

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/228109428>

# Who Trusts? Personality, Trust and Knowledge Sharing

Article in *Management Learning* · December 2006

DOI: 10.1177/1350507606073424

---

CITATIONS

284

---

READS

1,327

3 authors:



**Todd A. Mooradian**

College of William and Mary

43 PUBLICATIONS 1,692 CITATIONS

SEE PROFILE



**Birgit Renzl**

Universität Stuttgart

110 PUBLICATIONS 2,325 CITATIONS

SEE PROFILE



**Kurt Matzler**

University of Innsbruck

399 PUBLICATIONS 9,447 CITATIONS

SEE PROFILE

Some of the authors of this publication are also working on these related projects:



Organizational routines in Scrum teams [View project](#)



Exploring the micro-dynamics of dynamic capabilities [View project](#)

# Management Learning

<http://mlq.sagepub.com>

---

## **Who Trusts? Personality, Trust and Knowledge Sharing**

Todd Mooradian, Birgit Renzl and Kurt Matzler

*Management Learning* 2006; 37; 523

DOI: 10.1177/1350507606073424

The online version of this article can be found at:  
<http://mlq.sagepub.com/cgi/content/abstract/37/4/523>

---

Published by:

 SAGE Publications

<http://www.sagepublications.com>

**Additional services and information for *Management Learning* can be found at:**

**Email Alerts:** <http://mlq.sagepub.com/cgi/alerts>

**Subscriptions:** <http://mlq.sagepub.com/subscriptions>

**Reprints:** <http://www.sagepub.com/journalsReprints.nav>

**Permissions:** <http://www.sagepub.com/journalsPermissions.nav>

**Citations** (this article cites 31 articles hosted on the SAGE Journals Online and HighWire Press platforms):  
<http://mlq.sagepub.com/cgi/content/abstract/37/4/523#BIBL>



# Todd Mooradian, Birgit Renzl and Kurt Matzler

*College of William and Mary, USA, University of  
Innsbruck, Austria and Johannes Kepler University,  
Austria*

## Who Trusts? Personality, Trust and Knowledge Sharing

**Abstract** *The strategic importance of knowledge sharing and its relationships with organizational and managerial (i.e. environmental) factors have been well documented. The effects of some context-specific individual factors—including interpersonal trust—on knowledge sharing have also been investigated. The effects of enduring and pervasive individual factors (i.e. personality) on knowledge sharing have not been adequately described empirically. This article links personality, specifically agreeableness, a broad personality domain and propensity to trust, a narrow personality facet, to knowledge sharing via interpersonal trust, thereby clarifying substantial person-related effects within these important workplace phenomena. Key Words: interpersonal trust; knowledge sharing; personality traits*

### Introduction

Enabling knowledge creation and knowledge sharing is essential to innovation and organizational success (Nonaka and Takeuchi, 1995; Spender, 1996; von Krogh et al., 2000). Nevertheless, knowledge sharing can be a demanding and uncertain process. At the individual level, it may evoke perceptions of conflict of interest or vulnerability (e.g. Argote et al., 2001). For example, Ardichvili et al. (2003) found that ‘fear of criticism’ and ‘fear of [inadvertently] misleading others’ can inhibit knowledge sharing. Therefore, understanding the various factors that facilitate or hinder knowledge sharing, including the individual level aspects of knowledge sharing, is important to both managers and academics.

Previous research has connected knowledge sharing to a variety of managerial and organizational factors and to transient, situation-specific attitudes and motives

including specifically interpersonal trust, which is the evaluation of the trustworthiness of specific others (such as managers and peers; see for example Dirks and Ferrin, 2001; Levin and Cross, 2004). No previous research has connected knowledge sharing to contemporary theories and frameworks of personality or temperament. The current research addresses that need. We explicate and test a model linking: (1) enduring individual differences construed within contemporary understandings of the hierarchical structure of personality; (2) interpersonal trust; and (3) knowledge sharing. These constructs are reviewed in the next sections in reverse order of our causal model.

## **Knowledge Sharing**

Knowledge sharing is defined as ‘the provision or receipt of task information, know-how and feedback regarding a product or procedure’ (Cummings, 2004: 352) and has been tied to a variety of managerial desirable outcomes including productivity, task completion time, organizational learning and innovativeness (e.g. Argote, 1999; Argote et al., 2000; Cummings, 2004; Hansen, 2002). In this study we focus on the ‘give side’ of knowledge sharing, i.e. the individual’s provision of knowledge. Various kinds of factors may influence knowledge sharing, including: (1) the properties of the knowledge itself, such as its degree of articulation and degree of aggregation (e.g. Spender, 1996; Blackler, 1995; Nonaka and Takeuchi, 1995); (2) the properties of management and managerial actions, such as coordination mechanisms, inter-unit or inter-group competition and managerial interventions aimed at increasing knowledge sharing, such as rewards and incentives (e.g. Cabrera and Cabrera, 2002; Tsai, 2002); (3) the properties of the environment, including macro-level environmental factors such as country culture (Nonaka and Takeuchi, 1995), technology and organization culture (Wasko and Faraj, 2005), and micro-level environmental factors, that is, the characteristics of the dyadic, interpersonal relationships in which knowledge sharing occurs, such as shared language, shared vision and strength of the interpersonal ties between two parties (e.g. Hansen, 1999; Levin and Cross, 2004) emphasizing the local character of knowledge which flows in social networks (Brown and Duguid, 2002; Gherardi et al., 1998); and (4) the properties of the individuals who share (or fail to share) knowledge, such as tenure with the firm, attitudes (including interpersonal trust, discussed in greater detail below (e.g. Dirks and Ferrin, 2001; Levin and Cross, 2004; McEvily et al., 2003)), motives and gender (e.g. Bock et al., 2005; Miller and Karakowsky, 2005).

## **Interpersonal Trust**

One individual level factor which ameliorates knowledge sharing is interpersonal trust in the workplace (e.g. Abrams et al., 2003; Levin et al., 2006; McEvily et al., 2003; Mayer et al., 1995). As noted above, interpersonal trust, ‘the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party’ (Mayer et al., 1995: 712),

is an attitude-like construct – an expectation related to past experience and focused on specific others such as managers or peers.<sup>1</sup> As such, it is distinct from propensity to trust (that is trait trust, ‘dispositional trust’, or ‘trust’; henceforth ‘propensity to trust’), which is a generalized and enduring predisposition that is neither focused on specific others nor dependent on specific contexts, and which may be related to lifetime experiences but also to temperament, and thereby to genetics and biophysiological structure. This conceptualization and labeling of propensity to trust is consistent with Mayer et al.’s proposal that propensity to trust is ‘a stable within party factor . . . the *general willingness to trust others*’ (1995: 715; emphasis in original). This distinction between trait and state trust, although challenging to operationalize (Couch et al., 1996; Rotter, 1967), is nevertheless meaningful and important and central to the current research.

