

## Exploring Perceptions of 'Foreignness' in Virtual Teams: Its Impact on Team Member Satisfaction and Turnover Intention\*

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This paper uses the status inconsistency theory to identify factors related to team members' (dis)satisfaction with the composition of virtual IT project teams in order to predict their turnover intentions. Our approach is based on the premise that virtual teams, although increasingly popular among global organizations, create an environment replete with cultural and functional diversity. Yet, a paradox exists: increasing diversity in virtual teams maximizes the creation and use of organizational knowledge while simultaneously increasing dissatisfaction and turnover. This is a critical issue in the formation and management of virtual teams. Therefore, we investigate how team members' perceptions of differences among themselves (i.e. foreignness) impact the stability of team membership, leading to what we describe as a 'liability of foreignness.' Findings indicate that a member's perception of foreignness has a detrimental effect on satisfaction with his or her team members while satisfaction is likely to decrease turnover intention. This may be an implication that managers need to maintain a balance in order to discourage member turnover and the loss of key players.

**Keywords :** Virtual Team, Foreignness, Status Inconsistency, Stereotyping, Self-Efficacy, Satisfaction, Turnover Intention

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## I . Introduction

In a turbulent and hypercompetitive global market, organizations seeking to gain a competitive advantage must effectively mobilize their knowledge resources [Joshi, Sarker, and Sarker, 2007]. Such organizations are challenged to integrate both information technologies and new organizational structures to cope with such changes as expanding market boundaries, shortening of product life cycles, and increasing global competition [Varadarajan and Jayachandran, 1999]. Among the many strategic avenues presented, virtual teams are often adopted in order to achieve and sustain competitive advantage by leveraging knowledge assets, adapting to competitive forces, bolstering creativity, and moving products to market more efficiently [McDonough *et al.*, 2000; Powell *et al.*, 2004]. This is evidenced by a Hewlett-Packard (HP) executive who claims HP's survival and success is very dependent on utilizing project teams comprised of distributed members from all of their regions [Connaughton and Shuffler, 2007]. Additionally, Boeing deploys a distributed multinational team to develop new hardware for the International Space Station [Covault, 2006]. However, those attempts to capitalize on such benefits from distributed collaboration have garnered mixed results [Jackson *et al.*, 1991] while employee turnover is a major concern since losing team members can disrupt progress and impede project success [Zeynep and Huckman, 2008].

Identifying antecedents of satisfaction with the composition of a virtual team and predicting turnover intentions by team members is an area of intense interest not only because con-

trolling employee turnover is a critical function of human resource management [Chiu *et al.*, 2005] but also because the use of the virtual team structure is growing rapidly. The characteristic of the virtual team context is the idea of 'foreignness'-a concept that involves assessing member differences and making evaluative judgments that result in adapting or coping behaviors. In contrast to collocated teams, the geographic dispersion of virtual team members complicates these assimilation processes as they do not experience direct face-to-face communication and contact with other organizational and team members. We use the construct of foreignness, adapted from the managerial literature, to investigate whether virtual team members are more/less satisfied with team member heterogeneity and whether this influences the turnover.

Employee satisfaction and turnover intention have been studied extensively in the management literature with respect to collocated teams. Prior research suggests that demographic variables such as age and tenure negatively affect turnover intention, while education has a positive impact on turnover intention [Giuliano *et al.*, 2006]. Similarly, role stressors tend to positively influence turnover, whereas organizational commitment and job satisfaction have a strong negative effect on turnover intention [Ongori, 2007]. Our study contributes to this stream of research by identifying and testing the 'foreignness' construct and its antecedents, 'stereotyping' and 'self-efficacy,' within the context of virtual teams and turnover. We expect that virtual teams' perceptions of being different (or foreign) from other team members create stress that negatively affects other team

members' level of contentment and leads to an increased desire to leave the team. As a result, the virtual team may experience a disruption in progress and performance that can be considered a 'liability of foreignness'-the costs associated with utilizing virtual teams. As organizations employ the virtual framework, it is critical for them to identify attributes of successful teams to understand why some teams are highly productive and others less fruitful.

This paper is an attempt to answer the critical research question: Do members' perceptions of foreignness among themselves influence their level of satisfaction and compromise their length of time spent on the team? This study uses status inconsistency theory to establish the negative effects of foreignness in both homogenous teams (i.e., domestic virtual teams) and heterogeneous teams (i.e., global virtual teams) to extend the generalizability of our findings. We discuss the implications of the results for the composition of both domestic and global virtual teams and the management of employee turnover.

The paper proceeds as follows. In the next section, we present a brief overview of virtual teams. Then, we discuss the concept of foreignness and how it can become an organizational liability. Next, we draw from status inconsistency theory to help explain how individual differences can lead to feelings of foreignness. Then, we describe the key constructs and the relationships in our research model and theorize five hypotheses related to our research questions. Next, we test our hypotheses using empirical data collected from two separate studies. Finally, we present our results, a discussion of our findings, and their implications

for IS research and practice.

## II. Literature Review

### 2.1 Virtual Teams

Virtual teams are defined as geographically dispersed knowledge workers that collaborate on organizational tasks using a variety of communication channels [Wakefield, Leidner, and Garrison, 2008]. Virtual teams may be organizationally dispersed and/or time distributed [Javenpaa *et al.*, 1999], prompting unique challenges for individuals involved in the collaborative effort [Powell *et al.*, 2004]. These challenges are often due to diminished face-to-face interactions and include the effectiveness of team leadership, the development of trust, effective communication, and team cohesion [Kayworth and Leidner, 2001; Robey *et al.*, 2000; Warkentin *et al.*, 1997]. Further, distributed team members have less opportunities for meaningful interactions, possibly inhibiting knowledge sharing and positive outcomes [Staples and Webster, 2008].

