

Goal orientations and the motivation to share knowledge

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Abstract

Purpose – The purpose of this paper is to develop a model that takes into account both personal and contextual factors in explaining individuals' motivation to share their knowledge.

Design/methodology/approach – Drawing from research on achievement motivation and social exchange, it is posited that goal orientations provide a framework for individuals' knowledge sharing by shaping how they cognitively value the costs and benefits associated with sharing their knowledge. It is argued each of the goal orientations is associated with preferences for sharing specific types of knowledge and is that a focus on different aspects of the knowledge provider-recipient relationship.

Research limitations/implications – The model provides a possible explanation for some of the inconsistencies in existing knowledge-sharing research on the factors that motivate knowledge sharing as well as expanding understanding of the conditions that facilitate knowledge sharing.

Practical implications – For organizations to encourage the desired knowledge sharing, they may need to maintain human resource management (HRM) practices that recognize the different motivations associated with each of the goal orientations.

Originality/value – The model developed integrates research on goal orientations and knowledge transfer to expand understanding of how individuals cognitively value the costs and benefits of sharing their knowledge.

Keywords Knowledge management, Knowledge sharing, Social values

Paper type Conceptual paper

Motivation is recognized as a key factor in successful knowledge flow in organizations (e.g., Argote *et al.*, 2003; Barachini, 2009; Bunderson and Sutcliffe, 2002; Osterloh and Frey, 2000; Siemsen *et al.*, 2008; Wittenbaum *et al.*, 2004) and understanding the factors that motivate individuals to actively engage in knowledge sharing has begun receiving considerable attention (e.g., Bordia *et al.*, 2006; Bock *et al.*, 2005; Kankanhalli *et al.*, 2005; Quigley *et al.*, 2007; Reagans and McEvily, 2003; Szulanski, 1996). Most of this research is grounded in social exchange theory (Blau, 1964; Nahapiet and Ghoshal, 1998) where the focus has been on identifying the costs and rewards that shape knowledge sharing behavior (e.g., Bordia *et al.*, 2006; Bock *et al.*, 2005; Kankanhalli *et al.*, 2005; Kwok and Gao, 2004; Lin, 2007; Reagans and McEvily, 2003; Watson and Hewett, 2006). However, the results of these studies have been mixed and we suggest this is because they fail to take into account individuals' goals and the impact these goals have on the value placed on the costs and benefits associated with knowledge sharing. As an example, consider two marketing managers. One is concerned with maintaining an appearance of competence and the other is interested in developing their customer management capabilities. When faced with an opportunity to share their insights on handling difficult customers, how they each respond is likely to vary as a result of how they each perceive the risks and benefits of sharing their insights.

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Consistent with previous research (e.g., Hansen, 1999; Reagans and McEvily, 2003; Watson and Hewett, 2006), we draw from social exchange theory (Blau, 1964) to develop our model. However, our model conceptualizes an individual's motivation to engage in knowledge sharing as a function of a cost-benefit analysis within the context of their goal orientation. Goal orientations represent individuals' general tendency to pursue performance or learning goals when they are in achievement situations (Dweck, 1986; Dweck and Leggett, 1988). Similar to VandeWalle's (2003) suggestion that goal orientations affect how individuals cognitively perceive the costs and benefits of feedback seeking, we suggest goal orientations affect how individuals perceive the costs and benefits associated with sharing their knowledge thereby influencing what knowledge individuals are willing to share and with whom they are likely to share. In so doing, our model expands our understanding of why knowledge sharing occurs between some individuals and not others as well as why individuals are often selective about the knowledge they do share. Our model also provides a possible explanation for some of the inconsistencies in existing knowledge sharing research by examining the perceived costs and benefits of knowledge sharing as a function of the interaction between individual and contextual factors, the importance of which has been highlighted by other researchers (e.g., Augier *et al.*, 2001; Cappelli and Scherer, 1991; Salancik and Pfeffer, 1978).

The costs and benefits of sharing one's knowledge

When an individual provides any part of their knowledge to another, whether it is achieved directly through communication or indirectly through mechanisms such as the use of a knowledge archive, they are engaging in knowledge sharing (Bartol and Srivastava, 2002; Bock *et al.*, 2005). Accordingly, knowledge sharing represents a social activity that occurs within a system where knowledge represents a resource that has a value (Davenport and Prusak, 1998; Fulk *et al.*, 2004). Consistent with this perspective, most research examining knowledge sharing treats motivation as a function of a cost-benefit analysis (Burgess, 2005; Lin, 2007; Nahapiet and Ghoshal, 1998) where the cost of sharing is often represented in the effort required to articulate one's knowledge (e.g., Kankanhalli *et al.*, 2005; Reagans and McEvily, 2003) or the loss of personal value associated with knowledge sharing (e.g., Fulk *et al.*, 2004; Kankanhalli *et al.*, 2005) and the benefits are represented in the intrinsic and extrinsic rewards one might receive if they do share their knowledge (e.g., Bock *et al.*, 2005; Burgess, 2005; Kankanhalli *et al.*, 2005; Kwok and Gao, 2004; Lin, 2007).