Interpersonal trust in the workplace has been shown to have a strong and robust influence on a variety of organizational phenomena including job satisfaction, stress, organizational commitment, productivity and most relevant to the current research, knowledge sharing (see Kramer, 1999; Levin and Cross, 2004):

Trust leads to increased overall knowledge exchange, makes knowledge exchanges less costly and increases the likelihood that knowledge acquired from a colleague is sufficiently understood and absorbed that a person can put it to use. (Abrams et al., 2003: 65; see Levin and Cross, 2004)

Precursors of interpersonal trust include environmental and contextual factors and ‘malleable relational features’ such as shared language and shared vision (Abrams et al., 2003). Other research has explored the influences of characteristics of the relationships in which interpersonal trust occurs, such as strong versus weak ties (Hansen, 1999; Levin and Cross, 2004), and of certain characteristics of the individuals in the relationships, such as the length of their tenure and their perceived trustworthiness (Levin et al., 2006). Most of that research, like much of the research on the antecedents of knowledge sharing, has focused on environmental or contextual influences on interpersonal trust in the workplace: ‘While acknowledging their existence, organizational theorists generally have not evinced much interest in such individual differences’ (Kramer, 1999: 575).

In their integrative model of organizational trust, Mayer et al. (1995: 715) posit that propensity to trust, a stable ‘general willingness to trust others’ specifically distinct from situation-specific dispositions, increases trust ‘prior to availability of information about the trustee’ (1995: 716). Building on Mayer et al.’s model, Brown et al. (2004) proposed a relationship between state trust and trait trust in virtual collaboration activities, drawing on the interpersonal circumplex model of enduring interpersonal traits (e.g. Wiggins, 1979).

Only limited empirical tests (in both number and scope) of those conceptual propositions regarding propensity to trust in organizations have been reported. Payne and Clark (2003) relate ‘generalized trust’, measured with Kessler’s 1972 Self-Report Trust Scale (MacDonald et al., 1972), to cognitive and affective trust in two types of managers (‘immediate line manager’ and ‘senior managers in [the] industry’); however, they did not extend their model to any outcomes of trust. Jarvenpaa et al. developed a four-item measure of ‘propensity-to-trust students from other countries (i.e. foreign students)’ (1998: 37) and related it to state trust, which was influenced also by the trustor’s perceptions of the trustee’s ability,

benevolence and integrity. Ridings et al. (2002) related three items from Gefen's (2000) context-specific five-item measure of 'dispositional trust in the environment of the Internet' (Ridings et al., 2002: 282) to 'trust in others' ability' and 'trust in others' benevolence/integrity' within virtual communities. All of these trait-state trust studies are limited in scope and the generalizability of constructs and measures. None of these studies has linked trust to the integrative, hierarchical understanding of personality structure that has emerged in psychology, neither have any of these studies extended trait-state linkages to outcome behaviors (i.e. none have tested a trait-state-behavior chain of effects).

## Personality

### *Hierarchical Structure*

After decades of disparate theories and equivocal findings, the past 15 years have seen a revitalization of personality scholarship (see Funder, 2001) facilitated in part by the emergence of a consensus understanding that traits are well organized within five broad domains (i.e. the 'Five-factor Model' or 'Big Five'): extraversion, neuroticism, openness to experience (or intellect), agreeableness and conscientiousness. Importantly, these five domains encompass numerous narrower, more context-specific facets in a hierarchy of individual differences (see John and Srivastava, 1999; McCrae, 2004). This structure emerges across observers (e.g. self-reports and peer-reports), methodologies (questionnaires and lexical inventories), the lifespan, languages and cultures (e.g. John and Srivastava, 1999; McCrae, 2004; Saucier and Ostendorf, 1999). In that hierarchical structure the five high-level 'domains' are related most closely to underlying biophysiological and genetic structures (Bouchard and Loehlin, 2001; McCrae and Costa, 2003) while the lower-level, narrower and domain-specific 'facets' are related more closely to overt, observable behaviors (e.g. Paunonen et al., 2003).

### *Agreeableness*

Defined as the propensity to be altruistic, trusting, modest and warm and as a 'prosocial and communal orientation' (John and Srivastava, 1999: 121), agreeableness has been described as

the more humane aspects of humanity – characteristics such as altruism, nurturance, caring and emotional support at one end of the dimension and hostility, indifference to others, self-centeredness, spitefulness and jealousy at the other. (Digman, 1990: 422)

In lexical personality frameworks agreeableness subsumes facets (or 'subcomponents') such as 'warmth-affection', 'gentleness', 'generosity' and 'modesty-humility' (e.g. Saucier and Ostendorf, 1999) and is marked by adjectives such as 'kind', 'sympathetic', 'undemanding' and 'warm' and inversely by 'cold', 'demanding' and 'harsh' (Goldberg, 1993). In the NEO framework 'the agreeable person is fundamentally altruistic . . . sympathetic to others and eager to help them and believes that others will be equally helpful in return' (Costa and McCrae, 1992: 16), including the facets of 'trust' (or 'propensity to trust'), 'straightforwardness',

'altruism', 'compliance', 'modesty' and 'tendermindedness' (Costa and McCrae, 1992; McCrae, 2004; McCrae and Costa, 2003).

Of course, the exact composition of agreeableness within any five-factor solution depends on choices among alternative factor rotations, especially in relation to extraversion and conscientiousness. Agreeableness may be characterized predominantly as a 'pleasant disposition' (i.e. warm, happy) or it may be primarily 'conformity with others' wishes' (i.e. amiable, compliant) depending on the factor rotation chosen (Johnson and Ostendorf, 1993). These distinctions and the variety of possible rotations of the defining axes are clarified with reference to the interpersonal circumplex model, in which agreeableness generally embodies high 'love/affiliation' (i.e. communion) and low 'status/dominance' (i.e. agency), that is, 'friendly submission' (see e.g. Graziano and Eisenberg, 1997).