Despite the challenges faced by dispersed team members, organizations continue to embrace the concept. New product development initiatives are often undertaken using virtual teams whose members work closely together via communication technologies in the conception, design, development, and launch of new ideas and/or products [Badrinarayanan and Arnett, 2008]. The implementation of virtual teams are proving vital, not only in the complex new product development process [Akgun and Lynn, 2002], but also in the creation of a global mindset for long-run com-

petitive advantage. The virtual team structure supports the efficacy of the resource-based view of the firm which promotes leveraging organizational resources (e.g. human capital, knowledge assets) to provide sustained competitive advantage [Barney, 1991], namely that virtual teams' dispersed organizational knowledge is more accessible, thereby providing firms with a greater pool of competencies and knowledge resources compared to those of collocated teams [Snow *et al.*, 1996]. For this reason, employing dispersed teams to sustain strategic positions appears beneficial in the short run; however, maintaining a diverse workforce is not without costs.

## 2.2 The Concept of Foreignness and the Liability of Foreignness

Borrowed from the psychology literature, 'foreignness' refers to the degree to which a team member perceives dissimilarity between herself and other team members [Jackson *et al.*, 1991]. A perception of foreignness, therefore, is a subjective measure of differences involving common attributes (e.g., ability, age, beliefs, culture, education, ethnicity, intelligence, physical characteristics) among team members. The relevance of 'foreignness' to virtual team research becomes clear with the understanding that optimizing virtual team creativity and performance may entail limiting the duplication of member attributes in order to leverage unique knowledge. Hence, virtual team members are generally more diverse and dissimilar compared to collocated team members [Garrison *et al.*, 2009]. However, team heterogeneity can offset the benefits of diversity via increased co-

ordination difficulties and communication barriers [Kayworth and Leidner, 2000] that negatively impact team cohesion [Warkentin *et al.*, 1997] and team performance. Whereas global heterogeneity that includes cultural and language differences is noted as an antecedent of poor team performance [Kayworth and Leidner, 2001], Robey *et al.* [2000] report the negative impact on performance of more subtle differences (e.g., linguistics, conventions, mannerisms, etc.) among members of domestically dispersed teams.

In the management literature, the term 'liability of foreignness' describes the disadvantages or costs incurred by multinational organizations doing business in unfamiliar or foreign environments. These costs may include trade-related costs (e.g., increased taxes, tariffs) imposed on multinationals and their products as well as other tangible and intangible costs arising from the demands of local politicians, consumers, and/or the foreign labor force [Insch and Miller, 2005]. In either case, operating in an unfamiliar environment is accompanied by additional costs related to distinct differences in culture, government and/or political forces, among others. These costs may directly affect the success of the multinational as liabilities that are often unknown and unanticipated.

Similarly, joining members with diverse attributes into a single work group is akin to placing them in unfamiliar territory with unspecified costs of assimilation. Whereas the tangible costs of creating communication channels to support the team are quantifiable and anticipated, the intangible costs of team members' adjustments to the heterogeneity of a group represents a distinct liability. For exam-

ple, adjusting to and/or accommodating differences in language, gender, time zones, work habits and attitudes may diminish the cognitive resources that would otherwise be focused on team goals. Thus, optimal team performance may be limited by the extent of member heterogeneity. We define this as the 'liability of foreignness,' or the unexpected costs of combining diverse individuals into a single team, where, paradoxically, synergy is the expected outcome.

In view of this dynamic and the increased use of global virtual teams, the implications for the composition and management of virtual teams are substantial. As firms become more global and deploy teams of increasingly diverse members, the consequences of foreignness related to varied beliefs, preferences, expectations and behaviors are important to team success. Organizations must recognize foreignness as a potentially negative antecedent of job satisfaction in order to retain the most coveted employees and reap the benefits of virtual collaboration. The increased use of virtual teams has been fueled by a heightened demand for a globally diverse workforce [Townsend *et al.*, 1998]. However, the success of a virtual workforce rests on understanding the challenges and effectively managing team composition in order to control the costs and predict team outcomes.

### 2.3 Status Inconsistency Theory

Status inconsistency theory is the theoretical lens through which we establish the concept of foreignness and propose its effect on virtual team members. Status inconsistency theory po-

sits that individuals recognize differences in traits between themselves and others (i.e., team members). The theory is based on what McGrath [McGrath, 1976] calls a *status trait* or an individual's measurable attributes. Status traits are observable, quantifiable characteristics often evaluated on the basis of honor, esteem, or desirability [Homans, 1974]. Importantly, individual traits are subjectively evaluated [Randel, 2000]; that is the 'rater' both identifies and defines the relevant traits to be appraised. In other words, each individual forms judgments and conclusions about other's status traits based on his own evaluative criteria [Rayner and Cooper, 1997].

The concept of status inconsistency asserts that individuals recognize incongruence among status traits, which enhances feelings of inconsistency or foreignness with others in a group. Early research on status inconsistency shows that in a given social environment, individual demographic and/or physiological characteristics (i.e., age, gender, and education) may be interpreted in terms of status or status rankings [Jackson, 1962]. Beliefs or feelings of incongruence arise when one perceives that her individual status differs from her perceptions of group status. Furthermore, differences between a person's relative status rankings on different social hierarchies may also create a 'status inconsistency' [Bacharach *et al.*, 1993] that influences individual and group attitudes and behavior. Based on Malewski's [1963] research, status inconsistency can occur in any given social context when an individual believes he differs significantly from his or her peers on key status traits, thereby raising the level of stress and heightening the potential for

disengaging behavior.