However, the results of this research have been inconsistent. For example, Reagans and McEvily (2003) found individuals were more willing to share when they perceived it would require less effort to articulate their knowledge or they could develop a negative reputation for not sharing but Kankanhalli *et al.* (2005) found that level of effort only matters when there is a lack of trust and a study by So and Bolloju (2005) found a perceived social norm for knowledge sharing had no effect on intentions to share knowledge. The effect of rewards on knowledge sharing has also been mixed with some studies finding that individuals' knowledge sharing behavior is positively affected by the potential for organizational rewards (e.g., Burgess, 2005) or coworker reciprocity (e.g., Bock *et al.*, 2005; Kankanhalli *et al.*, 2005; Lin, 2007) and other studies finding that organizational rewards have no effect (e.g., Bock *et al.*, 2005; Lin, 2007) or that the expectation of coworker reciprocity can negatively affect one's knowledge sharing (e.g. Burgess, 2005). Similarly, while some research examining the effect of intrinsic rewards has found knowledge sharing behaviors are intrinsically motivated by the knowledge provider's desire to help others or make a contribution (Kankanhalli *et al.*, 2005; Lin, 2007), other research suggests the motivation to make a contribution is the result of viewing their knowledge as a public good belonging to the collective members of the organization (Lu *et al.*, 2006). This view is associated with a concern for the collective organization that creates feelings of obligation to share their knowledge (Lu *et al.*, 2006; Wasko and Faraj, 2000). We argue a possible explanation for these inconsistencies is that individuals value the costs and benefits of knowledge sharing differently depending on their goal orientation which then shapes their preferences for knowledge sharing partners and the types of knowledge they are willing to share.

Goal orientations and knowledge sharing

Drawing from research on achievement motivation (McClelland, 1961), Dweck and colleagues developed the idea that individuals maintain goal orientations which reflect the goals they pursue and that these orientations are strong predictors of individual behavior and performance (Dweck, 1986; Dweck and Leggett, 1988; Elliott and Dweck, 1988). In this research individuals were found to display two primary classes of goal orientations:

1. a learning goal orientation, characterized by an emphasis on the acquisition of new skills and knowledge; and
2. a performance goal orientation, which focuses on demonstrating competence and avoiding failure.

Individuals with a learning goal orientation are predisposed towards goals associated with learning and engage in behaviors that enable them to learn and acquire new skills whereas those with a performance goal orientation are predisposed towards performance goals and tend to engage in behaviors that enable them to demonstrate their competence and gain positive evaluations (DeShon and Gillespie, 2005).

Both learning and performance goal orientations can be differentiated into approach and avoidance versions (Brett and VandeWalle, 1999; Elliot and Church, 1997; Elliot and McGregor, 2001; VandeWalle, 1997). VandeWalle (1997) suggested a performance goal orientation could be differentiated into a performance-prove orientation and a performance-avoid orientation and a study by Brett and VandeWalle (1999) confirmed this by demonstrating these two forms of performance orientation result in the pursuit of different goals. Individuals with an approach orientation (i.e. performance-prove goal orientation) have a desire to achieve a high level of performance with the appearance of little effort and demonstrate an unwillingness to engage in tasks where mistakes are likely and pursue opportunities where they are able to demonstrate their competence and gain positive evaluations (DeShon and Gillespie, 2005). In contrast, individuals with an avoidance orientation (i.e., performance-avoid goal orientation) focus on avoiding situations where they risk demonstrating their incompetence or receiving a negative evaluation and display withdrawal behaviors such as self-handicapping, task disengagement, and attention to non-task related information (DeShon and Gillespie, 2005).

Learning goals can also be differentiated into approach and avoidance versions as they could be motivated by the desire to acquire new competencies or the desire to avoid the deterioration of one's competencies (Elliott and Church, 1997; Elliot and McGregor, 2001). A learning-prove goal orientation directs attention towards self-referent levels of performance, is associated with the use of feedback on past performance to evaluate current performance, a focus on acquiring knowledge and improving skills, and a decreased concern with making mistakes in the exploration of new tasks (DeShon and Gillespie, 2005). A learning-avoid goal represents countervailing motivations (Elliott and Church, 1997; Elliott and McGregor, 2001), so support for the behavioral effects of this orientation remains limited (DeShon and Gillespie, 2005; Janssen and Prins, 2007).

We propose that goal orientations play a key role in how individuals cognitively value the costs and benefits of engaging in knowledge sharing which subsequently affects their knowledge sharing behavior. Knowledge sharing is a process that provides opportunities to learn and opportunities to display one's competence. At the same time, the knowledge sharing process can highlight one's lack of knowledge and is a process that involves time and effort. Thus, an individual's decision calculus on whether to share or not encompasses multiple dimensions and based on this we propose the different goals and frameworks associated with each of the goal orientations shapes knowledge sources' preferences for sharing particular types of knowledge and a focus on specific attributes of the knowledge source-recipient relationship which then guides the extent of knowledge sources' subsequent knowledge sharing behaviors. These relationships are highlighted in Figure 1 and summarized in Table I.

