

EAGERNESS AND WILLINGNESS TO SHARE: THE RELEVANCE OF DIFFERENT ATTITUDES TOWARDS KNOWLEDGE SHARING

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Session D-3

Abstract

This paper focuses on individuals' attitudes towards knowledge sharing. Beside a person's *willingness* to share knowledge, we also distinguish *eagerness* to share, defined as the extent to which an individual has a strong internal drive to communicate their individual intellectual capital to others. The foundations for this distinction are discussed, and hypotheses are presented concerning the relationship of these different attitudes to different ways of knowledge sharing. Our empirical results show a distinction in attitudes similar to the eagerness/willingness distinction, which is related to norms of collectivism and individualism. These attitudes are found to have consequences for knowledge sharing behavior: willing individuals tend to collect more knowledge than they donate, whereas eager people donate and collect in equal degrees. Also, eagerness is positively related to knowledge donating, where willingness is positively related to both donating and collecting. In order to further investigate the meaning of this distinction, however, it needs to be operationalized more sharply.

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Suggested track: D. Knowledge sharing

1 Introduction

An organization's knowledge is becoming an increasingly important resource in today's "knowledge economy" (e.g. Conner and Prahalad, 1996; Grant, 1996; Nahapiet and Ghoshal, 1998; Pettigrew and Whip, 1993). An important question is, consequently, how to effectively manage this important resource (Davenport & Prusak, 1998; Drucker, 1993; Hansen, Nohria & Tierney, 1999). The sharing of knowledge between individuals and departments in the organization is considered to be a crucial process here (O'Dell & Grayson, 1998; Osterloh & Frey, 2000). Determining which factors

promote or impede the sharing of knowledge within groups and organizations constitutes an important area of research.

In this paper, we focus on individuals' attitudes towards knowledge sharing, and the way these attitudes influence the extent to which and way in which they share knowledge. With regard to this attitude, we present a new and relevant distinction between the *willingness to share* on the one hand, and the *eagerness to share* on the other (Van den Hooff, De Ridder & Aukema, in press).

Willingness is defined as:

the extent to which an individual is prepared to grant other group members access to their individual intellectual capital.

Eagerness, on the other hand, is defined as:

the extent to which an individual has a strong internal drive to communicate their individual intellectual capital to other group members.

The distinction between willingness and eagerness is a primarily theoretical one, and the purpose of this paper is to further explore this distinction, to operationalize it in measurable terms, and to empirically investigate its consequences with regard to extent and way of knowledge sharing. With that, the research question central to this paper is:

Can the distinction between willingness and eagerness to share knowledge be found in practice, and if yes, do willingness and eagerness have different consequences for the extent to which and way in which knowledge is shared by individuals?

In order to answer this question, we will first explore theory concerning the distinction between eagerness and willingness to share knowledge, and relate this distinction to extent and ways of knowledge sharing. Then, we will discuss a number of concepts related to this distinction, leading to our operationalization of the concepts of willingness and eagerness. Finally, we will present the results of a survey study among five different organizations in which these measures are used to test our hypotheses.

2 Theory: willingness, eagerness and knowledge sharing

Knowledge sharing is the process where individuals mutually exchange their (tacit and explicit) knowledge and jointly create new knowledge. This definition implies that every knowledge sharing process consists of both bringing (or '*donating*') knowledge and

getting (or '*collecting*' knowledge), in line with a number of other authors (Ardichvili, Page and Wentling, 2003; Oldenkamp, 2001; Weggeman, 2000). Both processes have their own dynamics, and are influenced in different ways by individual, organizational and technological factors (Van den Hooff & De Leeuw van Weenen, 2004; Van den Hooff & De Ridder, in press).

Collectivism and individualism, eagerness and willingness

In a field experiment we conducted in 2002, we focused on the role of group norms on knowledge sharing (Van den Hooff, De Ridder & Aukema, in press). Based on literature concerning collectivism and individualism (Eby & Dobbins, 1997; Geertz, 1974; Gladstein, 1984; Moorman & Blakely, 1995; Triandis, 1989; Wagner & Moch, 1986; Wagner, 1995) we expected that people would share their knowledge more actively in a collectivist condition than in an individualist condition.