Although influenced by genetics, agreeableness is the least heritable of the five domains (Bouchard and Loehlin, 2001; Graziano, 1994; Laursen et al., 2002; Waller, 1999) and has been related to childhood experiences, especially childhood 'difficultness' (Graziano, 1994), impulse control (Jensen-Campbell et al., 2002) and evolutionary functionality (MacDonald, 1998). Agreeableness may interact with other traits to produce positive and negative life outcomes:

High-agreeable types fared better than low-agreeable types in terms of their social, achievement and psychological outcomes. We conclude that it is not only nice to be agreeable, it is advantageous, particularly for those whose smiles are accompanied by other auspicious traits. (Laursen et al., 2002: 601)

The consequences of higher agreeableness include more and better interpersonal relationships, greater life satisfaction and better health (Asendorpf and Wilpers, 1998; Graziano et al., 1996). Disagreeableness is associated with, among other adverse outcomes, higher rates of alcoholism (Laursen et al., 2002), coronary heart disease (Smith and Glazer, 2004), violence and vandalism (Heaven, 1996). In the workplace, agreeableness predicts better performance evaluations, especially in jobs involving interpersonal interactions and collaboration with others and customer service settings (Hurtz and Donovan, 2000; Hurley, 1998; Mount et al., 1998) and such behaviors as the giving and receiving of non-job and work-related social support (Bowling et al., 2005), lower workplace deviance (i.e. 'saying something hurtful or acting rudely to a coworker') and more workplace helping behaviors (Colbert et al., 2004: 599; King et al., 2005). Thus, the literature on the content of agreeableness and its pervasive positive life and work consequences is extensive. However, no research that we are aware of connects this robust, high-level domain of personality to interpersonal trust or knowledge sharing behaviors.

### *P propensity to Trust*

P propensity to trust, or trait trust, 'is essentially a tendency to make attributions of people's actions in either an optimistic or pessimistic fashion' (DeNeve and Cooper, 1998: 220). 'A person with high trust assumes that most people are fair, honest and have good intentions. Persons low in trust see others as selfish, devious and potentially dangerous' (IPIP-NEO Narrative Report, described in Johnson, 2005). In Costa and McCrae's NEO framework, propensity to trust (which they label simply 'trust') is a facet of agreeableness:

High scorers [on propensity to trust] have a disposition to believe that others are honest and well-intentioned. Low scorers on this scale tend to be cynical and skeptical and to assume that others may be dishonest or dangerous. (1992: 17)

Our trait propensity to trust is consistent with Mayer et al.'s proposed propensity to trust 'a stable within-party factor . . . Propensity might be thought of as the *general willingness to trust others* . . . People with different developmental experiences, personality types and cultural backgrounds vary in their propensity to trust' (1995: 715). 'The assumption that people are basically honest has a number of important implications for the ability to function in complex social systems' (Couch et al., 1996). Propensity to trust is related to adjustment, the development of and satisfaction in intimate relationships (Jones et al., 1997; Rempel et al., 1985). Propensity to trust has been related to a variety of broader social activities and outcomes beyond interpersonal relationships including, for example, greater preference for 'collectively desirable' commuting options such as public transportation and car-pooling (van Lange et al., 1998).

## Proposed Model

Figure 1 presents our general model relating the high-level personality domain agreeableness to workplace knowledge sharing via a hierarchy of individual differences, including trait and state trust (propensity to trust and interpersonal trust). Note that propensity to trust is not 'caused by' agreeableness; it is not a consequence of agreeableness. Propensity to trust is a *facet or component of* agreeableness. It is *part of the broader domain of* agreeableness and would not be included in a single causal model (that is, trust is not a consequence of agreeableness, neither does it mediate the effects of agreeableness on attitudes and behaviors). Such hierarchical understandings have a long history in personality psychology (Allport, 1937; McAdams, 1996; McCrae and Costa, 2003) and have been adapted to applied domains as well (e.g. marketing; Mowen, 2000).

## Study

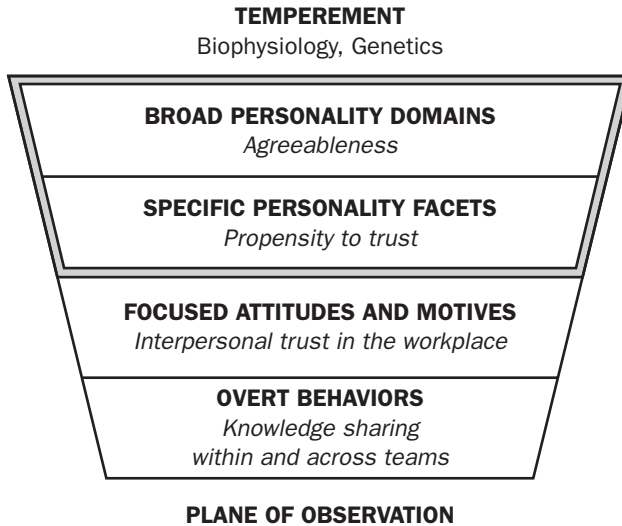
### *Format and Sample*

A standardized, self-administered questionnaire and cover letter (explaining the study and assuring confidentiality) were sent to 100 employees of an enterprise resource planning (ERP) software and consulting firm. All the employees selected for this study were members of project teams responsible for software implementation with customers. Sixty-four completed and usable questionnaires were returned.

### *Measures*

Agreeableness was measured with the 12-item scale from the German NEO Five-factor Inventory (NEO-FFI; Borkenau and Ostendorf, 1993; Costa and McCrae, 1992), which includes two items from the NEO Personality Inventory-Revised's



**Figure 1** General hierarchical model of personality, interpersonal trust and knowledge sharing

(NEO-PI-R) trust (i.e. propensity to trust) facet subscale. The longer 240-item NEO-PI-R is comprised of 30 eight-item subscales, one for each of the six facets within each of the five domains. In the 60-item NEO-FFI (used here) each of the 12-item domain scales generally includes two items from each of the six facets that make up that domain. We calculated propensity to trust using those two items from the NEO-FFI agreeableness scale which are from the subscale for the facet propensity to trust. Trust in management and trust in peers (i.e. state trusts) were measured using Cook and Wall's (1980) Interpersonal Trust at Work Scale (comprising three items for trust in management and three items for trust in peers). The agreeableness, trait trust, trust in peers and trust in management items were presented with five-point Likert-type scales from 'strong disapproval' (1) to 'strong approval' (5).

Knowledge sharing within and across teams were measured using Cumming's (2004) Intragroup Sharing and External Sharing Scales, which gauge five types of knowledge sharing:

- (1) general overviews (e.g. the projects in general, responsibilities within the team);
- (2) specific requirements and data;
- (3) techniques (e.g. project management, know-how, training, process, tools);
- (4) progress and reports (e.g. updates on project, budget, employees, etc.); and
- (5) project results (e.g. preliminary and final reports, etc.

(Cummings, 2004; Hansen, 1999; Szulanski, 1996; see Zander and Kogut, 1995) on five-point scales, from 'never' (1) to 'a lot' (5).

## Analysis and Results

Partial Least Squares (PLS), which is well-suited to analyses in which the cases-to-variables or cases-to-paths ratios are relatively low (Fornell and Bookstein, 1982; Hulland, 1999), were used to test the hypothesized relationships using the SmartPLS software (Hansmann and Ringle, 2004). Our sample of 64 cases meets PLS's sample size thresholds (Wixom and Watson, 2001). Following Hulland's (1999) recommended procedure, we tested our model in two stages. In the first stage, the reliability and validity of each measure was assessed. In the second stage, the model itself was tested by estimating the paths between the constructs and determining their significance, as well as estimating the predictive power of the model.