Figure 1 Goal orientations and knowledge sharing

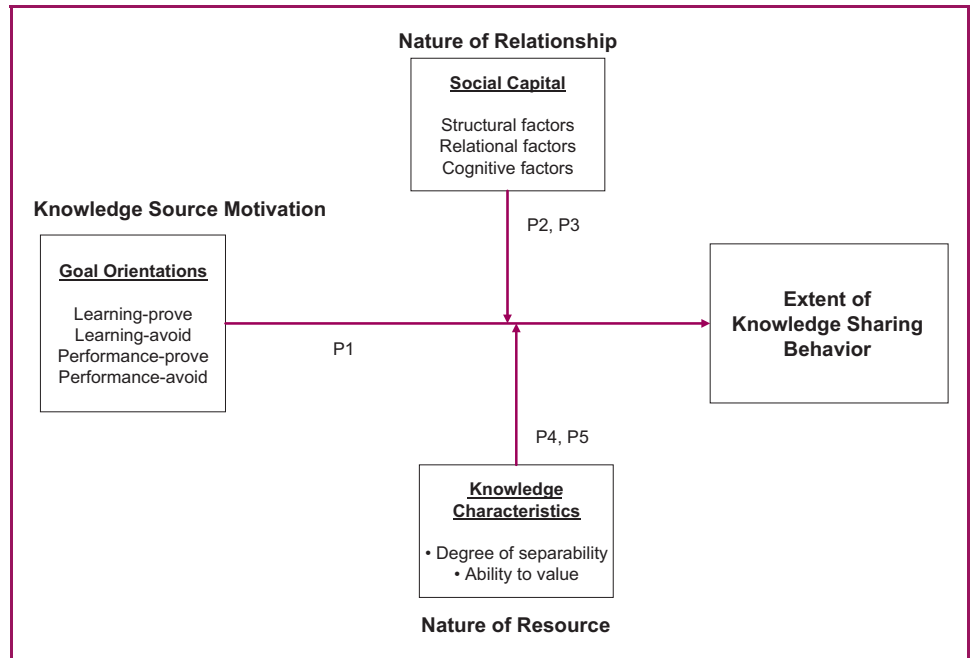


Table I Summary of relationships between goal orientations and knowledge-sharing behaviors

Proposition 1 Extent of knowledge sharing	Propositions 2 and 3 Key considerations in deciding with whom			Propositions 4 and 5 Primary types of knowledge shared				
	Cognitive	Relational	Structural	Tacit, private	Tacit, public	Explicit, private	Explicit, public	
Learning-prove orientation	Highest	+			×	×	×	×
Learning-avoid orientation	Moderate	+	+			×		×
Performance-prove orientation	Moderate	+		+			×	×
Performance-avoid orientation	Lowest	+	+					×

For individuals with performance goal orientations their objective is to demonstrate their competence and avoid the appearance of incompetence (VandeWalle, 1997). These objectives represent performance goals that are more tactical and instrumental resulting in those individuals engaging in knowledge sharing only to the extent they believe it will either be beneficial for them to do so or will not cost them in terms of their reputation. Furthermore, with performance goal orientations effort has a negative connotation where the need to exert more effort is associated with lower levels of ability (VandeWalle, 2003). As a result, individuals with performance goal orientations are motivated to demonstrate success and gain favorable judgment (VandeWalle, 1997) while limiting the amount of effort required to do so. Thus, those with a performance-prove goal orientation will balance the benefits of the opportunity to showcase their knowledge with the level of effort required to share their knowledge. In contrast, those with a performance-avoid goal orientation are likely to avoid knowledge sharing opportunities requiring greater levels of effort out of a fear of failure (Elliot and Church, 1997) and the desire to avoid unfavorable judgments (VandeWalle, 1997).

With regard to learning opportunities, the knowledge sharing process is somewhat unique in that not only does the knowledge recipient benefit from the acquisition of knowledge but the act of sharing can also stimulate learning on the part of the knowledge provider by providing them the opportunity to respond to questions about their knowledge and use the information exchanged in the knowledge sharing process to reexamine their knowledge (March, 1991;

Nonaka, 1994). However, while those with a learning-prove goal orientation are interested in expanding their knowledge base, those with a learning-avoid goal orientation are concerned with preventing the deterioration of their knowledge and a loss of competence (Elliot and McGregor, 2001). As a result, those with a learning-prove goal orientation view knowledge sharing as an opportunity to improve the quality of their knowledge whereas for those with a learning-avoid goal orientation, the act of knowledge sharing represents a situation that could highlight the deficiencies in their knowledge. Individuals with a learning-prove goal orientation engage in more interactive behavior, such as seeking feedback from others (Janssen and Prins, 2007) and engaging in discussions about work related topics (Gray and Meister, 2004). These interaction behaviors often result in a two-way sharing of knowledge and, to the extent individuals engage in conversations related to knowledge, communities of practice evolve and knowledge sharing within those communities is stimulated (Brown and Duguid, 1991; Dougherty, 1992). In contrast, because a learning-avoid goal orientation is associated with the countervailing motivations where the desire to learn is inhibited by the fear of failure (Janssen and Prins, 2007) individuals with a learning-avoid goal orientation are more hesitant to engage in these types of learning activities. The need to balance the benefit of a learning opportunity with the cost of potentially highlighting the inadequacy of their expertise restricts these individuals in their willingness to take risks and results in a reluctance to share their knowledge with others (Wasko and Faraj, 2000).