Status inconsistency theory directly applies to diverse work groups because individuals tend to use physical features (e.g., race, nationality, gender etc.) to categorize or evaluate others and predict their behavior [Chatman and Flynn, 2001]. According to Stroessner [1996], categorization is more likely to occur in demographically heterogeneous groups than in homogeneous groups; and, when demographic traits are salient, individuals focus more on observed differences than on similarities [Chatman and Flynn, 2001]. Additionally, Chatman *et al.* [1998] reported demographic heterogeneity as a negatively related antecedent to team members' attention to organizational objectives, which suggests a diversion of cognitive energy from team purposes. Tsui *et al.* [1992] show that heterogeneous groups experience more turnover, alienation, and dissatisfaction with team members than homogeneous groups do. Thus, in collocated groups, demographic differences may provoke attitudes and behaviors that negatively influence group work processes and outcomes.

Prior research highlights some behaviors and attitudes prompted by status inconsistency beliefs. A perceived lack of similarity with others generates higher levels of stress, which may enhance the members to engage in activities aimed at reducing the tension level or coping behaviors [Bacharach *et al.*, 1993]. For instance, when a second language creates status tension among members of a virtual team, individuals may choose to remove that obstacle by learning the language in question. Likewise, the members of a virtual team may take actions to achieve a desired level of consistency and meet

the expectations of peers. However, if the issue in question is an immutable trait, such as gender, physical characteristics, race, or even religion, resolving the discrepancy is problematic. In this instance, the team member may be quite unable to facilitate status consistency, prompting counterproductive behaviors in order to reduce the stress level.

Additionally, greater differences between a former work setting and a current work environment may increase the difficulty of adjusting to an altered status in the new setting [McGrath, 1976]. Greater uncertainty and frustration increase one's level of stress, and increased perceptions of inconsistency with team members may result in role stress manifested as role conflict, role ambiguity, role overload, or role under-load that induces work-related stress reactions and behaviors [Schaubroeck *et al.*, 1989]. These detrimental reactions and behaviors may include dissatisfaction, withdrawal, decreased productivity, and disassociation.

Because virtual teams are formed to leverage the knowledge and abilities of geographically dispersed individuals, status inconsistency is likely an inherent attribute of the structure. Furthermore, if teams are primarily formed as temporary work groups to collaborate on a given project [Jarvenpaa and Leidner, 1999], the process of identifying, assessing and evaluating individual traits may be a recurrent practice by members who regularly work in teams. Social cognition theorists show that individual evaluations take place even when group member information is limited [Levy *et al.*, 1998], which is often the case in dispersed work settings. Thus, it is likely that status evalua-

tions and inconsistency judgments occur regularly in virtual work groups despite the lack of explicit knowledge of one's team members.

### III. Research Model and Hypotheses

#### 3.1 Research Model

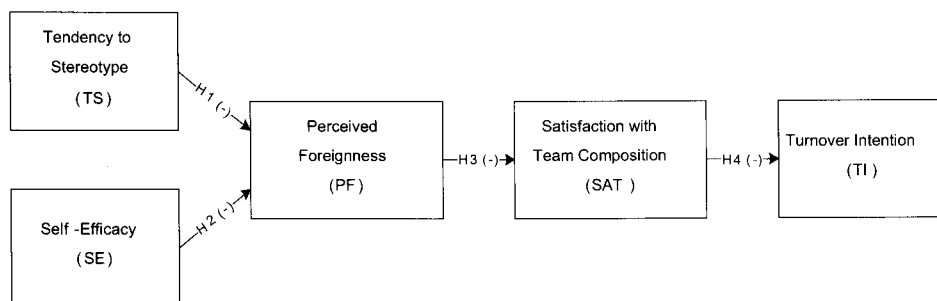
<Figure 1> represents our research model with hypotheses depicting the relationships among perceptions of foreignness, satisfaction with the team, and turnover intentions. Furthermore, we model and test relevant antecedents to foreignness-stereotyping and self-efficacy.

#### 3.2 Stereotyping

Stereotype is a construct closely related to status inconsistency. When introduced into the social science literature, the term 'stereotype' represents the cognitive structures that influence the manner in which individuals process information [Heilman, 2001]. The act of stereotyping produces shortcuts that reduce one's cognitive load when forming positive and negative categories [Link and Phelan, 2001]. In re-

lating the impact stereotyping has on the 'liability of foreignness' in virtual teams, Steele [1997] empirically demonstrates that among students the underperformance of disadvantaged groups (e.g., racial minorities and women) is due to 'stereotype threat.' Further, he suggests, while most individuals experience a little anxiety over being negatively evaluated, those who belong to negatively stereotyped groups feel a heightened sense of anxiety, which can depress performance. Thus, when a member makes evaluative comparisons to the extent that he or she associates him/herself with the negatively stereotyped group is likely to influence his/her belief about his/her own foreignness in the group. As the perception of foreignness increases, cognitive resources are diverted to deal with increased stress and coping behaviors while decreasing the organizational effectiveness of the team member.