### *Reliability and Validity*

In the first step, the individual item reliabilities of all 12 items of the agreeableness subscale of German NEO-FFI were included. Five items had a loading lower than .4; internal consistency, which is superior to Cronbach's Alpha since it uses the item loadings obtained within the nomological network (Fornell and Larcker, 1981) was .64 and average variance extracted (AVE) was .20, indicating that the reliability and validity of that original scale were unacceptable. These findings are consistent with reports by other researchers regarding the psychometrics of the German version of the NEO-FFI (Renner, 2002). We then excluded all of the items with loadings lower than .4 and recalculated reliabilities. The scale comprising the seven remaining items had an internal consistency of .76 and an AVE of .31. Although the purified, seven-item marker of agreeableness still fell short of the acceptable criterion of reliability (Fornell and Larcker, 1981), we retained this measure for testing our model 1 (see Table 1 and Figure 2). For the two-item marker of propensity to trust, internal consistency was .72 and AVE was .56. The item reliabilities of the endogenous variables are shown in the figures and in Table 2, which also includes the wordings of the items of the final model. Item reliabilities are high; only one of the 18 items has a loading lower than .7 (item 4 of 'knowledge sharing within team', loading = .69).

Discriminant validity was assessed via comparisons of the square roots of the AVE values with the correlations between the latent constructs (Table 1). Fornell and Larcker (1981) assert that average variance shared between a construct and its measures (square root of the AVE) should be greater than the variance shared between the constructs and other constructs in the model (i.e. the diagonal square root AVE should be greater than the off-diagonal elements in the corresponding rows and columns). All of the measures for the various constructs show strong discriminant validity.

### *Path Coefficients and Predictive Ability*

We tested two versions of our model. In the first model we related agreeableness, the broad and high-level personality domain, to interpersonal trust and knowledge sharing using the purified, seven-item measure derived from the original 12-item NEO-FFI scale. In the second model we included the psychometrically stronger

**Table 1** Latent variable correlation matrix, internal consistency, and average variance extracted (AVE)

<i>Model 1</i>									
	Agreeableness	Interpersonal trust in peers	Interpersonal trust in management	Knowledge sharing within teams	Knowledge sharing across teams	Internal consistency	Average variance extracted		
Agreeableness	<b>.56</b>					.76	.31		
Interpersonal trust in peers	.52	<b>.77</b>				.81	.59		
Interpersonal trust in management	.43	.47	<b>.82</b>			.85	.66		
Knowledge sharing within teams	.21	.50	.14	<b>.77</b>		.88	.60		
Knowledge sharing across teams	.15	.36	.22	.58	<b>.85</b>	.93	.73		
<i>Model 2</i>									
	Propensity to trust (trait trust)	Interpersonal trust in peers	Interpersonal trust in management	Knowledge sharing within teams	Knowledge sharing across teams	Internal consistency	Average variance extracted		
Propensity to trust (trait trust)	<b>.75*</b>					.72	.56		
Interpersonal trust in peers	.62	<b>.77</b>				.81	.59		
Interpersonal trust in management	.39	.46	<b>.82</b>			.85	.66		
Knowledge sharing within teams	.32	.50	.13	<b>.77</b>		.88	.60		
Knowledge sharing across teams	.33	.36	.22	.58	<b>.85</b>	.93	.73		

\*Square root of AVE on the diagonals in bold.

**Table 2** Scale properties

Constructs and items	Mean	SD	Loading
<i>Trust in peers<sup>a</sup></i>			
1. If I got into difficulties at work I know my colleagues would try and help me out	3.91	.94	.81
2. I can trust the people I work with to lend me a hand if I needed it	4.14	.89	.69
3. Most of my colleagues can be relied upon to do as they say they will do	4.20	.80	.81
<i>Trust in management<sup>b</sup></i>			
1. Management at my firm is sincere in its attempts to meet the employees' point of view	3.62	1.15	.91
2. I feel quite confident that the firm will always try to treat me fairly	3.61	.99	.74
3. Our management would be quite prepared to gain advantage by deceiving the employees (reverse coded)	4.06	.85	.79
<i>Knowledge sharing within team<sup>c</sup></i>			
On average, how often did you share each type of knowledge during the project with group members:			
1. General overviews (e.g. the projects in general, responsibilities within the team)	3.92	.88	.79
2. Specific requirements and data	3.31	1.10	.77
3. Techniques (e.g. project management, know-how, training, process, tools)	3.51	1.02	.84
4. Progress and reports (e.g. updates on project, budget, employees, etc.)	3.54	1.01	.69
5. Project results (e.g. preliminary and final reports, etc.)	3.28	1.09	.76
<i>Knowledge sharing across teams<sup>d</sup></i>			
On average, how often did you share each type of knowledge during the project with non-group members:			
1. General overviews (e.g. the projects in general, responsibilities within the team)	2.72	.95	.78
2. Specific requirements and data	2.30	.94	.84
3. Techniques (e.g. project management, know-how, training, process, tools)	2.66	1.06	.87
4. Progress and reports (e.g. updates on project, budget, employees, etc.)	2.56	1.01	.87
5. Project results (e.g. preliminary and final reports, etc.)	2.38	1.02	.88
<i>Propensity to trust<sup>e</sup></i>			
1. I tend to be cynical and sceptical of others' intentions (reverse coded)	3.86	1.01	.78
2. I believe that most people will take advantage of you if you let them (reverse coded)	3.92	1.06	.72

<sup>a</sup> Cook and Wall (1980); internal consistency = .81; AVE = .59<sup>b</sup> Cook and Wall (1980); internal consistency = .86; AVE = .67<sup>c</sup> Cummings (2004); internal consistency = .88; AVE = .60<sup>d</sup> Cummings (2004); internal consistency = .93; AVE = .73<sup>e</sup> Borkenau and Ostendorf (1993); Costa and McCrae (1992); internal consistency = .82; AVE = .56

two-item measure of propensity to trust. Figures 2 and 3 present the detailed models with the path coefficients, their significance levels and the  $R^2$  values for the endogenous variables for the two models. For each model, 500 bootstrapping runs were performed to compute the standard errors and thereby evaluate the significance of the structural coefficients. Overall, path coefficients and explained variance of the endogenous variables do not change greatly across the two models; both show the same causal relationships between the constructs. Nevertheless the first model, which includes agreeableness, must be interpreted mindfully of the low reliability of that exogenous variable.