In the experiment, members of the organization were assigned to groups that were given a knowledge-sharing task within an ICT environment – a 'virtual office'. This environment enables project groups or teams to create their own ICT environment, in which they can store and share documents, have discussions, manage a shared calendar, et cetera. 54 persons participated in the experiment, divided among 17 groups. Each group had their own virtual office at their disposal, which they were asked to use for a number of tasks. People were not assigned to groups entirely randomly: the groups were divided into collectivists and individualists. The knowledge-sharing task consisted of a number of activities that, for each group, should result in a jointly written vision document on the value of virtual offices. Based on the activities participants exhibited during the experiment, their actual knowledge sharing behavior was scored on a 5-point scale.

The results of this experiment were ambiguous at best. We found that individualistic groups scored considerably higher on knowledge sharing behavior, although not significantly so. Still, individualistic groups seemed to be more active in their knowledge sharing behavior than collectivistic groups. These results were more contradictory to our expectations than in line with them.

The explanation for these results was sought in the distinction between *willingness* and *eagerness* to share. We expect that willingness will be positively influenced by a collectivist group norm, where people's prime focus is on contributing to the collective interest. So, these people will be more willing to contribute to the collective intellectual capital of the group in a collectivistic condition. However, our assumption is that under individualistic conditions (especially in ICT-mediated

knowledge sharing), people who are *eager* to share play a more prominent role. Where individual interests are prominent (i.e., an individualistic group norm is salient), an individual's attitude towards knowledge sharing can still be positive. Although individuals within such a group do contribute to the public good of collective intellectual capital, their rationale for doing so is not that they 'forgo self-interest and act in the interests of the collectivity' (as Coleman (1988: S104) defines a collectivistic norm). Their prime motivation is that they feel that they have something to contribute as an individual, which they themselves consider to be valuable, and for which they will be appreciated. As said before, the norm of reciprocity is salient within a group with an individualistic norm – but not in the sense that the knowledge 'donor' expects others to return the favor, but in the sense that he or she wants to be appreciated and recognized for it. All in all, this leads to our first two hypotheses:

H1. Collectivism is positively related to an individual's *willingness to share* .

H2. Individualism is positively related to an individual's *eagerness to share*.

Donating and collecting

Returning to our distinction between knowledge donating and knowledge collecting, both processes can be expected to have a specific relationship with eagerness and willingness.

Although both willingness and eagerness are positive attitudes towards knowledge sharing, there are some important differences. Willingness implies a positive attitude to other members of a group, a readiness to reply to colleagues kindly. *Willingness to share* is related to a somewhat passive way of knowledge sharing. Actors are willing to contribute to the collective intellectual capital, but they do not have an internal drive to do so. *Eagerness*, on the other hand, implies a positive attitude to actively donating knowledge. We use *eagerness* to indicate a proactive way of sharing knowledge. People are eager to show what they know, because they themselves consider it valuable and expect their individual performance to be appreciated.

So for people who are *willing* to share their knowledge, the norm of *reciprocity* is important – they expect others to contribute as well (Adler & Kwon, 2002; Nahapiet & Ghoshal, 1998; Putnam, 1993). Therefore, people who are willing to share their knowledge seek to attain a balance between donating and collecting knowledge. *Eager* people, on the other hand, have a strong internal drive to communicate their knowledge, regardless of the group's goals or any directly tangible benefits they can expect from it. Eager people expect 'soft benefits' such as elevated reputation and peer recognition in return (Boer et al., 2002; Butler et al, 2002; Hall, 2001; Hinds & Pfeffer,

2003; Lerner & Tirole, 2000; Von Hippel, 2001; Von Hippel & Von Krogh, 2003). In line with Chen, Chen, and Meindl (1998), we argue that those eager to share are more geared towards sending information, prefer verbal and 'lean' communication and focus on their own views over creating a common view (Ting-Toomey, 1988). Therefore, we expect that eager people will be more geared towards donating their knowledge than to collecting others' knowledge. Based on this, we hypothesize:

- H3.** People who are *eager to share* will donate more knowledge than they collect.
- H4.** People who are *willing to share* will donate and collect knowledge to equal degrees.

Tacit and explicit knowledge

Building on this, we can also expect that there will be a difference in the *kinds* of knowledge willing and eager people share. 'Eager' communication styles have been previously defined in terms of sending, verbal information and 'lean' media. ICT, Chen et al. (1998) argue, fosters such styles of communication. Therefore, 'eager' communication styles can be characterized in terms of sending, verbal information and 'lean' media (Chen et al., 1998), and are aimed at what Nonaka and Takeuchi (1995) call 'externalization': making tacit knowledge explicit. For those willing to share, however, socially 'rich' media such as face-to-face communication are preferred, enabling them to create a common sense in the group, to get a feeling for the group's consensus. This richer interaction also facilitates processes such as 'socialization' (Nonaka & Takeuchi, 1995), sharing tacit knowledge.