In addition, Dweck *et al.* [1995] suggest that there are two different assumptions people make regarding the malleability of personal attributes on which individuals stereotype. First, traits such as intelligence, gender, and race are fixed (i.e., nonmalleable) and cannot be changed. Second, individuals may believe traits such as experience and education are malleable



<Figure 1> Conceptual Framework of Perceived Foreignness in Distributed Teams

and thus can be further developed by the individual. Levy *et al.* [1998] argue that these assumptions play a vital role in stereotype formation and understanding why individuals practice and endorse stereotyping. Individual beliefs about these assumptions may result in a greater/lesser inclination to categorize individuals that express certain traits. For example, if one believes that getting an education is a personal responsibility that requires effort, hard work and motivation, then he is likely to categorize individuals with little education as slothful. In contrast, if one holds that education level is directly related to intelligence, then educational achievement may require less personal responsibility. Although either assessment may or may not be true in a particular case, the assessor relies on his or her own personal experience and beliefs. Further, through rapid categorization he or she can avoid expending greater cognitive resources when making individual judgments.

Social cognition theorists propose that individuals often make trait assessments and evaluative judgments when they have limited information about their group members [Levy *et al.*, 1998]. In such a case evaluations are made rapidly, often serving as the most important criteria for judging groups and their members [Sagar and Schofield, 1980]. According to the self-categorization theory, individuals may use age, race, and gender to rate and compare themselves to other individuals [Turner, 1987]. Additionally, Schein [1978] refers to sex role stereotypes as general beliefs about the traits and abilities of men and women, which influence perceptions of individuals' ability to perform on the job [Wyer and Scrull, 1980]. Attri-

bution theorists argue that stereotyping provides a source of expectancies about behavior, perceived ability, and performance outcomes [Jones and McGillis, 1976]. Prior research shows that individuals make trait assessments quickly and acutely, using their own pre-conceived notions about malleable and un-malleable traits.

In virtual teams the act of stereotyping is likely to occur immediately following the formation of new teams or the addition of new members. Members evaluate themselves and each other in order to assess the team and their 'fit' in the team. Thus, the act of grouping members, whether on malleable or nonmalleable traits, precedes beliefs about how one may be different from other members. As assessments are made, categorization of individual members occurs and perceived or actual differences influence the members' beliefs about the extent of similarity/dissimilarity between themselves and others. It is probable that the evaluation of global virtual members results in greater stereotyping due to a more diverse set of member attributes compared to domestic teams where traits such as origin, ethnicity and culture are more similar. Hence in global teams, there may be a greater expectation of diversity within the team such that stereotyping occurs more extensively. However, it is not inconceivable to think that stereotyping among members of domestic virtual teams is also present despite the expectation of less extensive variation among members. This leads to the first hypothesis:

**Hypothesis 1:** *Stereotyping is negatively related to perceptions of foreignness in the virtual team*



### 3.3 Self-Efficacy

The term, "self-efficacy" arises from the social psychology literature and is the belief that one has the ability to perform a specific behavior [Bandura, 1977]. Self-efficacy beliefs are shown to influence the specific behavior to be undertaken, the amount of effort exerted to attempt the behavior [Barling and Beattie, 1983], and the performance resulting from the behavior [Locke *et al.*, 1984]. In IS research, the self-efficacy variable is used to extend the Theory of Reasoned Action [Fishbein and Azjen, 1975] in order to better understand and predict technology acceptance and use. Additional IS studies have demonstrated computer self-efficacy (i.e., beliefs about personal computer competence) is related to greater adoption of technology [Hill *et al.*, 1986], increased technology use [Gallivan *et al.*, 2005; Easley *et al.*, 2003], innovations [Burkhardt and Brass, 1990] and improved performance [Webster and Martocchio, 1993]. Thus, beliefs about one's competence in a specific area often lead to positive outcomes.

Bandura [1988] posits that self-efficacy involves individual judgments about one's ability to execute a course of action rather than to distinguish among requisite skill sets. Thus, in a team context, the extent to which a member believes he has the ability to make a contribution to the team is likely to reduce his perception about how he is different (i.e., foreign) from other members. Harvey *et al.* [2004] suggest that upon integration into a new cultural environment, individuals high in self-efficacy are more likely to discount certain cues (i.e., gender, education), which otherwise contribute to the formation of stereotypes. Thus, highly

efficacious individuals may perceive less differentiation (i.e. foreignness) among their peers due to discounting signals which others, having lower levels of self-efficacy, use to categorize and evaluate their peers. This suggests that team members confident in their ability to contribute to the team tend to focus cognitive energy on the team's course of action rather than evaluating team members. Hence, we hypothesize the following:

**Hypothesis 2:** *Self-efficacy is negatively related to perceptions of foreignness in the virtual team*

### 3.4 Perceived Foreignness and Team Member Satisfaction

Perceived foreignness is a subjective measure of differences (e.g., beliefs, intelligence, ability, physical characteristics) between an individual team member and other members. Status inconsistency theory suggests that as perceptions of foreignness increase individuals display coping mechanisms to deal with additional stress. However, if an individual difference (or status trait) cannot be altered, the member becomes less content in the environment and, perhaps, less satisfied with the team's composition. Following Locke *et al.* [1984], we define satisfaction with team composition as an individual's subjective measures of the team that proceed from positive emotional states regarding the team's composition. Satisfaction with team members is one of many core attributes of job satisfaction found in the job-related outcomes literature, reflecting an individual's feelings and attitude toward team members

[Friday and Friday, 2003]. Cranny *et al.* [1992] suggest that an individual's level of satisfaction develops out of a combination of both cognitive and affective responses, and negative affect may result in a growing desire to leave the group.

