Eisenhardt, K. (1989). Building theories from case study research, *Academy of Management Review*, 14, 532-550.

Eisenhardt, K. & Graebner, M.E. (2007). Theory building from cases: Opportunities and challenges, *Academy of Management Journal*, 50, 25-32.

Gioia, D.A. & Pitre, E. (1990). Multiparadigm perspective on theory building, *Academy of Management Review*, 15, 584-602.

Gioia, D.A., Corley, K.G. & Hamilton, A.L. (2013). Seeking qualitative rigor in inductive research: Notes on the Gioia methodology, *Organizational Research Methods*, 16, 15-31.

Glaser, B.G. (2002). On theory and theorizing using grounded theory, *International Journal of Qualitatitive Methods*, 1(2), 23-38.

Grant, R.M. (1996). Toward a knowledge-based theory of the firm, *Strategic Management Journal*, 17, 109-122.

Gregor, S. (2006). The nature of theory in information systems, *MIS Quarterly*, 30, 611-642.

Hambrick, D.C. (2007). The field of management's devotion to theory: Too much of a good thing?, *Academy of Management Journal*, 50, 1346-1352.

Ho, D.Y.F. (1976). On the concept of face, *American Journal of Sociology, 81*, 867-884.

Kaplan, R. & Norton, D. (1992). The balanced scorecard - Measures that drive performance, *Harvard Business Review*, 70(1) 71-79.

Kilduff, M. (2006). Editor's comments: Publishing theory, *Academy of Management Review*, 31, 252-255.

Kiong, T.C. & Kee, Y.P. (1998). Guanxi bases, xinyong and Chinese business networks, *British Journal of Sociology, 49*, 75-96.

Lewin, K. (1945). The research center for group dynamics at Massachusetts Institute of Technology, *Sociometry*, 8, 126-136.

Llewelyn, S. (2003). What counts as "theory" in qualitative management and accounting research?, *Accounting, Auditing & Accountability Journal*, 16, 662-708.

Lynham, S.A. (2002). The general method of theory-building research in applied disciplines, *Advances in Developing Human Resources*, 4(3), 221-241.

Lyytinen, K. & King, J. (2004). Nothing at the centre? Information systems as reference discipline, *Journal of the Association of information Systems*, 6(6), 220-246.

Markus, M.L. (2014). Maybe not the king, but an invaluable subordinate: A commentary on Avison and Maclaurent's advocacy of grand 'theory light' IS research, *Journal of Information Technology*, 29, 341-345.

Martinsons, M.G. (2008). Relationship-based e-commerce: Theory and evidence from China, *Information Systems Journal*, 18, 331-356.

Martinsons, M.G. & Westwood, R.I. (1997). Management information systems in the Chinese business culture: An explanatory theory, *Information & Management*, 32, 215-228.

Mintzberg, H. (2005). Developing theory about the development of theory, in K.G. Smith & M.A. Hitt (eds.) *Great Minds in Management: The Process of Theory Development*, New York, NY: Oxford University Press, 355-372.

O'Reilly, K., Paper, D. & Marx, S. (2012). Demystifying grounded theory for business research, *Organizational Research Methods*, 15, 247-262.

Poole, M. & Van de Ven, A. (1989). Using paradox to build management and organizational theories, *Academy of Management Review*, 14, 562-578.

Sandberg, J. & Tsoukas, H. (2011). Grasping the logic of practice: Theorizing through practical rationality, *Academy of Management Review*, 36, 338-360.

Shephers, D.A. & Sutcliffe, K.M. (2011). Inductive top-down theorizing: A source of new theories of organization, *Academy of Management Review*, 36, 361-380.

Smith, K.G., & Hitt, M.A. (2005). Learning how to develop theory from the masters, in K.G. Smith & M.A. Hitt (eds.) *Great Minds in Management*, Oxford University Press, 572-588.

Stabell, C.B., & Fjelstad, Ø.D. (1998). Configuring value for competitive advantage: On chains, shops and networks, *Strategic Management Journal*, 19, 413-437.

Straub, D. (2012). Editor's comments: Does MIS have native theories?, *MIS Quarterly*, 36(2), iii-xii.

Straub, D.W. (2009). Editor's comments: Why top journals accept your paper, MIS Quarterly, 33(3), iii-ix.

Strauss, A. (1987). *Quantitative analysis for social scientists*, Cambridge University Press.

Sutton, R.I. & Staw, B.M. (1995). What theory is not, *Administrative Science Quarterly*, 40, 371-384.

TenHouten, W.D., & Kaplan, C.D. (1973). *Science and Its Mirror Image*. New York: Harper & Row.

Truex, D., Holmström, J. & Keil, M. (2006). Theorizing in information systems research: A reflexive analysis of the adaptation of theory in IS research, *Journal of the Association for Information Systems*, 7(12), Article 33, http://aisel.aisnet.org/jais/vol7/iss12/33

Tsui, A. (2004). Contributing to global management research: A case for high quality indigenous research, *Asia Pacific Journal of Management*, 21, 491-513.

Urquhart, C., Lehmann, H. & Myers, M. (2010). Putting the 'theory' back into grounded theory: Guidelines for grounded theory studies, *Information Systems Journal*, 20, 357-381.