- H5.** People who are *eager to share* will share more explicit knowledge than tacit knowledge.
- H6.** People who are *willing to share* will share explicit and tacit knowledge to equal degrees.

Before we test these hypotheses, however, it is important to investigate whether our theoretical distinction between eagerness and willingness can actually be found in practice. In other words, can we empirically measure eagerness and willingness as different dimensions of an individual's attitude towards knowledge sharing?

3 Method: measuring eagerness and willingness

In this section, we will discuss the methods used to empirically test the hypotheses presented above. Since one of our aims is to discover an appropriate measurement for eagerness and willingness, special attention will be paid to these variables.

Method: survey research

In our empirical study, we used a survey to measure the key variables and test the relationships hypothesized above. The survey consisted of 47 questions, primarily statements with five point answering categories - ranging from strongly disagree to strongly agree, except for the measure for explicit and tacit knowledge, which used a five point scale concerning the use of certain instruments, ranging from never to often. The survey was made available online, and 488 respondents from five different organizations were approached with the request to fill in this questionnaire. The five organizations are:

- a large multinational from the petrochemical sector,
- a large international accountancy and management consultancy firm,
- an international organization producing and selling polyethylene foam,
- a Dutch institute for mental health care,
- a small Dutch consultancy in the area of social issues.

On the whole, 103 respondents filled out the complete questionnaire, producing a response rate of 21%.

Measurements: eagerness and willingness

The distinction between eagerness and willingness is new, and in order to be able to measure these concepts, we have to turn to literature on related concepts. The definitions of eagerness and willingness lead us to the following concepts that we expect to be related to our distinction:

- individualism/collectivism
- ideocentrism/allocentrism
- individual self/collective self
- proactive/reactive behavior.

In our first two hypotheses (and on the basis of the experiment described before), we expect to find a relationship between the dimensions of *collectivism* and *individualism* on the one hand, and eagerness and willingness on the other. Therefore, existing measurements for collectivism / individualism might be a good way to start our search for the operationalization of eagerness and willingness. These dimensions have been frequently studied (Geertz, 1974), and have been related to both culture and individual's self-definition. It is primarily this self-definition we are interested in here, as it is not the group or cultural norm we are focusing on, but the individual's attitudes.

Therefore, we focus on what Triandis et al. (1985) call the distinction between *ideocentrism* and *allocentrism*, which Triandis et al. use to describe individual behavior within a given culture. Hulbert, Corrêa Da Silva and Adegboyega (2001) describe ideocentrists as people without particular group attachments, self-definition on the basis of individual needs and focused on self-reliance and independence. Allocentrists, on the other hand, are described as defining themselves with respect to the group, internalizing group norms and valuing interdependence (Hulbert et al, 2001: 643). This points towards another, related distinction: the individual self (self-representation independent of group membership) versus the collective self (self-representation derived from group membership) (Gaertner, Sedikides, Vevea & Iuzzini, 2002). For ideocentrists the individual self is mostly primary, whereas allocentrists primarily use a collective self-definition. Hulbert et al. use Griesinger and Livingston's (1973) representation of social values to further refine the distinction between allocentrists and ideocentrists – the extent to which individuals aim to maximize or minimize their own or others' outcomes, respectively (Figure 1).