The above discussion suggests individuals with a learning-prove goal orientation are likely to engage in more knowledge sharing and those with a performance-avoid goal orientation are likely to engage in less knowledge sharing relative to the other orientations. Those with a learning-prove goal orientation view knowledge exchange opportunities as situations to develop their capabilities rather than as situations for displaying their knowledge or highlighting deficiencies in their knowledge resulting in them actively engaging in opportunities to share their knowledge. In contrast, those with a performance-avoid goal orientation are concerned with appearing incompetent resulting in them avoiding knowledge sharing situations where they are uncertain about how others will respond to their knowledge or the probability of successful knowledge transfer.

The relative level of knowledge sharing of an individual with a learning-avoid goal orientation compared to a performance-prove goal orientation is less clear. While individuals with a learning-avoid goal orientation are intrinsically motivated to learn, this motivation is accompanied by a desire to avoid making mistakes which tempers the strength of their learning motivation (Elliot and McGregor, 2001; Janssen and Prins, 2007). In the case of an individual with a performance-prove goal orientation, the decision calculus is instrumental; if the opportunity enables them to showcase their knowledge and do so with little effort, that individual is likely to engage in knowledge sharing behaviors. Thus, the relative level of knowledge sharing varies, depending on other factors associated with the knowledge exchange opportunity, some of which we discuss in the following sections of this paper.

These arguments suggest the following proposition, which is summarized in Table I:

- P1.* Individuals' knowledge sharing behavior is likely to vary depending on the goal orientation adopted. A learning-prove goal orientation is likely to be associated with greater levels of knowledge sharing than the other orientations and a performance-avoid goal orientation is likely to be associated with less knowledge sharing than the other orientations.

Goal orientations are typically considered relatively stable aspects of individuals' personality (VandeWall, 2003) but research suggests actual knowledge sharing may also vary depending on contextual factors (Button *et al.*, 1996). The nature of knowledge being exchanged and the relationship between actors have been established as important factors affecting knowledge transfer between employees (e.g., Kane *et al.*, 2005; Snowden, 2000) and we contend these factors may also influence the effects of individuals' goal orientations on their knowledge sharing as these factors would influence how individuals perceive the costs and benefits of knowledge sharing in different situations. In the following section we discuss how the provider-recipient relationship influences the effect of the provider's goal

orientation on their knowledge sharing. We then consider how the nature of the resource influences the relationship between goal orientations and providers' knowledge sharing behaviors.

Nature of relationship

A central condition affecting social exchange processes is the nature of the relationship between exchange participants (Blau, 1964). The relationships employees maintain with other organizational members represent part of their social capital (Coleman, 1990) and have a direct effect on organizational members' exchanges with each other. These relationships have been classified according to the properties of the social system they are embedded in (structural), the nature of the personal relationship developed across individuals (relational) (e.g. Nahapiet and Ghoshal, 1998; Granovetter, 1973), and more recently the shared systems of meanings among parties (cognitive) (Nahapiet and Ghoshal, 1998). The structural dimension of a relationship encompasses the linkages between people or units. This involves who you can reach and how you reach them and often has often been looked at in terms of the presence or absence of network ties between actors. The position of an individual within a social structure (e.g., his/her centrality), or properties of the overall structure (e.g., density, connectivity, hierarchy) are examples of "structural" connections between actors or units. The relational dimension focuses on the quality of the relationship between actors such as whether the relationship includes respect, friendship, trust, and/or perceived obligations. The cognitive dimension refers to whether there are shared meaning, language, representations, and interpretations among parties (Cicourel, 1973; Nahapiet and Ghoshal, 1998). Shared languages and codes can be particularly salient in the context of knowledge sharing and creation (Arrow, 1974; Cicourel, 1973; Dougherty, 1992; Nahapiet and Ghoshal, 1998). Though these three dimensions can be analytically separated, these dimensions are obviously related to one another (Nahapiet and Ghoshal, 1998). For purposes of simplicity however, we discuss each of these dimensions separately and how each of them affect knowledge sharing behaviors.

Knowledge provider-recipient relationship. Research supports the argument that the nature of the relationship between organizational members affects the likelihood that knowledge transfer events will take place. Knowledge transfer occurs more frequently between organizational units with a shared reporting structure (Hansen and Lovas, 2004), and between franchises that share the same owner (Darr *et al.*, 1995). Further, those individuals who have central positions within a network or who bridge structural holes in networks have access to greater levels of information (e.g. Burt, 1992), which implies they are the recipients of knowledge from those they are connected to. In all of these situations, structural characteristics influence knowledge sharing such that those in a structurally desirable position (either by virtue of having a superordinate firm coordinating knowledge flows, or because they are well positioned within an informal network) receive a greater amount of knowledge from others than those who are not in a structurally desirable position.