## Discussion

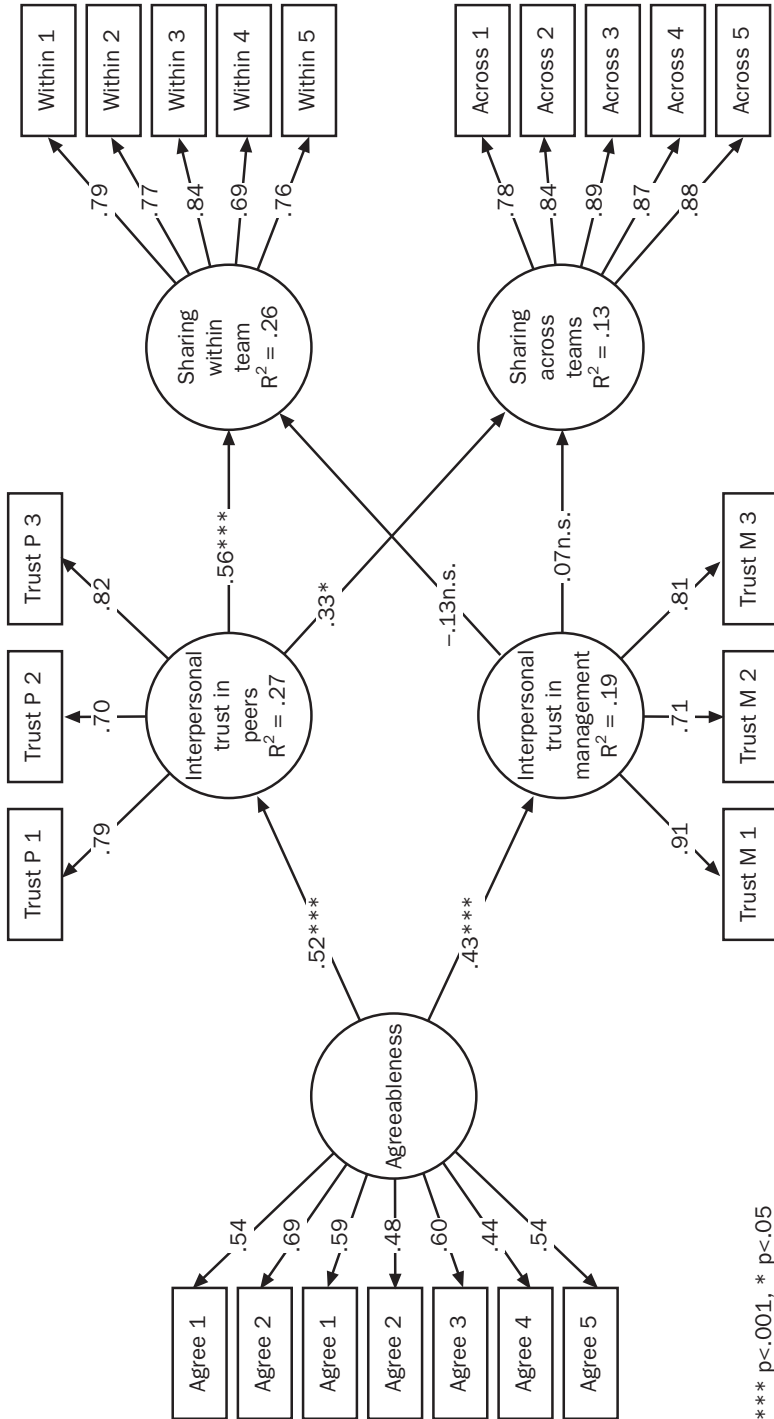
As noted by Kramer (1999), organizational theorists have neither shown much interest in individual differences in propensity to trust nor in the influences of enduring individual differences on workplace trust. In their seminal conceptual framework, Mayer et al. (1995: 716) propose that the 'higher the trustor's propensity to trust, the higher the trust for a trustee prior to availability of information about the trustee', arguing that 'an understanding of trust necessitates consideration of the trust propensity of the trustor'. Nevertheless, empirics related to that proposition have been limited and inadequate. Those specific efforts have not situated propensity to trust within contemporary hierarchical understandings of personality, neither have those efforts extended the causal chain beyond interpersonal trust to observable, overt behavioral *outcomes* of interpersonal trust (such as knowledge sharing). The Five-factor Model has been linked to the 'latitude and longitude' of individual differences:

Personality psychologists who continue to employ their preferred measure without locating it within the five-factor model can only be likened to geographers who issue reports of new lands but refuse to locate them on a map for others to find. (Ozer and Reise, 1994: 361; see also Funder, 2001; Goldberg, 1993)

We have addressed those issues, linking the personality domain agreeableness and the facet propensity to trust to interpersonal trust, 'downstream' in a causal chain to reports of knowledge sharing behaviors.

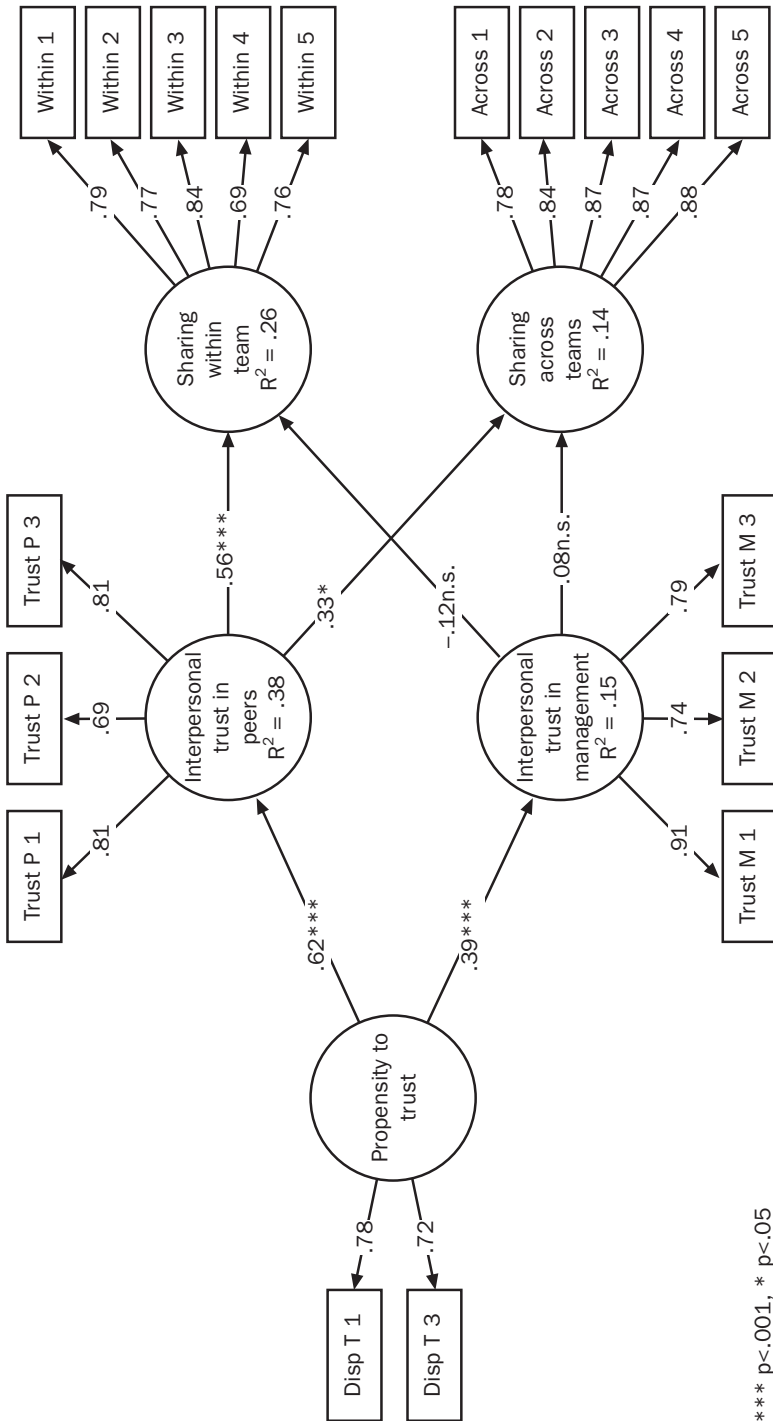
An important implication for practice is that firms may be able to identify potential boundary spanners – and conversely to identify those who may have inhibitions about trusting, and thereby knowledge sharing – using personnel testing and the current findings. Personnel selection and retention are among the central and most influential functions of management, and firms routinely request or require employees to submit self-reports regarding personality and personality-like traits (e.g. Barrick et al., 2001; Hough and Ones, 2001); thus the theory and empirics reported in this article will assist human resource managers in identifying potential boundary spanners – an invaluable segment of employees who connect work groups and offer opportunities for knowledge sharing through coordination, transparency and negotiability (Wenger, 2000: 234). Similarly, it will help them to identify others who may be predisposed away from knowledge sharing and therefore may benefit from specific attention and special coaching. Knowledge