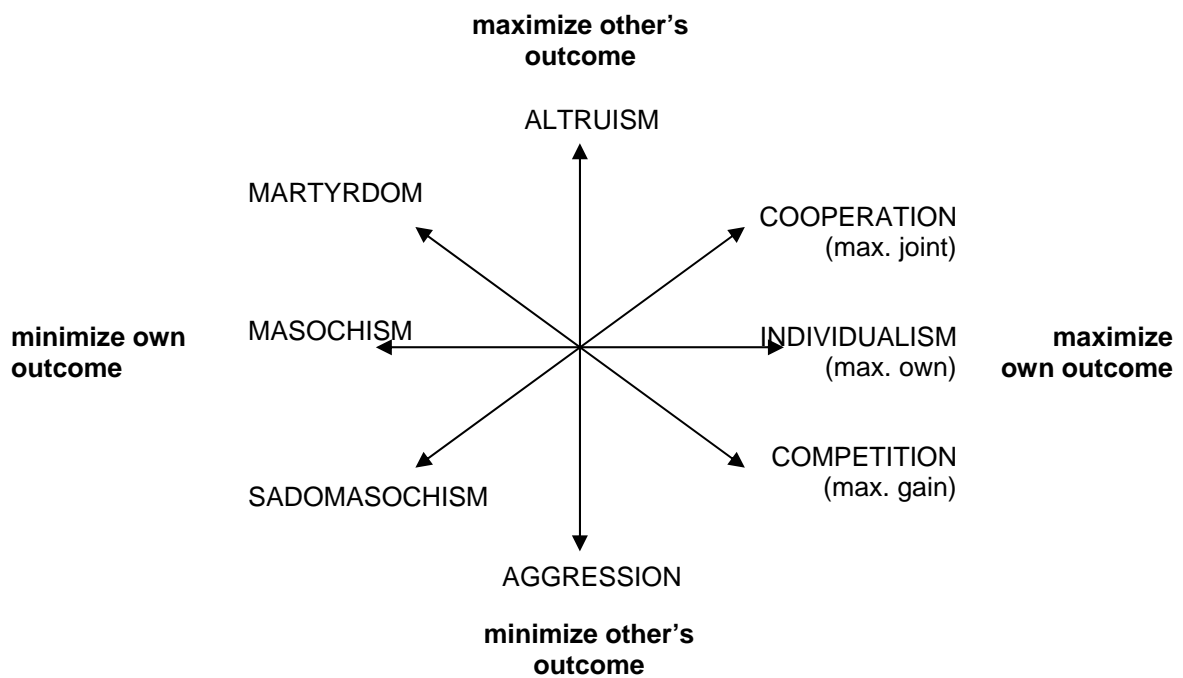


Fig. 1. ideocentrism and allocentrism (adapted from Hulbert et. al, 2001: 644)

This could be a useful distinction for us to base our measures for willingness and eagerness on – hypothesizing that eager individuals can be described in terms of *individualism*, and willing individuals in terms of *cooperation*. Our assumption is that eager individuals' primary motivation for sharing knowledge is not derived from the

collective interest, but from satisfying their individual needs, whereas those willing to share are focusing on both the common and their individual goals.

Finally, we also considered the distinction between proactive and reactive behavior. Proactive behavior is defined by Crant (2000: 436) as “taking initiative in improving current circumstances or creating new ones; it involves challenging the status quo rather than passively adapting to present conditions”. Although our conceptualization of eagerness is a bit more individual-oriented than this, an element of proactivity is certainly present: eager individuals do not wait for others to start the knowledge sharing process, they take the initiative themselves.

We collected literature concerning the dimensions of collectivism/individualism, allocentrism/individualism (together with social value orientation), collective self vs. individual self and proactive behavior. We drew up a list of items derived from this literature: Bateman & Crant (1993), Hui (1984), Johnson & Norem-Hebeisen (1979), Kashima et al. (1995), Kuhn & McPartland (1954), Rokeach (1973), Schwartz (1992), Triandis et al. (1985), Triandis & Gelfand (1998), Yamaguchi (1994). Then, we filtered this list to see which ones could be translated to our central subject of attitude towards knowledge sharing.

Ultimately, the items we used to measure eagerness and willingness connected to these distinctions in spirit, but no items from studies concerning these distinctions were used literally, since they did not concern knowledge sharing explicitly enough. Many items were more general in nature than what we needed – although many of the ideas in such items were used to create our own list of items. Table 1 lists the items for eagerness and willingness. We performed a principal components factor analysis with varimax rotation to identify the different dimensions within this list of items. The results of this analysis are also presented in table 1.

Table 1. Eagerness and willingness: items and factor loadings

item	factor loadings			
	1	2	3	4
I like helping my colleagues.	.833			
I like being appreciated for what I know or what I can do.	.638			
I like sharing my knowledge and capabilities with my colleagues.	.817			
I can learn a lot from my colleagues.	.441			
I try to share my knowledge and ideas with colleagues if I can help them.	.587			
I tell my colleagues about things that I consider important - even if they don't ask me for it.		.746		
I tell my colleagues what I know more often than they tell me what they know.		.477		
My colleagues can learn a lot from me.		.555		
I keep my colleagues informed of what I know, even if they don't ask me about it.		.826		
I like to know what knowledge my colleagues already have, before I tell them what I know.			.676	
I only share my knowledge with colleagues when I get something in return.			.694	
For me, consensus in the group is important.				-.481
I can be very enthusiastic when I discover something new.				.639
I don't really care what others think.				.312
I like sharing my knowledge with my colleagues, if they share their knowledge with me in return.				.412