Relational connections and the trust often associated with those connections are also important in that both can affect knowledge sharing behaviors (Snowden, 2000). Strong ties facilitate the transfer of knowledge between individuals (Hansen, 1999; Levin and Cross, 2004; Marouf, 2007; Uzzi, 1997) in that individuals are more willing to provide useful knowledge to those they have strong ties with because of the increased trust in the others' intentions and ability to comprehend the knowledge (Levin and Cross, 2004; Riege, 2005; Uzzi, 1999). For example, Uzzi and Lancaster (2003) found individuals were more willing to share private knowledge when the relationship was embedded in a strong social network because the expectations of trust and reciprocity provided reassurance that the knowledge would be used for the parties' mutual benefit.

Additionally, cognitive connections influence knowledge sharing. A strong cognitive connection is associated with a common language, decreased effort involved in sharing knowledge, and shared interpretations (e.g., Snowden, 2000). For example, the rich research tradition on product development effectiveness highlights how those involved with marketing products often have different shared understandings, codes, languages, and

“thought worlds” compared to those involved with technical knowledge (e.g., Dougherty, 1992; Kogut and Zander, 1992; Kunda, 1992; Leonard-Barton, 1988). It is these different thought worlds that can impede product development effectiveness precisely because of the inability to effectively share information when shared language, codes, and meaning are absent. As a result, less knowledge is shared. In contrast, the exchange of information is facilitated when these cognitive connections are present (Nahapiet and Ghoshal, 1998). On-going social interactions, particularly within communities of practice, can facilitate shared cognitive frames and the exchange of knowledge, especially forms of knowledge that are difficult to articulate (e.g., Augier and Vendelo, 1999; Swan *et al.*, 1999). We expect individuals are likely to focus their attention on specific aspects of their relationship with others depending on their goal orientation.

Knowledge provider-recipient relationship and performance goal orientations. Individuals with performance goal orientations are concerned with appearing competent or not appearing incompetent and tend to avoid situations where they might have to exert extra effort that may signal a lack of ability. Individuals with performance goal orientations are more likely to engage in knowledge sharing with recipients they share a common language with as having a common language decreases the level of effort required to transfer knowledge (Reagans and McEvily, 2003; Riege, 2005). However, individuals with a performance-prove goal orientation are interested in using their knowledge sharing to enhance their reputation. Individuals who perform more favors or were perceived as generous in their favor giving had higher social status that resulted in more reciprocal behaviors from others and enabled them to further increase their productivity (Flynn, 2003). However, the extent to which knowledge sharing positively affects an individual's social status and performance is likely to be affected by the structural position of those they exchange knowledge with. The structural position of an individual plays a large role in shaping with whom an individual compares him or herself to in the workplace and who is perceived as a source of job related information (Shah, 1998). Those in more structurally desirable positions are viewed as more influential in terms of affecting others' perceptions (Brass, 1984; Krackhardt, 1990) making them desirable exchange partners. Thus, structural characteristics are likely to be salient to those interested in using knowledge sharing as a way to positively affect their reputation.

In contrast, when individuals have close relationships with each other they are more likely to be familiar with each others' existing skills and capabilities, providing fewer opportunities to promote themselves and influence their reputation. As a result, individuals with a performance-prove goal orientation have less of an incentive to engage in knowledge sharing with those with whom they have a strong relationship relative to those who are less aware of their skills and competencies. Thus, when an individual has a performance-prove goal orientation there are higher anticipated gains to be realized for sharing knowledge with individuals in structurally desirable positions and with whom they have a shared set of meaning and language, rather than with those whom they have a strong relationship with.

A performance-avoid goal orientation, on the other hand, is associated with behaviors that decrease the risk of receiving unfavorable evaluations. Individuals with a performance-avoid goal orientation are likely to engage in knowledge sharing when they are more certain their knowledge will be accepted. When individuals have established relationships with each other, such as when they have strong ties, and have a shared set of meanings and language there is an increased awareness of each others' expertise and level of trust that decreases the risks associated with knowledge sharing and increases the probability that the knowledge will be accepted (Gibbons, 2004; Granovetter, 1973) which facilitates knowledge sharing (e.g., Rothenberg, 2003). Based on this, we expect individuals with a performance-avoid goal orientation to focus on whether there is a strong relational connection and if that relational connection also provides a cognitive connection. A strong relational tie is one in which there is trust, norms of behavior and reciprocation, obligations, and to some extent identification while the cognitive connection provides a shared understanding and language that facilitates the communication process (e.g., Nahapiet and

Ghoshal, 1998). Without these connections, it is unlikely individuals with a performance-avoid goal orientation will share knowledge to any significant degree.

When considering earlier arguments on the effects of the knowledge provider-recipient relationship, the above arguments suggest the following proposition, which is summarized in Table I:

- P2. When individuals adopt one of the performance goal orientations, the aspects of the relationship perceived to offer the greatest potential impact on their appearance of competence are likely to be more salient in shaping their knowledge sharing behaviors. More specifically: those with a performance-prove goal orientation are likely to engage in knowledge sharing with those that occupy structurally desirable positions (e.g., central in network, higher in organizational hierarchy) and they share a common language; and those with a performance-avoid goal orientation are likely to engage in knowledge sharing with those they have a strong positive relationship or who are in less structurally desirable positions (e.g., peripheral position in network, lower in organizational hierarchy) and they also share a common language.