Hence, as perceptions of foreignness increase in a team context and negative cognitive and affective responses such as stress and anxiety also rise, it is likely that the member is less convinced of his 'fit' in the team. Although the team member may be confident of his own abilities, he may remain doubtful of his usefulness in a team to which he has attributed greater differences. Consequently, the member is less satisfied with the make-up of the team leading to the following hypothesis:

**Hypothesis 3:** *The perception of foreignness is negatively related to member satisfaction with the team's composition in the virtual team*

### 3.5 Team Member Satisfaction and Turnover Intention

Tett and Meyer [1993] define turnover intention as "a conscious and deliberate willfulness to leave the organization." Indeed, turnover intention functions as a cognitive antecedent to actual turnover [Thatcher *et al.*, 2002], and has been demonstrated across multiple occupations [Steel and Ovalie, 1984]. Previous research on employee turnover also shows a consistently positive relationship between turnover intention and actual turnover [Steel and Ovalie, 1984]. Turnover intention focuses on the cognitive processes resulting in one's desire/

motivation to leave an organization; thus, it is a useful predictor of actual turnover. Since individuals themselves have greater control over their turnover intention than does their organization, per se, and predicting turnover intention is less difficult than predicting actual turnover [Igharia and Greenhaus, 1992], this study uses turnover intention as the dependent variable.

Specter [1997] argues that a combination of personal and organizational factors influence job satisfaction, which then influences turnover intention. Prior research indicates that job satisfaction represents individuals' evaluations of not only their job, but also their work context, and is negatively related to turnover intention [Arnold and Feldman, 1982]. Interestingly, individuals more demographically diverse from other group members are less satisfied and more likely to leave their jobs [O'Reilly *et al.*, 1989]. Dissatisfaction produces withdrawal cognitions causing individuals to consider the advantages and disadvantages of leaving their jobs [Mobley *et al.*, 1978], whereas satisfaction is an antecedent of behavioral intention in that once workers' expectations are met, turnover intention, if present, decreases [Parasuraman 1982]. This leads to the following hypothesis:

**Hypothesis 4:** *Satisfaction with the team's composition is negatively related to turnover intention in the virtual team*

## IV. Methodology and Research Design

Data were collected from virtual team mem-

bers representing their respective organizations using a paper-pencil survey. Generalizability was increased by surveying virtual team members working on IS projects in small, medium, and large firms listed on the two Korean stock markets (Korea Composite Stock Price Index (KOSPI) and Korean Securities Dealers' Automated Quotation (KOSDAQ). Organizational size was measured by asking respondents to provide information on their organization's annual profits in the most recent year. Organizations with annual profits less than \$10 million were treated as small, between \$10 million and \$249 million as medium-sized, and \$250 million or more as large [Drury and Farhoomand, 1999]. Companies were clustered into respected groups based on size and randomly selected as potential study participants. In total, 250 surveys were disseminated to distributed team members working in one of five organizations and 117 valid responses were collected yielding a 46.8 percent response rate <Table 1>.

#### 4.1 Sample

The survey participants were all Korean composed of 75 percent male and 25 percent fe-

<Table 2> Summary of Respondents' Demographic Information

Demographic Categories	Range	Percentage
Age	< 25	< 1%
	25~35	75.2%
	36+	23.9%
Gender	Male	75%
	Female	25%
Highest Degree Earned	High School	< 1%
	2 Yr. College	< 1%
	BA/BS	94%
	Masters	4.27%
Tenure with Company (in years)	< 1	3.4%
	1~5	83.7%
	6+	10.3%

male <Table 2>. The participants' ages ranged from 21 to over 45 years, with the largest number in the 25~35 age range. The respondents' educational background ranged from a high school degree to masters degrees. Additionally, 83 percent reported having been with their companies between 1 and 5 years. Eleven distributed teams were studied with team size ranging from 5 to 15 members <Table 3>. The average length of time spent on each distributed team was 2.1 years. Team members who participated in the study belonged to at

<Table 1> Description of Participating Organizations

Organization	Industry	# of Employees	Annual Profit (Approximately)	# of Individuals Responding per Organization	# of Geographically Distributed Team within Organization
Company 1	Finance	50	\$3 million	3	3
Company 2	Construction	500	\$40 million	16	8
Company 3	Business Consulting	200	\$1.6 million	5	16
Company 4	Distribution/Trade/Sales	8,000	\$7.6 billion	47	56
Company 5	Stock/Finance	1,000	\$3.9 billion	46	23

&lt;Table 3&gt; Summary of Virtual Teams Working on an IT Project within Their Organization

Team Name	# of Team Members	Avg. Length of Time Spent in a Distributed Team (in years)	# of Team Leaders per Distributed Team	# of the Completed Project
Sales	11	2.1	1	37
IT Support	9	3.0	2	21
Production	15	2.3	3	45
Marketing	12	1.8	3	18
R&D	9	2.3	1	12
Accounting	13	2.2	1	30
Business Support	12	1.0	2	55
Legal Support	5	2.1	1	68
General Affair	6	2.1	2	65
Purchasing	14	2.0	2	31
HR	11	2.0	2	56

least one team where the task was to evaluate and/or implement new hardware or software. <Table 4> lists the modes by which team members communicated during the project.

&lt;Table 4&gt; Respondents' Use of Communication Media

Communication Channel	Mean	Std. Dev.
Conference Calls	6.26	1.25
E-mail	5.77	1.77
Face to Face	2.87	1.86
Fax	4.52	2.38
Telephone	4.16	1.97
Video Conferencing	4.97	2.42
Voice Mail	5.67	2.02
Web Collaboration Tools	5.77	1.73

## 4.2 Measures

The construct items are compiled from several sources and adapted to the nature of the present study. Foreignness is assessed using scales adapted from Sirgy *et al.* [1997]. It is op-

erationalized as the degree to which individuals perceive team members as being inconsistent with their own self-image. Items include measures of personal and physical self-image as well as overall perceptions of dissimilarity with other team members. Satisfaction is assessed using scales from Kohli and Jaworski [1994], and turnover intention is measured with scales adapted from Good *et al.* [1996].