Table 1 shows that a total of four factors can be derived from the list of items we used to measure eagerness and willingness. Factors 1 and 2 are relevant for our further research. These factors can be assumed to measure either willingness or eagerness, since they both consist almost exclusively of items measuring either willingness or eagerness. The one exception to this is the item “I like being appreciated for what I know or what I can do”, which was assumed to measure eager people’s preference for soft benefits such as peer recognition, and in this analysis is found to be part of the willingness scale. Apparently, such peer recognition and appreciation is an important part of a climate in which people become willing to share their knowledge, together with other people’s willingness to share their knowledge and contribute to the common goal. Further testing reveals that these items form scales with a satisfactory reliability, as table 2 shows.

Table 2. Scales for eagerness and willingness

scale	items	M	SD	alpha
eagerness		3.3	.64	.60
	I tell my colleagues about things that I consider important - even if they don't ask me for it.			
	I tell my colleagues what I know more often than they tell me what they know.			
	My colleagues can learn a lot from me.			
	I keep my colleagues informed of what I know, even if they don't ask me about it.			
willingness		4.2	.41	.65
	I like helping my colleagues.			
	I like being appreciated for what I know or what I can do.			
	I like sharing my knowledge and capabilities with my colleagues.			
	I can learn a lot from my colleagues.			
	I try to share my knowledge and ideas with colleagues if I can help them.			

On the basis of tables 1 and 2, our preliminary conclusion can be that different attitudes towards knowledge sharing can be distinguished. Both attitudes are positive towards knowledge sharing, but one is characterized by an orientation on the collective (willingness), and the other is more individualistic and sender-oriented (eagerness). Items that were theoretically assumed to be important, however, such as the norm of reciprocity for willingness, and the importance of soft benefits and the enthusiasm for communicating new ideas for eagerness, are not part of these scales. So, the empirical distinction seems somewhat more 'moderate' than the theoretical one, in the sense that both scales measure rather 'friendly' attitudes. The economically rational behavior assumed to be part of willingness ('tit for tat') is not present here, and neither is the somewhat self-centered nature of eagerness. Still, there is a distinction, and we can use it for our further analyses.

Measurements: collectivism / individualism

In order to measure collectivism, we used five of the items presented by Kashima et al. (1995), together with five items constructed by ourselves and inspired by a number of measures for this variable, for instance by Johnson and Norem-Hebeisen (1979) and Triandis and Gelfand (1998). Although principal components factor analysis with varimax rotation produced three dimensions within this variable, the ten items taken together produced the most reliable scale. The items did not load on the three factors in such a way that three meaningful variables could be created from these factors, two of which produced scales with highly insufficient alphas. For these reasons, we chose

to consider the whole list of items as one scale, a high score on which measures collectivism, whereas a low score stands for individualism.

Table 3. Scale for collectivism

scale	items	M	SD	alpha
collectivism		3.7	.42	.68
	I like working together with my colleagues.			
	I give priority to the group's interest over my own interests.			
	I respect decisions made by the group.			
	I think it's important that each member of the group contributes their share.			
	I am willing to do anything for the group, even if this means that I have to sacrifice my own interests.			
	I stick with my group, even through difficulties.			
	I think it is important to have nice colleagues around me.			
	I work better on my own. (RECODE)			
	I won't sacrifice my own interests for the group's interests. (RECODE)			
	I prefer to do my work alone, rather than with colleagues. (RECODE)			

Measurements: knowledge donating / collecting

In order to measure the processes of knowledge donating and knowledge collecting, we used a list of items that was partly based on previous research concerning knowledge sharing (Van den Hooff & De Ridder, in press; Van den Hooff & De Leeuw van Weenen, 2004), supplemented with a number of newly constructed items. A principal components factor analysis with varimax rotation confirmed that two dimensions could be distinguished within this list of items: donating and collecting knowledge.

Table 4. Scales for donating and collecting knowledge

scale	items	M	SD	alpha
donating		3.9	.49	.68
	When I've learned something new, I tell my colleagues about it.			
	I share the information I have with my colleagues.			
	I think it is important that my colleagues know what I am doing.			
	I regularly tell my colleagues what I am doing.			
collecting		4.1	.48	.72
	When I need certain knowledge, I ask my colleagues about it.			
	I like to be informed of what my colleagues know.			
	I ask my colleagues about their abilities, when I need to learn something.			
	When a colleague is good at something, I ask them to teach me how to do it.			