Knowledge provider-recipient relationship and learning goal orientations. While individuals with the learning goal orientations are less likely to be influenced by the nature of the connection to a potential recipient compared to those with performance goal orientations, their concern with learning and building on their knowledge stock is associated with a propensity to engage in situations that enable them to achieve those objectives. As a result, they are likely to share in contexts that facilitate the exchange of ideas and the creation of new knowledge. Communities of practice, where there are shared senses of meaning and language, facilitate the exchange of knowledge, ideas and the development of routines to solve day-to-day challenges associated with work (Brown and Duguid, 1991; Dougherty, 1992). Central to the development of these communities is shared language and meaning systems which has been characterized as a cognitive connection (Nahapiet and Ghoshal, 1998). Individuals with learning goal orientations are likely to engage in knowledge sharing in contexts where there are cognitive connections that can facilitate the learning process.

However, those with a learning-avoid goal orientation are concerned with how others are likely to respond to their knowledge, so they temper their knowledge sharing and are reluctant to take risks and share knowledge they are uncertain of and perceive might be beyond their level of capability. For example, individuals with low levels of a learning goal orientation are more concerned with how others respond to their behaviors than individuals with high levels (Bettencourt, 2004). When individuals have close relationships with each other they are more likely to be familiar with each others' existing skills and capabilities. Those relationships are characterized by an increased level of trust which allows individuals to feel more secure in the expectation they will not be stretched beyond their range of capabilities.

Based on these arguments, we propose the following proposition which is summarized in Table I:

- P3. When individuals adopt one of the learning goal orientations, the aspects of the relationship perceived to offer the potential to contribute to their desired level of learning are likely to be salient in shaping their knowledge sharing behaviors. More specifically: those with a learning-prove goal orientation are likely to engage in knowledge sharing with those they share a common language; and those with a learning-avoid goal orientation are likely to engage in knowledge sharing with those they share a common language and have a strong positive relationship.

Nature of resource

Resources vary with regard to their exchange outcomes and the environmental conditions that affect their exchange (e.g., Foa and Foa, 1980). In other words, different resources are exchanged in different ways. In general, resources that are more concrete and universal

(e.g., goods, money) are more likely to be exchanged under short-term, *quid pro quo* terms. In contrast, more symbolic resources that cannot be separated from the individual providing them (e.g., status, love) tend to be exchanged under more open-ended terms (Cropanzano and Mitchell, 2005). Similarly, the resource of knowledge can also be differentiated according to a set of characteristics that influence an individual's knowledge sharing behavior. It varies in term of how easy it is to value (i.e, how concrete or universal it is) as well as how easy it is to separate from its source. We discuss these characteristics in detail below.

Knowledge characteristics. Knowledge has been characterized along many dimensions which affect knowledge processes and influence the value of knowledge (e.g. Argote *et al.*, 2003). Two important dimensions highlighted in this research stream are the extent to which knowledge can be articulated (e.g., Hansen, 1999; Reagans and McEvily, 2003) and the extent to which knowledge is available (e.g., Matusik and Hill, 1998; Uzzi and Lancaster, 2003). The extent to which knowledge can be articulated deals with how much effort is required to separate this resource from its source. Tacit knowledge differs from explicit knowledge in that explicit knowledge can be easily codified whereas tacit knowledge is generally difficult to articulate (Augier *et al.*, 2001; Polanyi, 1966) and cannot be easily codified (Kreiner, 2002) or transferred (Zander and Kogut, 1995). Tacit knowledge is often related to social interactions of employees in a specific work context (Augier *et al.*, 2001) making it difficult to separate from the individuals holding that knowledge. For example, the knowledge to perform a best practice for developing new products within cross functional teams is an example of tacit knowledge. Such knowledge is difficult to articulate but it may be transferable through observation, interpersonal interactions, and storytelling (e.g., Snowden, 1999; 2000). In contrast, directions on how to drive to a certain location is an example of explicit knowledge – it is generally easy to convey this information, and it can also be easily codified, as evidenced by the services provided by Mapquest and other on-line services where one simply types in an address and receives detailed driving directions.

Knowledge can also be publicly available or privately held (Matusik and Hill, 1998). The public versus private nature of knowledge concerns how easily knowledge can be objectively valued, or how universal the value of it is. Public knowledge exists within the public domain (Marouf, 2007). It consists of knowledge that can be obtained from books, formal education, or best practices, for example. However, because public knowledge can also be widely disbursed it may require an extensive amount of time to collect. In contrast, private knowledge is not widely available. This knowledge may result from unique experiences a company or individual has. In general, private knowledge may confer more value on the holder because of its rare properties; however, it is harder to precisely value this knowledge because of these rare qualities. Knowledge in the public domain can be obtained through a number of different sources. As such, it can be valued and cannot generally command the premium of knowledge which is private in nature and cannot be obtained from alternate sources.