As a potential antecedent to foreignness, self-efficacy measures the extent to which subjects are confident of their skills and abilities in relation to the team project. Scales are adapted from Hartline and Ferrell [1996] and Jones [1986]. Likewise, tendency to stereotype uses scales developed by Dweck *et al.* [1995], representing an individual's propensity to categorize others in a general sense as well as based on intelligence. Although we use previously validated scales in our instrument, the instrument is tested on undergraduate students for wordiness, spelling, understanding, and suggestions for improvement before the final survey is admini-

nistered. All measures utilize a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

## V. Data Analysis

### 5.1 Measurement and Assessment of Model

PLS-Graph 3.0 was used in a two-step approach to analyze the data. This procedure was preferred to other structural methods (e.g., LISREL) because our sample size needs to be small and our objective is to establish the predictive validity of the specified paths, rather than to produce a 'best fit' causal model. The measurement model is first assessed to evaluate

the reliability and validity of the research instrument using: (1) item reliability, (2) internal consistency, and (3) discriminant validity [Barclay *et al.*, 1995; Chin, 1998].

Individual item reliability was evaluated using the individual item loadings or simple correlations of the measures related to each construct. Following Carmines and Zeller [1979], loadings of 0.7 or greater are indicative of item reliability as this implies more than 50 percent of the variance in the observed variable is shared with the construct [Barclay *et al.*, 1995]. Results show that all items meet this requirement with the exception of Self-Efficacy1 (SE1), Self-Efficacy2 (SE2), Foreignness2 (F2), and Foreignness3 (F3) (see <Table 4>), prompting their removal. Since the remaining items have

<Table 5> Loadings, Weights, and Composite Reliability of the Measurement Model

Construct	Item	Original Model			Refined Model		
		Weight	Loading	Internal Consistency	Weight	Loading (IIR)	Internal Consistency
Tendency to Stereotype	ST1	0.319	0.800	0.890	0.352	0.825	0.888
	ST2	0.334	0.833		0.352	0.852	
	ST3	0.279	0.822		0.269	0.797	
	ST4	0.290	0.818		0.248	0.789	
Self-Efficacy	SE1	0.231	0.657	0.787	Dropped		0.822
	SE2	0.407	0.686		Dropped		
	SE3	0.450	0.728		0.668	0.879	
	SE4	0.345	0.701		0.522	0.791	
Perceived Foreignness	F1	0.430	0.792	0.803	0.520	0.901	0.840
	F2	-0.092	-0.321		Dropped		
	F3	0.298	0.646		Dropped		
	F4	0.327	0.818		0.433	0.857	
	F5	0.235	0.723		0.283	0.709	
Satisfaction with Team Composition	SAT1	0.379	0.871	0.905	0.388	0.874	0.905
	SAT2	0.347	0.854		0.344	0.852	
	SAT3	0.419	0.892		0.414	0.890	
Turnover Intention	TI1	0.402	0.881	0.922	0.401	0.881	0.922
	TI2	0.364	0.935		0.364	0.935	
	TI3	0.354	0.863		0.355	0.863	

reliability loadings greater than 0.7, the measurement model indicates that the survey instrument is sufficient to measure each individual construct. <Table 5> presents the original and refined loadings and weights for each item.

Internal consistency assesses the reliability of the reflective measures (i.e., indicators that are manifestations of the construct) [Chin, 1998]; with values of 0.7 or greater considered adequate [Nunnally, 1978]. Internal consistency uses the item loadings estimated within the causal model and is not influenced by the number of items in the scale [Fornell and Larcker, 1981]. The constructs have internal consistency scores between 0.822 and 0.922, meeting the reliability requirements suggested by Chin [1998].

Discriminant validity indicates the degree to which a given construct is dissimilar to other constructs [Barclay *et al.*, 1995]. Discriminant validity was evaluated using the average variance extracted (AVE) measure and the cross-loadings obtained from PLS-Graph 3.0. AVE, defined as the average variance shared between a construct and its measures [Barclay *et al.*, 1995], indicates the amount of variance captured by the scale items in relation to the variance caused by measurement error. An AVE greater than 0.5 is indicative of discriminant validity, mean-

ing that at least 50 percent of measurement variance is captured by the construct.

<Table 6> shows the AVE scores and the correlation matrix for the constructs. All constructs exceed the 0.5 recommended minimum AVE score. The bolded diagonal elements of the matrix are the square root of the AVE and the off diagonal elements are the correlations between constructs. The measurement model demonstrates adequate discriminant validity, since the diagonal loadings are significantly greater than the off-diagonal loadings in the corresponding rows and columns. Since the instrument demonstrates acceptable levels of validity and reliability, we proceed to evaluate the structural model and test the hypotheses.