Measurements: tacit and explicit knowledge

Finally, for the extent to which people share tacit and explicit knowledge, we chose to use the instruments used in knowledge sharing as an indicator. Respondents were asked to what degree they used each of the instruments in table 5 (on a five point scale ranging from “never” to “often”). A principal components factor analysis with varimax rotation produced four factors, as shown in table 5.

Table 5. Tacit and explicit knowledge: items and factor loadings

item	factor loadings			
	1	2	3	4
Collaborating in project teams	.714			
Learning on the job	.788			
Coaching (senior-junior relationship)	.798			
Intranet		.409		
Staff magazine		.738		
Internal bulletin		.813		
Databases		.556		
Telephone			.818	
E-mail			.814	
Brainstorm session				.561
Informal communication				.580
Lunch meeting				.568

From these analyses, we derived three scales: factor 1 measures “tacit collaboration” (Cronbach’s alpha = 0.75), factor 2 measures “explicit storage & retrieval” (Cronbach’s alpha = 0.58) and factor 3 measures “explicit exchange” (Cronbach’s alpha = 0.56). Although for the latter two scales, Cronbach’s alpha is insufficient, we decided to use these scales nevertheless. First of all, we need some measure of explicit knowledge sharing in order to test our hypotheses, and the alphas are rather close to the minimal criterion of .60. Secondly, the distinction between “exchange” on the one hand, and “storage & retrieval” on the other, might be a very relevant one.

4 Results: eagerness and willingness in practice

On the basis of the results discussed in the previous section, we can conclude that different positive attitudes towards knowledge sharing do exist, and that the different dimensions found could be explained in terms of eagerness and willingness. Using this distinction, we can see if differences in knowledge sharing behavior exist between those eager and willing to share, thus testing the hypotheses presented before and answering our research question.

The first two hypotheses concern the relationship between norms of collectivism and individualism on the one hand, and eagerness and willingness to share on the other. Based on theory, we would expect collectivism to be positively related to willingness, and individualism to be positively related to eagerness. As discussed before, we have chosen to use one scale to measure both individualism and collectivism – a high score on this scale is related to collectivism, a low score to individualism. Therefore, we would expect this variable to be positively correlated to willingness to share, and a negatively to eagerness to share. Our analysis did show a positive correlation with willingness (Pearson $r = .331$, $p < .01$), but no correlation between the individualism / collectivism scale and eagerness. It would seem that collectivism is indeed an important condition for those willing to share (providing support for H.1.), but we can not conclude that individualism is related to eagerness, so we have to reject H.2.

Next, the difference in knowledge sharing behavior in terms of donating and receiving is addressed. In order to be able to compare eager respondents with willing respondents, we had to create two groups. We did this in two ways.

First, we used the criterion that respondents scoring higher than the median on willingness or eagerness could be considered to be willing or eager, respectively. The median score for eagerness is 3.4, with 49% scoring lower than this and 51% scoring above the median. The group scoring above the median is called “eagerhigh” (N=52), for high on eagerness. For willingness, the median score is 4.2, with 53% scoring lower and 47% scoring higher than the median. The latter group is labeled “willinghigh” (N=47), for high on willingness. These groups are not mutually exclusive – a respondent can score high on both eagerness and willingness! Since these attitudes are not assumed to be mutually exclusive, this does not contradict our theoretical assumptions – although it might be somewhat confusing in analytical terms.

Therefore, in order to further explore the differences between eager and willing individuals, we also made a sharper distinction by creating two other groups: “eagerex” for those exclusively eager (scoring high on eagerness but *not* scoring high on willingness, N=26) and “willingex” for those exclusively willing (scoring high on willingness but *not* scoring high on eagerness, N=21).

For these groups, paired sampled t-tests were conducted in order to determine whether the score on knowledge donating for each group differed significantly from the group’s score on knowledge collecting. The results of these tests are presented in table 6.

Table 6. Knowledge donating and collecting by willing and eager individuals

group	knowledge donating (M)	knowledge collecting (M)	t-value	p
willinghigh (high on willingness)	4.0	4.3	-3.2	.002*
eagerhigh (high on eagerness)	4.0	4.1	-1.8	.084
willingex (exclusively willing)	3.9	4.2	-2.7	.014*
eagerex (exclusively eager)	3.9	3.9	-0.3	.783

The results in table 6 show that people willing to share collect significantly more knowledge than they donate. For both the “willinghigh” group ($p = .002$) and the “willingex” group ($p = .014$), this difference is found to be significant. For those eager to share, however, no differences were found between knowledge donating and knowledge collecting for either group.