An individual's private knowledge may be either tacit or explicit (Marouf, 2007). For example, an individual may be the only person who knows that a combination of chemicals creates a certain reaction, based on his or her experimentation with those chemicals. Such knowledge is private because it is known to one person in this case, but explicit because it could be codified. Conversely, an individual may be the only source of knowledge on how to keep a particular customer happy. This knowledge may be based on multiple contacts with that customer over an extended period of time on a number of dimensions. As such, it may be difficult to articulate exactly what factors go into making that particular relationship a successful one. Similarly, public knowledge can be either tacit or explicit (Marouf, 2007). Common forms of public knowledge that are explicit include what students may find in textbooks or through course offerings. Public knowledge that is tacit includes the classic example of knowledge related to how to ride a bike. Such knowledge is widely distributed, yet it is still difficult for any individual to articulate this knowledge.

In sum, knowledge varies in the degree to which it can be easily separated from the individual holding it. It also varies in the degree to which it can be valued. We propose that these elements interact with each of the goal orientations to affect which type of knowledge an individual is likely to share.

Knowledge characteristics and goal orientations. The separability of knowledge from its source affects how much effort is required to transfer it. Tacit knowledge is difficult to articulate, codify, and transfer in part because it is more causally ambiguous and context specific (Szulanski, 1996). This requires a knowledge provider actively support the transfer to ensure the recipient understands the knowledge the provider has shared. Those with learning goal orientations are more likely to exert the effort required to ensure understanding because they are more intrinsically motivated to engage in more adaptive and social behaviors (Bettencourt, 2004; Dweck and Leggett, 1988), including knowledge sharing. In contrast, for individuals with performance goal orientations, knowledge sharing behavior represents a form of impression management in that they are concerned with how their knowledge compares to others in the organization. Bolino (1999) suggested that when behaviors are motivated by impression management concerns, individuals may invest less effort or expend less energy in carrying out those behaviors and research has shown individuals pursuing performance-approach goals prefer situations where they can demonstrate competence without having to exert a lot of effort (DeShon and Gillespie, 2005). Similarly, performance-avoidance goals are also likely to be associated with an avoidance of situations requiring extensive effort since greater levels of effort are perceived to increase the risk of making mistakes. Accordingly, those with performance goal orientations are less likely to exert the effort or take the risks necessary to share tacit knowledge. Those with learning goal orientations are less likely to be concerned about the separability of knowledge because they are intrinsically motivated to learn and therefore exert the effort to share knowledge, while those with performance goal orientations are likely to primarily share knowledge that is separable from its source because it is easier to transfer. Thus, as illustrated in Table I:

- P4. The separability of knowledge will affect the relationship between goal orientations and sharing behaviors for those with performance goal orientations (i.e. performance-prove and performance-avoid) such that they are more likely to share knowledge higher in separability (i.e. explicit knowledge) than knowledge that is lower in separability (i.e. tacit knowledge).

Knowledge also varies according to the extent it is available and therefore how easy it is to value. An individual's private knowledge is unique to them (Marouf, 2007) which makes it less available and difficult to value. This increases the risk that an individual's knowledge has less value than they believe. Because those with an "avoidance" motivation are concerned with avoiding mistakes they are likely to avoid situations where they cannot be sure that their knowledge would be useful. In contrast, public knowledge is widely available making it easier to determine the potential worth of the knowledge. As a result, individuals with an "avoid" motivation can be more confident when they share public knowledge that it will have some value and there is less risk of appearing incompetent. Also, because public knowledge is widely available, not sharing it could make an individual appear incompetent because it would suggest that the individual is not aware of the knowledge. Based on these arguments, it is more likely that individuals with an "avoidance" motivation will share public knowledge and less likely they will share private knowledge. Individuals with an "approach" motivation are not likely to take into account the extent to which the knowledge is private or public. Both types can affect their ability to achieve knowledge-related goals.

Accordingly, as illustrated in Table I, we propose:

- P5. The ability to value knowledge will affect the relationship between goal orientations and sharing behaviors for those with "avoid" motivations (i.e. both learning-avoid and performance-avoid) such that they are more likely to share knowledge that is easier to value (i.e. public knowledge) than knowledge that is harder to value (i.e. private knowledge).

Taken together, the separability of knowledge and the ability to value it impact what types of knowledge those with each goal orientation are willing to share. Those with a performance orientation and an avoid motivation (i.e. performance-avoid goal orientation) will focus on sharing explicit public knowledge. Those with a performance orientation and a prove motivation (i.e. performance-prove goal orientation) will be unlikely to share tacit knowledge, but are likely to share both public and private explicit knowledge. Those with a learning orientation and an avoid motivation (i.e. learning-avoid goal orientation) will be unlikely to share private knowledge, but are likely to share public knowledge that is either tacit or explicit. Lastly, those with a learning orientation and a prove motivation (i.e. learning-prove goal orientation) are likely to share all forms of knowledge. Table I highlights the type of knowledge those with each orientation are likely to share.