Wegner, D.M. (1987). Transactive memory: A contemporary analysis of the group mind, in *Theories of Group Behavior*, B. Mullen & G.R. Goethals (eds.), Springer-Verlag, 185-208.

Weick, K.E. (1989). Theory construction as disciplined imagination, *Academy of Management Review*, 14, 516-531.

Weick, K.E. (1995). What theory is not, theorizing is, *Administrative Science Quarterly*, 40, 385-390.

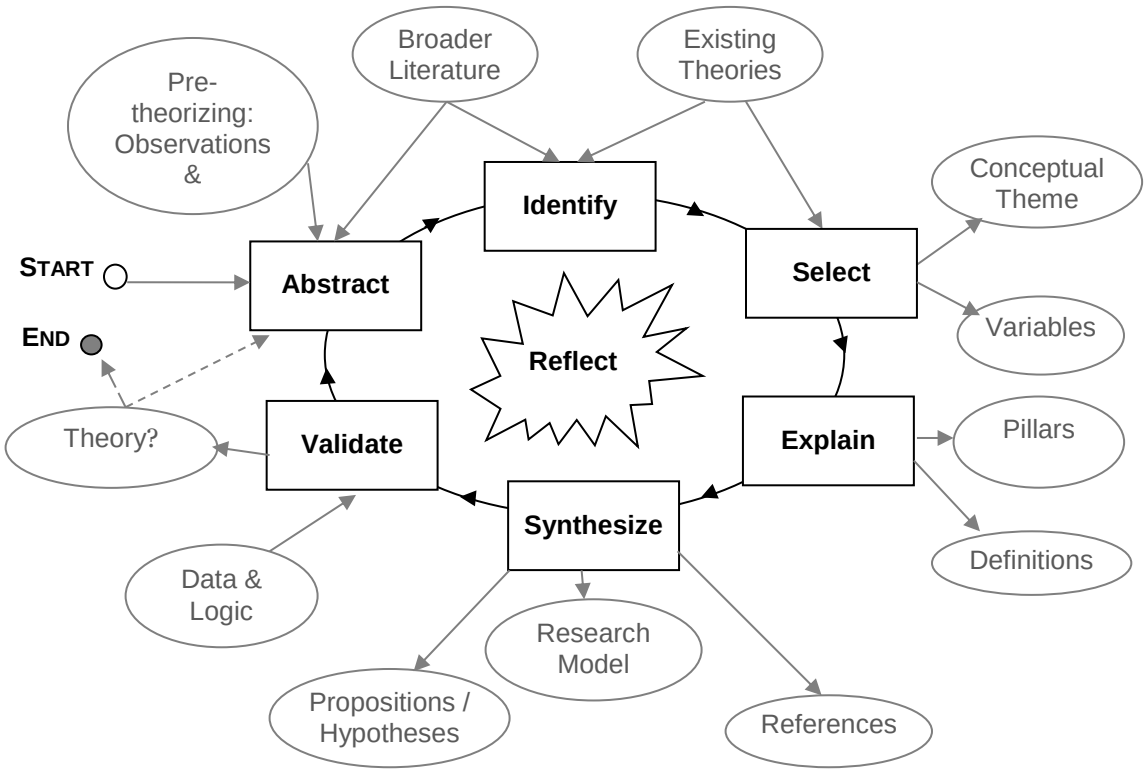
Whetton, D. (1989). What constitutes a theoretical contribution?, *Academy of Management Review*, 14, 490-495.

Whetton, D.A. (2009). An examination of the interface between context and theory applied to the study of Chinese organizations, *Management and Organization Review*, 5, 29-55.

Williamson, O.E. (1979). Transaction-cost economics: The governance of contractual relations, *Journal of Law and Economics*, 22, 233-261.

Xin, K.R., & Pearce, J.L. (1996). Guanxi: Connections as substitutes for formal institutional support, *Academy of Management Journal*, 39, 1641-1658.

Figure 1: Towards An Instrumental Theory for Developing A Focal Theory



In Figure 1, the rectangles represent the stages of the theorizing process and are connected by arrows. The ovals represent the key inputs for each stage, when the arrow points from an oval to a rectangle, and the key outputs, when the arrow points from a rectangle to an oval.

Table 1. Stages in the Theory Development Process

Stage	**Description**
Abstract	Integrate real-world observations and experiences with knowledge of the relevant literature in order to determine an area or a research question that has not been researched sufficiently in the past.
Identify	Identify the concepts and list their attributes, as well as the constructs and their antecedents that *may be* relevant to the research area/question. These variables may come from both existing theories and research observations.
Select	Select a specific set of variables from the detailed list of concepts that collectively represent a coherent conceptual scheme or answer a key research question.
Explain	Clearly and completely describe the conceptual scheme and justify its importance. Specify what each of the variables represents in the corresponding conceptual theme, and then articulate how and why they are related.
Synthesize	Create a big-picture perspective. Diagram a structural model. Write out a corresponding set of propositions and/or hypotheses. The aim here is to relate the most important causal factors and outcome variables.
Validate	Evaluate the originality and utility of the theory in order to assess the significance of its contribution. Subject the propositions or hypotheses to logical reasoning and/or empirical testing. Decide if the theory is sufficiently robust. If it is, then conclude the process and report the theory. Otherwise, continue the theorizing process.