On the basis of these results, hypotheses H.3 and H.4 are rejected. We *do* find a difference in the extent to which willing and eager people donate and collect knowledge, but this difference is not as expected. Where we expected eager individuals to donate more than they collect (since they are more geared towards sending and care less about consensus and reciprocity), no difference was found for this group. Where no difference was expected – for those willing to share, who were expected to search for and maintain a balance between supply and demand precisely because they *do* care about reciprocity – we found that collecting scored higher than donating. So the trend *is* in line with our expectations (eager people relatively more inclined to donate), but the actual results provide no support for the hypotheses.

Next, we consider the differences in knowledge sharing in terms of tacit and explicit knowledge. We used the same groups for these analyses as we did for the previous one: willinghigh / eagerhigh and willingex / eagerex. Again, paired sampled t-tests were performed in order to determine whether differences could be found in the extent to which tacit and explicit knowledge were shared, respectively. Table 7 shows the results for these analyses.

Table 7. Knowledge donating and collecting by willing and eager individuals

group	a: tacit (M)	b: expl. S&R (M)	c: expl. ex. (M)	a-b		a-c	
				t-value	p	t-value	p
willinghigh (high on willingness)	3.9	2.5	4.5	8.7	.000*	-3.5	.001*
eagerhigh (high on eagerness)	3.7	2.5	4.3	9.8	.000*	-4.1	.000*
willingex (exclusively willing)	3.8	2.4	4.6	4.9	.000*	-3.2	.005*
eagerex (exclusively eager)	3.5	2.4	4.3	6.5	.000*	-4.3	.000*

Table 7 lists the means for the three scales defined before: tacit collaboration ('tacit'), explicit storage & retrieval ('exp. S&R') and explicit exchange ('exp. ex.'). In the next columns, the results for the paired samples t-tests are presented for the differences between tacit and explicit S&R ('a-b') and tacit and explicit exchange ('a-c').

The results show that there is a quite consistent difference in scores across all groups: explicit exchange (i.e., use of telephone and e-mail) scores significantly higher than tacit collaboration (i.e., collaborating in project teams, coaching, and learning on the job). Tacit collaboration, in turn, scores significantly higher than explicit storage and retrieval (i.e., intranet, databases, staff magazine and internal bulletin). So, there is no clear tacit / explicit distinction here, more a distinction concerning the nature of the instruments used. E-mail and the telephone are instruments used throughout the day, for short and informal exchanges as well as for more formal and lengthy communication. Collaborating in project teams or in senior/junior settings has quite a different frequency of use, of course, and the same goes for the use of databases or the staff magazine. Therefore, we can conclude that the use of particular instruments is not a sound measure for tacit and explicit knowledge sharing. On the basis of these results, no conclusions can be drawn with regard to hypotheses H.5 and H.6.

In order to further test the influence of eagerness and willingness on knowledge sharing, two more t-tests were performed. First, an independent samples t-test was performed comparing the two groups 'eagerex' and 'willingex' with regard to their scores on knowledge donating, knowledge collecting, and their sharing of tacit knowledge and explicit knowledge. The results of this analysis are presented in table 8.

Table 8. Comparing exclusively eager and exclusively willing individuals

variable	exclusively eager (M)	exclusively willing (M)	t-value	p
knowledge donating	3.9	3.9	-0.2	.836
knowledge collecting	3.9	4.2	-1.9	.062
tacit	3.7	3.9	-1.1	.295
explicit exchange	4.3	4.6	-1.7	.102
explicit s&r	2.4	2.4	-0.4	.711

Although the results in table 8 at first glance show a difference in knowledge collecting and explicit exchange (exclusively willing individuals scoring higher on both), these differences are not significant. On the basis of these analyses, we cannot conclude that exclusively willing individuals' knowledge sharing behavior differs from exclusively eager individuals' knowledge sharing behavior.

One final independent samples t-test was performed to compare those scoring high on eagerness with those scoring low on this variable, and those scoring high on willingness with those scoring low. The results of this analysis are presented in table 9.