In sum, our model for examining knowledge sharing behavior proposes individuals maintain goal orientations and these orientations directly affect what knowledge they are willing to share with whom. We presented arguments that suggest individuals maintain goal orientations and that these orientations reflect how individuals determine the value of their knowledge and their perception regarding their ability to learn and develop new knowledge. We then proposed that, depending on the goal orientation that an individual maintains, these different orientations result in differences in individuals' knowledge sharing behaviors. Specifically, the different goal orientations are associated with preferences for sharing different types of knowledge and a focus on different dimensions of the relationship when determining the extent to which they will share their knowledge. These relationships are summarized in Table I.

Discussion

Knowledge sharing is an important issue for both organizations and individual employees. According to Argote *et al.* (2003), one of the causal mechanisms that affect knowledge outcomes is the motivation or incentives to participate in knowledge management processes, which includes knowledge sharing. However, the research on what motivates knowledge sharing has been mixed. The model developed in this paper attempts to reconcile these findings by examining the costs and benefits associated with knowledge sharing in the context of individuals' goal orientations then linking each of the orientations to preferences for knowledge sharing partners and the types of knowledge shared. In so doing our model contributes to research on knowledge transfer and also on goal orientation.

Those with performance goal orientations are less willing to expend the effort to exchange tacit knowledge than those with learning goal orientations who are intrinsically motivated to share. Those with avoidance motivations though are concerned about appearing incompetent making them less willing to share private knowledge due to the uncertainty about the value of the knowledge and how it will be received. Thus, some forms of knowledge are shared irrespective of individuals' goal orientation while other forms of knowledge, such as tacit private knowledge, are likely to be shared by those with a learning-prove goal orientation. This adds another dimension to research that highlights characteristics of the knowledge (e.g., Szulanski, 1996; Zander and Kogut, 1995) and the exchange context (e.g., Hansen, 1999; Reagans and McEvily, 2003) affect the likelihood of knowledge transfer. Accordingly, our arguments present another reason why certain forms of knowledge are difficult to transfer within organizations; only those with certain goal orientations are willing to engage in such exchanges and this may affect not only the sharing of knowledge but also the acquisition of knowledge.

Similarly, in linking goal orientations to dimensions of the relationship between the knowledge source and the knowledge recipient we expand our understanding of why individuals choose to share their knowledge with some and not others. Individuals with a performance-prove goal orientation are likely to be more sensitive to others' position in the organization or social network because they are likely to experience the greatest positive outcomes when they demonstrate their competence to those in structurally desirable positions. In contrast, those with a performance-avoid goal orientation would be particularly sensitive to the quality of the relationship with a potential recipient because of their fear of

appearing incompetent. Those with either learning goal orientation however are likely to share knowledge with those they have a common language to facilitate achieving their learning objectives but those with a learning-avoid goal orientation are also likely to limit their knowledge sharing to those recipients they also share a close relationship with in order to limit their risk of making mistakes and giving the appearance of incompetence. These differences may help explain why knowledge does not always transfer across strong ties, why sometimes individuals are willing to share their more unique knowledge with people they do not have a social connection with, and why organizational members often value knowledge from an outsider more favorably than the same or similar knowledge from other organizational members (e.g., Hansen, 1999; Menon and Pfeffer, 2003; Reagans and McEvily, 2003; Thomas-Hunt *et al.*, 2003).

The model we develop has important implications for management practice. For example, organizations may need to develop selection processes that increase the probability of hiring individuals with a learning-prove goal orientation, especially in positions that require high levels of knowledge sharing. Matching an individual's goal orientation with the knowledge sharing required in a particular position may increase organizational effectiveness. In addition, human resource management (HRM) practices may encourage the display of certain goal orientations. Though we treated goal orientations as stable dispositions, individuals may also display state-based goal orientations (e.g., Button *et al.*, 1996; Dragoni, 2005; Payne *et al.*, 2007). An organization's HRM practices represent a key signal of what the organization values (Guzzo and Noonan, 1994; Rousseau and Greller, 1994; Rousseau and Wade-Benzoni, 1994) which could influence the goal orientation an individual displays in a particular organizational environment. Yahya and Wee-Keat (2002) find that certain HRM practices, such as training in creativity and empowerment as well as internal feedback and compensation systems that reward knowledge and group outcomes are positively associated with knowledge sharing behaviors. Our work present a reason behind Yayha and Goh's findings; practices that encourage an orientation towards learning rather than demonstrating competence can lead to more knowledge sharing. Other HRM practices that encourage learning orientations such as providing opportunities for employees to stay professionally current as well as encourage risk-taking should also be explored. These types of practices may lead to greater knowledge sharing by moving individuals away from performance goal orientations towards learning goal orientations. Additionally, if goal orientations are associated with preferences for the types of knowledge individuals are willing to share and with whom they are willing to share, HRM practices are also needed that facilitate a wide variety of coworker relationships to help employees develop awareness of each others' expertise, a common language, and the trust that facilitates the sharing of knowledge (Levin and Cross, 2004; Reagans and McEvily, 2003; Rothenberg, 2003; Snowden, 2000).

We hope the model developed here will stimulate further research into the factors that shape individuals' preferences for knowledge sharing. As we increase our understanding of what motivates individuals' to share as well as withhold their knowledge, we can begin to identify, develop, and implement management practices that encourage and facilitate knowledge sharing between employees throughout an organization.

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