**Figure 2** Model One (Agreeableness, Interpersonal Trust, and Knowledge Sharing)



\*\*\*  $p < .001$ , \*  $p < .05$

**Figure 3** Model Two (Propensity to Trust, Interpersonal Trust, and Knowledge Sharing)



\*\*\*  $p < .001$ , \*  $p < .05$

brokering and networking are crucial for knowledge sharing and creating innovations (Swan et al., 2002).

One limitation of these findings is the relatively small sample size. The application of PLS for the analyses addresses the statistical challenges and constraint of the sample size but issues of generalizability remain. Future research should enrich understandings of these relationships by replicating them in large and diverse samples. Another, less severe limitation is our reliance on the two-item measure of propensity to trust. Future research may test these relationships profitably with different and perhaps lengthier measures of propensity to trust. Nevertheless, recent research has supported the validity and efficacy of brief trait measures (e.g. Gosling et al., 2003) and the psychometric properties of our two-item measure are, in these data, excellent.

## Note

1. For a review and synthesis of the myriad definitions and operationalizations of 'trust' in the literature, see Bigley and Pearce (1998).

## References

- Abrams, L. C., Cross, R., Lesser, E. and Levin, D. Z. (2003) 'Nurturing Interpersonal Trust in Knowledge-Sharing Networks', *Academy of Management Executive* 17(4): 64–77.
- Allport, G. W. (1937) *Personality: A Psychological Interpretation*. New York: Holt.
- Ardichvili, A., Page, V. and Wentling, T. (2003) 'Motivation and Barriers to Participation in Virtual Knowledge-sharing Communities of Practice', *Journal of Knowledge Management* 7(1): 64–77.
- Argote, L. (1999) *Organizational Learning: Creating, Retaining and Transferring Knowledge*. Boston, MA: Kluwer Academic Publishers.
- Argote, L., Ingram, P., Levine, J. M. and Moreland, R. L. (2000) 'Knowledge Transfer in Organizations', *Organisational Behavior and Human Decision Processes* 82(1): 1–8.
- Argote, L., Gruenfeld, D. and Naquin, C. (2001) 'Group Learning in Organizations', in M.E. Turner (ed.) *Groups at Work: Theory and Research*, pp. 369–411. Mahwah, NJ: Erlbaum.
- Asendorpf, J. B. and Wilpers, S. (1998) 'Personality Effects on Social Relationships', *Journal of Personality and Social Psychology* 74: 1531–44.
- Barrick, M. R., Mount, M. K. and Judge, T. A. (2001) 'Personality and Job Performance at the Beginning of the New Millennium: What Do We Know and Where Do We Go Next?', *International Journal of Selection and Assessment* 9: 9–30.
- Bigley, G. A. and Pearce, J. L. (1998) 'Straining for Shared Meaning in Organization Science: Problems of Trust and Distrust', *Academy of Management Review* 23: 405–21.
- Blackler, F. (1995) 'Knowledge, Knowledge Work and Organizations—An Overview and Interpretation', *Organization Studies* 16(6): 1021–46.
- Bock, G.-W., Zmud, R. W., Kim, Y.-G. and Lee, J.-N. (2005) 'Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social-psychological Forces and Organizational Climate', *MIS Quarterly* 29(1): 87–112.
- Borkenau, P. and Ostendorf, F. (1993) *NEO-Fünf-Faktoren Inventar (nach Costa und McCrae)* [NEO-Five-factor Inventory, after Costa and McCrae]. Göttingen: Hogrefe.