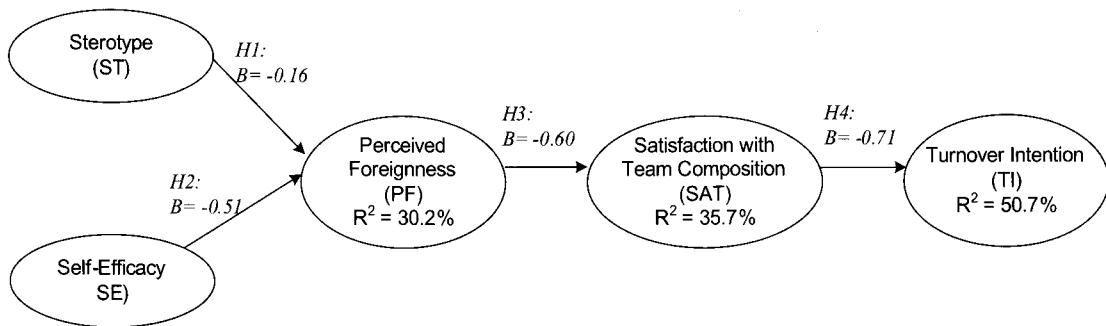
## 5.2 Structural Model Assessment

The structural model is used to test the independent relationships among the constructs proposed in the conceptual model (see <Figure 2>). The hypotheses are tested by evaluating the significance of the path coefficients (i.e., standardized betas) [Compeau and Higgins, 1999]. Additionally, PLS-Graph 3.0 provides a measure of the predictive power of the research model, or the squared multiple correlation ( $R^2$ ) value for each endogenous variable

<Table 6> AVE Scores and Correlation of Latent Variables

Constructs	AVE	TS	SE	PF	SAT	TI
TS	0.666*	<b>0.816</b>				
SE	0.699*	0.115	<b>0.836</b>			
PF	0.639*	-0.220	-0.526	<b>0.799</b>		
SAT	0.761*	0.048	0.478	-0.597	<b>0.872</b>	
TI	0.798*	-0.080	-0.477	0.550	-0.712	<b>0.893</b>

Note) \* The italic elements in the matrix are the average variance extracted scores generated by PLS Graph 3.0.



<Figure 2> A Model of Perceived Foreignness in Distributed Teams

[Chin, 1998]. This value is comparable to the  $R^2$  value in a multiple regression model which represents the amount of variance explained by the independent variables contained within the model [Barclay *et al.*, 1995].

The bootstrap procedure with 200 re-samples was used to calculate the path coefficients, which indicates the strength of the relationship between two constructs (Chin, 1998). The results support three of the four hypotheses, rejecting H1, the positive relationship between Tendency to Stereotype and Perceived Foreignness ( $\beta = -0.162$ ,  $p = 0.018$ ). The results also support H2, a significantly negative relationship ( $\beta = -0.507$ ,  $p \leq 0.0001$ ) between Self-Efficacy and Perceived Foreignness. Furthermore, Perceived Foreignness has a significantly negative relationship with Satisfaction ( $\beta = -0.597$ ,  $p \leq 0.0001$ ) supporting H3, and Satisfaction is negatively related to Turnover Intention ( $\beta = -0.712$ ,  $p \leq 0.0001$ ) supporting H4.

Additionally, Tendency to Stereotype and Self-Efficacy explain 30.2 percent of a distributed team member's perceptions of foreignness, and foreignness contributes 35.7 percent toward understanding a distributed team member's satisfaction with the team composition.

More than half (50.7%) of Turnover Intention is explained by Satisfaction with the Team.

## VI. Discussion

The main findings suggest that both the tendency to stereotype and self-efficacy influence distributed team members' perceptions of foreignness. Unexpectedly, Tendency to Stereotype has a negative relationship with perceptions of foreignness in distributed teams. The results of reassessing the scale items for Tendency to Stereotype reveal their stronger inclination for individual acceptance, than for individual categorization. Thus, the more one tends to accept individuals as they are, the less one perceives differences (i.e., foreignness). Moreover, since the distributed teams studies consist of culturally similar members (i.e., Korean), the country of origin may serve as a 'litmus test' for perceived foreignness (or perceived similarity as in this case). In other words, the greater tendency a participant has to stereotype other members of the group, the more likely this person is to see himself as being similar (less foreign) to his/her team members, as in this case where all participants were

Korean. Further research is required to more clearly define and explicate the Tendency to Stereotype construct in the context of domestic distributed teams, and the investigation of the construct in cross-cultural distributed teams would also provide more clarification.

However, Self-Efficacy is shown to be a strong antecedent of perceived foreignness in the domestic distributed team context. It appears that individuals high in self-efficacy believe they possess the 'intellectual capital' necessary to complete a project, or encompass abilities equal to or beyond their team members. Consequently, if these members are convinced about their personal ability to accomplish the team task, they may be less inclined to evaluate other members or believe that differences in team members matter. After all, if the team task is the goal and a member believes he/she possesses the necessary abilities to complete the goal, then the abilities (or lack) of others may be inconsequential. Additionally, upon integration into a new cultural environment, individuals high in self-efficacy may be able to discount certain cues salient to the environment prior to the full formation of their stereotypes [Harvey *et al.*, 2004].

The negative relationship between Perceived Foreignness and Satisfaction with Team Composition supports the premise of status inconsistency theory: that as inconsistencies increase among individuals in a group, satisfaction with the group tends to decline. The relatively moderate R squared (35.7%) for the Satisfaction construct suggests that other factors are involved in creating satisfied distributed team members. However, moderating the perceptions of differences among members is likely to lead to

more satisfied members and more successful teams. Future research that identifies additional factors will contribute to the development of successful, highly functioning distributed teams. Finally, the negative relationship between Satisfaction and Turnover Intention has been reported throughout the literature and is confirmed in this study as well.

## VII. Conclusion

In this unique contribution to the virtual team literature, we empirically examine the 'liability of foreignness' in Korean virtual teams tasked with an IT project. The findings of our study indicate that the diversity inherent in geographically distributed knowledge sources is likely to create significant challenges for organizations. In the attempt to maximize the use of distributed knowledge, the organization may inadvertently create dysfunctional virtual teams. As firms expand globally, the potentially negative consequences of 'foreignness' are a critical concern for both practitioners and researchers. First, organizational costs associated with low job satisfaction and increased turnover can be devastating to an organization. Second, low satisfaction and turnover may cause instability that cripples the virtual team, impacts the success of the IT project and costs the organization millions of dollars. The loss of one key team member can create a deficiency of expertise that delays or terminates product launch. It is our desire that this study motivates further research to identify effective strategies that reduce perceptions of foreignness in global organizations in order for them to optimize knowledge sharing and ultimately ach-



ieve globally competitive advantage.