Table 9a. Comparing high scorers and low scorers on eagerness

group	low on eagerness (M)	high on eagerness (M)	t-value	p
knowledge donating	3.7	4.0	-3.0	.004*
knowledge collecting	4.0	4.1	-1.0	.318
tacit	3.9	3.9	0.1	.935
explicit exchange	4.4	4.3	0.4	.683
explicit s&r	2.5	2.5	-0.1	.911

Table 9b. Comparing high scorers and low scorers on willingness

group	low on willingness (M)	high on willingness (M)	t-value	p
knowledge donating	3.7	4.0	-3.2	.002*
knowledge collecting	3.9	4.3	-4.0	.000*
tacit	3.8	4.0	-1.6	.105
explicit exchange	4.2	4.5	-1.6	.120
explicit s&r	2.4	2.5	-0.7	.465

The results presented in table 9 lend some more support to our expectations than our previous findings. Eagerness is positively related to knowledge donating, as expected – but so is willingness. Willingness, though, is also positively related to knowledge collecting. This provides some support for our assumption that eager people are primarily geared towards donating knowledge: high scorers on eagerness donate more than low scorers, but no difference is found for knowledge collecting. It also supports the assumption that willing individuals seek to attain and maintain more of a balance between knowledge donating and knowledge collecting: high scorers on willingness score significantly higher on both knowledge sharing processes.

5 Conclusions

In this paper, a first empirical exploration was discussed of a distinction between two different positive attitudes toward knowledge sharing: willingness and eagerness to share. Our results indicate that a distinction similar to the one proposed does exist, and that it does influence the practice of knowledge sharing. We found two relevant dimensions within our list of items measuring willingness and eagerness, which largely corresponded with the distinction we assumed – although the actual scales we could create to measure these variables did not include some theoretically important aspects,

such as the norm of reciprocity for willingness, and the importance of soft benefits and enthusiasm for communicating new ideas for eagerness. A first recommendation for future research would therefore be, to construct new items measuring such aspects, and create new scales for willingness and eagerness in which such aspects *are* included. The way willingness and eagerness have been operationalized in this study may have been a little 'moderate', in the sense that the distinction between the two attitudes was insufficiently sharp.

Still, the attitudes distinguished here did produce some interesting relationships. First of all, the proposed positive relationship between collectivism and willingness was supported, although the proposed relationship between individualism and eagerness was not found. Secondly, willing individuals collected more knowledge than they donated, which is an indication that the norm of reciprocity is certainly salient for them. For eager individuals, no difference between donating and collecting knowledge was found. So, in a way, these results do indeed indicate that, relatively speaking, eager individuals are less interested in receiving knowledge in return for the knowledge they donate than willing individuals are. Although we had expected that willing individuals would seek to attain and maintain a balance between donating and receiving, and eager individuals would donate more than they collect, these results are not entirely contradictory to our expectations. It could very well be that, generally speaking, people are more inclined to collect knowledge than they are to donate knowledge – and that for eager individuals, this difference does not exist since they are relatively more oriented towards sending. Another explanation could be the measurement problem addressed before: maybe our eagerness scale measures only a very moderate form of eagerness, one that is somewhat closer to willingness than is conceptually sound. This again stresses the importance of constructing better scales for these variables.

Finally, we *did* find that eagerness is positively related to knowledge donating only, and willingness to both donating and collecting, which does provide support for our assumption that eager individuals are more sender-oriented whereas willing individuals aim for a balance between donating and collecting.

So on the whole, it would seem we are on to something here, but further research is necessary. The scales for eagerness and willingness have to be supplemented with items concerning specific dimensions of both attitudes that help making a sharper distinction between the two. Measurements for explicit and tacit knowledge sharing have to be developed which do provide for the analysis of mutual differences between these modes of knowledge sharing, contrary to the instrument-based measurement used in this study. Such measurements should then be integrated

in a larger study of the influence of these attitudes on knowledge sharing, in which variables influencing the emergence of these attitudes are also included. Beside social norms of collectivism, organizational characteristics, individual characteristics and characteristics of the knowledge sharing task at hand can also be expected to be related to these attitudes. Therefore, a research project consisting of a number of case studies within different organizations, using improved measurements for key variables, is called for. Preceding such case studies, a number of experiments can be conducted in order to analyze exactly what processes cause people to become eager or willing, and how knowledge sharing processes can be influenced by these attitudes. Such an experiment will also help create improved measurements for these variables, which can then be applied in a multiple case study in order to get a more complete picture of the relationship between willingness, eagerness and knowledge sharing behavior.

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