- Bouchard, T. J. and Loehlin, J. C. (2001) 'Genes, Evolution and Personality', *Behavior Genetics* 31: 243–73.
- Bowling, N. A., Beehr, T. A. and Swaderb, W. M. (2005) 'Giving and Receiving Social Support at Work: the Roles of Personality and Reciprocity', *Journal of Vocational Behaviour* 67(3): 476–89.
- Brown, J. S. and Duguid, P. (2002) 'Local Knowledge—Innovation in the Networked Age', *Management Learning* 33(4): 427–37.
- Brown, H. B., Poole, M. S. and Rogers, T. (2004) 'Interpersonal Traits, Complementarity and Trust in Virtual Collaboration', *Journal of Management Information Systems* 20: 115–38.
- Cabrera, Á. and Cabrera, E. F. (2002) 'Knowledge-sharing Dilemmas', *Organization Studies* 23(5): 687–710.
- Colbert, A. E., Mount, M. K., Harter, J. K., Witt, L. A. and Barrick, M. R. (2004) 'Interactive Effects of Personality and Perceptions of the Work Situation on Workplace Deviance', *Journal of Applied Psychology* 89: 599–609.
- Cook, J. and Wall, T. (1980) 'New Work Attitude Measures of Trust, Organizational Commitment and Personal Need Non-Fulfilment', *Journal of Occupational Psychology* 53: 39–52.
- Costa, T. J. and McCrae, R. R. (1992) *Revised NEO Personality Inventory and NEO Five-factor Inventory Professional Manual*. Odessa, FL: Psychological Assessment Resources.
- Couch, L. L., Adams, J. M. and Jones, W. H. (1996) 'The Assessment of Trust Orientation', *Journal of Personality Assessment* 67: 305–23.
- Cummings, J. N. (2004) 'Work Groups, Structural Diversity and Knowledge Sharing in a Global Organization', *Management Science* 50(3): 352–64.
- DeNeve, K. and Cooper, H. (1998) 'The Happy Personality: A Meta-analysis of 137 Personality Traits and Subjective Well-being', *Psychological Bulletin* 124(2): 197–229.
- Digman, J. T. (1990) 'Personality Structure: Emergence of the Five-factor Model', *Annual Review of Psychology* 41: 417–40.
- Dirks, K. T. and Ferrin, D. L. (2001) 'The Role of Trust in Organizational Settings', *Organization Science* 12: 450–67.
- Fornell, C. and Bookstein, F. (1982) 'Two Structural Equations Models: LISREL and PLS Applied to Consumer Exit-voice Theory', *Journal of Marketing Research* 18(November): 39–50.
- Fornell, C. and Larcker, D. F. (1981) 'Evaluating Structural Equation Models with Unobservable Variables and Measurement Error', *Journal of Marketing Research* 18(February): 39–50.
- Funder, D. (2001) 'Personality', *Annual Review of Psychology* 52: 197–221.
- Gefen, D. (2000) 'E-commerce: the Role of Familiarity and Trust', *Omega* 28: 725–37.
- Gherardi, S., Nicolini, D. and Odella, F. (1998) 'Toward a Social Understanding of How People Learn in Organizations', *Management Learning* 29(3): 273–97.
- Goldberg, L. R. (1993) 'The Structure of Phenotypic Personality Traits', *American Psychologist* 48: 26–34.
- Gosling, S. D., Rentfrow, P. J. and Sann, W. B. J. (2003) 'A Very Brief Measure of the Big-Five Personality Domains', *Journal of Research in Personality* 37: 504–28.
- Graziano, W. G. (1994) 'The Development of Agreeableness as a Dimension of Personality', in C.F. Halverson, Jr., G.A. Kohnstamm and R.P. Martin (eds) *The Developing Structure of Temperament and Personality from Infancy to Adulthood*, pp. 339–354. Hillsdale, NJ: Erlbaum.
- Graziano, W. G. and Eisenberg, N. H. (1997) 'Agreeableness: A Dimension of Personality', in R. Hogan, J. Johnson and S. Briggs (eds) *Handbook of Personality Psychology*, pp. 795–824. San Diego, CA: Academic Press.
- Graziano, W. G., Jensen-Campbell, L. A. and Hair, E. C. (1996) 'Perceiving Interpersonal Conflict and Reacting to it: The Case for Agreeableness', *Journal of Personality and Social Psychology* 70: 820–35.

- Hansen, M. T. (1999) 'The Search-Transfer Problem—The Role of Weak Ties in Sharing Knowledge across Organization Subunits', *Administrative Science Quarterly* 44(March): 82–111.
- Hansen, M. T. (2002) 'Knowledge Networks—Explaining Effective Knowledge Sharing in Multiunit Companies', *Organization Science* 13(3): 232–48.
- Hansmann, K.-W. and Ringle, C. M. (2004) *SmartPLS Manual*. Hamburg: University of Hamburg.
- Heaven, C. L. (1996) 'Personality and Self-reported Delinquency: Analysis of the "Big Five" Personality Dimensions', *Personality and Individual Differences* 20: 47–54.
- Hough, L. M. and Ones, D. S. (2001) 'The Structure, Measurement, Validity and Use of Personality Variables in Industrial, Work and Organizational Psychology', in N. Anderson, D.S. Ones, H. Sinangil and C. Viswesvaran (eds) *Handbook of Industrial, Work and Organizational Psychology*, pp. 233–77. London: Sage.
- Hulland, J. (1999) 'Use of Partial Least Squares (PLS) in Strategic Management Research: A Review of Four Recent Studies', *Strategic Management Journal* 20(2): 195–204.
- Hurley, R. F. (1998) 'Customer Service Behavior in Retail Settings: A Study of the Effect of Service Provider Personality', *Journal of the Academy of Marketing Science* 26: 115–27.
- Hurtz, G. M. and Donovan, J. J. (2000) 'Personality and Job Performance: The Big Five Revisited', *Journal of Applied Psychology* 85: 869–79.
- Jarvenpaa, S. L., Knoll, K. and Leidner, D. E. (1998) 'Is Anybody Out There? Antecedents of Trust and Global Virtual Teams', *Journal of Management Information Systems* 14(4): 29–64.
- Jensen-Campbell, L. A., Roselli, M., Workman, K. A., Santisi, M., Rios, J. D. and Bojan, D. (2002) 'Agreeableness, Conscientiousness and Effortful Control Processes', *Journal of Research in Personality* 36: 476–89.
- John, O. P. and Srivastava, S. (1999) 'The Big Five Trait Taxonomy: History, Measurement and Theoretical Perspectives', in L.A. Pervin and O.P. John (eds) *Handbook of Personality*, pp. 102–38. New York: Guilford Press.
- Johnson, J. A. (2005) 'Ascertaining the Validity of Individual Protocols from Web-based Personality Inventories', *Journal of Research in Personality* 39: 103–29.
- Johnson, J. A. and Ostendorf, F. (1993) 'Clarification of the Five-factor Model with the Abridged Big Five-dimensional Circumplex', *Journal of Personality and Social Psychology* 55: 824–35.
- Jones, W. H., Couch, L. and Scott, S. (1997) 'Trust and Betrayal: The Psychology of Getting Along and Getting Ahead', in R. Hogan, J. A. Johnson and S. R. Briggs (eds) *Handbook of Personality Psychology*, pp. 465–82. San Diego, CA: Academic Press.
- King, E. B., George, J. M. and Hebl, M. R. (2005) 'Linking Personality to Helping Behaviors at Work: An Interactional Perspective', *Journal of Personality* 73: 585–603.
- Kramer, R. M. (1999) 'Trust and Distrust: Emerging Questions, Enduring Questions', *Annual Review of Psychology* 50: 569–98.
- Laursen, B., Pulkkinen, L. and Adams, R. (2002) 'The Antecedents and Correlates of Agreeableness in Adulthood', *Developmental Psychology* 38: 591–603.
- Levin, D. Z. and Cross, R. (2004) 'The Strength of Weak Ties You Can Trust: The Mediating Role of Trust in Effective Knowledge Transfer', *Management Science* 50(11): 1477–90.
- Levin, D. Z., Whitener, E. M. and Cross, R. (2006) 'Perceived Trustworthiness of Knowledge Sources: The Moderating Impact of Relationship Length', *Journal of Applied Psychology* 91(5): 1163–71.
- McAdams, D. P. (1996) 'Personality, Modernity and the Storied Self: A Contemporary Framework for Studying Persons', *Psychological Inquiry* 7: 295–321.
- McCrae, R. R. (2004) 'Human Nature and Culture: A Trait Perspective', *Journal of Research in Personality* 38: 3–14.