## 7.1 Implications

With the infusion of cross-cultural and cross-functional virtual teams into organizations' global strategy, managing employee turnover by limiting perceptions of foreignness may be the most novel approach for retaining productive employees and leveraging organizational knowledge. Recruiting individuals that demonstrate high self-efficacy may be an effective strategy to limit perceptions of inconsistencies and differences among team members. Harvey *et al.* [2000] suggest that organizations can identify high self-efficacious individuals through: (1) monitoring how individuals perform at their present task(s); (2) identifying what personal attributes are most salient in the individuals who have had the most success at certain positions or tasks; and (3) observing individuals' level of self-confidence or sense of morale. Likewise, managerial intervention to nurture and develop individual skill sets may enhance the self-efficacy that leads to less perceived differences and greater satisfaction.

Limiting perceptions of foreignness may also be accomplished by screening employees based on their tendencies to stereotype. Individuals that are more accepting of unmalleable attributes may increase the productivity and cohesiveness of the team, since they may be less inclined to withdraw or disassociate in a diverse group. Organizations that develop and utilize assessment procedures to identify personal and cultural stereotypes may be better equipped to manage the beliefs detrimental to virtual team

stability and success. Management strategies may encompass: (1) sensitivity training to break down social/cultural barriers; (2) employee training to develop individual skills, knowledge, and abilities (i.e., self-efficacy), and (3) increasing managerial awareness of the detrimental effects in categorizing teams and members.

Interestingly, the mere matching of individuals to their perspective team members solely based on demographic characteristics is not likely to generate a better candidate-team fit. Our results using domestic Korean distributed teams suggest that 'foreignness' is more than a cultural phenomenon. Identifying the specific aspects of foreignness among distributed team members is the first step. Then, employing strategies to diminish the perceptions of foreignness is likely to result in greater team cohesiveness, stability, and productivity. Such managerial efforts may provide the greatest organizational benefit in managing turnover. To this end, an ability to predict actual turnover may provide organizations with an aptitude for recognizing when team member satisfaction is declining or when efforts to limit perceived differences are ineffective. These proactive measures may control turnover and reduce the 'liability of foreignness.'

## 7.2 Limitations

As with any empirical research, the present study has several limitations. First, common method bias is a main source of measurement error that may result in misleading conclusions. The data collected were self-reported, and both independent and dependent variables were collected concurrently. Furthermore, the surveys

were administered with no observation or assistance. Therefore, we do not know how distributed the respondents were from their team members, but we can infer based on the frequency and type of communication media used that the members were distributed in some capacity.

Further, we made an attempt to limit some bias using the survey approach by reversely coding some questions to ensure the respondents were carefully reading and evaluating each item. Furthermore, the questionnaire items were examined in order to minimize ambiguity and social desirability aspects that may contribute to common method bias. Second, all participants in this study are Korean and members of domestic virtual teams. Therefore, any

generalizations to cross-cultural and globally distributed teams should be made with caution. However, if significant relationships exist with perceptions of foreignness in a context of less complexity (i.e., domestic virtual teams), the relationships are likely to hold in situations of greater complexity (i.e., global and cross-cultural teams). Third, this study did not take into account any difference that may have existed in demographic characteristics among each distributed team and team member while such difference in characteristics may influence the results of this study. Finally, although the participants responded to working primarily in a virtual context, we did not reflect the impact the geographical distances among team members have on the results.

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## 〈Appendix 1〉

### Questionnaire Items

7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree)

### Turnover Intention

- TI 1: I plan to stay with this team for awhile. (R)
- TI 2: I plan to be with this team until the project is complete. (R)
- TI 3: If given an opportunity I would switch to another team.

### Satisfaction

- SAT 1: My team members are the kind of people I like to work with.
- SAT 2: Overall, I'm satisfied with my team composition.
- SAT 3: I think I get along well with my team members.

### Self-Efficacy

- SE 1: I think I can provide an equal contribution to this project as my team members.
- SE 2: I feel that I am qualified for this project.
- SE 3: I feel confident that my skills and abilities equal or exceed those of my team members.
- SE 4: I can handle a more challenging project than the one assigned.

### Foreignness

- F1: I am very different from my team members.
- F2: I can identify with my team members. (R)
- F3: I do not have a lot in common with my team members.
- F4: I feel my personal characteristics are similar to my team members. (R)
- F5: I feel my physical characteristics are similar to my team members. (R)

### Tendency to Stereotype

- ST 1: A person has a certain amount of intelligence and he/she really can't do much to change it.
- ST 2: A person can learn new things, but he/she can't really change his/her basic intelligence.
- ST 3: Everyone is a certain kind of person, and there is not much that they can do to really change that.
- ST 4: People can do things differently, but the important parts of who they are can't really be changed.



◆ About the Authors ◆



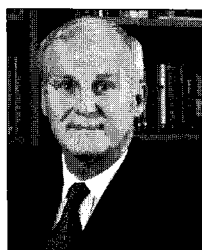
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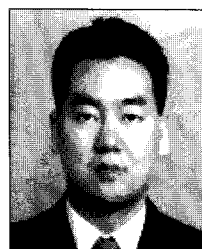
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