- McCrae, R. R. and Costa, T. J. (2003) *Personality in Adulthood: a Five-factor Theory Perspective*. New York: Guilford.
- McEvily, B., Peronne, V. and Zaheer, A. (2003) 'Trust as an Organizing Principle', *Organization Science* 14: 91–103.
- MacDonald, A. P., Kessel, V. S. and Fuller, J. B. (1972) 'Self-disclosure and Two Kinds of Trust', *Psychological Reports* 30: 143–8.
- MacDonald, K. (1998) 'Evolution, Culture and the Five-factor Model', *Journal of Cross-Cultural Psychology* 29(1): 119–49.
- Mayer, R. C., Davis, J. H. and Schoorman, F. D. (1995) 'An Integrative Model of Organisational Trust', *Academy of Management Review* 20(3): 709–34.
- Miller, J. D. and Karakowsky, L. (2005) 'Gender Influences as an Impediment to Knowledge Sharing: When Men and Women Fail to Seek Peer Feedback', *Journal of Psychology: Interdisciplinary and Applied* 13: 39–55.
- Mount, M. K., Barrick, M. R. and Stewart, G. L. (1998) 'Five-factor Model of Personality and Performance in Jobs Involving Interpersonal Interactions', *Human Performance* 11: 145–65.
- Mowen, J. C. (2000) *The 3M Model of Motivation and Personality: Theory and Empirical Applications to Consumer Behavior*. New York: Kluwer Academic Publishers.
- Nonaka, I. and Takeuchi, H. (1995) *The Knowledge-Creating Company—How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford University Press.
- Ozer, D. J. and Reise, S. P. (1994) 'Personality Assessment', *Annual Review of Psychology* 45: 357–88.
- Paunonen, S. V., Haddock, G., Forsterling, F. and Keinonen, M. (2003) 'Broad versus Narrow Personality Measures and the Prediction of Behaviour across Cultures', *European Journal of Personality* 17: 413–33.
- Payne, R. L. and Clark, M. C. (2003) 'Dispositional and Situational Determinants of Trust in Two Types of Managers', *International Journal of Human Resource Management* 14(1): 128–38.
- Rempel, J. K., Holmes, J. G. and Zanna, M. P. (1985) 'Trust in Close Relationships', *Journal of Personality and Social Psychology* 49: 95–112.
- Renner, W. (2002) 'A Psychometric Analysis of the NEO Five-factor Inventory in an Austrian Sample', *Review of Psychology* 9(1–2): 25–31.
- Ridings, C., Gefen, D. and Arinze, B. (2002) 'Some Antecedents and Effects of Trust in Virtual Communities', *Journal of Strategic Information Systems* 11(3–4): 271–95.
- Rotter, J. (1967) 'A New Scale for the Measurement of Interpersonal Trust', *Journal of Personality* 35: 651–65.
- Saucier, G. and Ostendorf, F. (1999) 'Hierarchical Subcomponents of the Big Five Personality Factors', *Journal of Personality and Social Psychology* 76: 613–27.
- Smith, T. W. and Glazer, K. (2004) 'Hostility, Anger, Aggressiveness and Coronary Heart Disease: An Interpersonal Perspective on Personality, Emotion and Health', *Journal of Personality* 72(6): 1217–70.
- Spender, J.-C. (1996) 'Making Knowledge the Basis of a Dynamic Theory of the Firm', *Strategic Management Journal* 17(winter special issue): 45–62.
- Swan, J., Scarbrough, H. and Robertson, M. (2002) 'The Construction of "Communities of Practice" in the Management of Innovation', *Management Learning* 33(4): 477–96.
- Szulanski, G. (1996) 'Exploring Internal Stickiness: Impediments to the Transfer of Best Practice within the Firm', *Strategic Management Journal* 17(winter): 27–43.
- Tsai, W. (2002) 'Social Structure of "Coopetition" within a Multiunit Organization: Coordination, competition and Intraorganizational Knowledge Sharing', *Organization Science* 13(2): 179–90.

- van Lange, P. A., van Vugt, M., Meertens, R. and Ruiters, R. A. (1998) 'A Social Dilemma Analysis of Commuting Preferences: The Role of Social Value Orientation and Trust', *Journal of Applied Social Psychology* 28: 796–820.
- von Krogh, G., Ichijo, K. and Nonaka, I. (2000) *Enabling Knowledge Creation—How to Unlock the Mystery of Tacit Knowledge and Release the Power of Innovation*. New York: Oxford University Press.
- Waller, N. G. (1999) 'Evaluating the Structure of Personality', in C. R. Cloninger (ed.) *Personality and Psychopathology*, pp. 155–97. Washington, DC: American Psychiatric Association.
- Wasko, M. M. and Faraj, S. (2005) 'Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice', *MIS Quarterly* 29(1): 35–57.
- Wenger, E. C. (2000) 'Communities of Practice and Social Learning Systems', *Organization* 7(2): 225–46.
- Wiggins, J. (1979) 'A Psychological Taxonomy of Trait-descriptive Terms: The Interpersonal Domain', *Journal of Personality and Social Psychology* 37: 395–412.
- Wixom, B. H. and Watson, H. J. (2001) 'An Empirical Investigation of the Factors Affecting Data Warehousing Success', *MIS Quarterly* 25(1): 17–41.
- Zander, U. and Kogut, B. (1995) 'Knowledge and the Speed of the Transfer and Imitation of Organizational Capabilities: An Empirical Test', *Organization Science* 6(1): 76–92.

## Contact Addresses

**Todd Mooradian** is in the School of Business, College of William and Mary, Williamsburg, VA 23187-8795, USA. [email: todd.mooradian@business.wm.edu]

**Birgit Renzl** is in the Department of Management, University of Innsbruck, Universitaetsstrasse 15, 6020 Innsbruck, Austria. [email: birgit.renzl@uibk.ac.at]

**Kurt Matzler** is in the Department of International Management, Johannes Kepler University, Altenbergerstrasse 69, 4040 Linz, Austria. [email: kurt.matzler@jku.at]

Please address correspondence to Todd Mooradian.