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Editors

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Contents

Perceived Organizational Support and Organizational Commitment: The Mediation Influence of Psychological Well-Being	105
<i>Meenakshi Aggarwal-Gupta, Neharika Vohra and Deepti Bhatnagar</i>	
Intellectual Property Exchange Between Two Partner Companies – Application of the Theory of Constraints Thinking Processes	125
<i>Beate Klingenberg</i>	
The Effect of Followers' Behavior on Leader Efficacy	139
<i>Lei Wang, Kim T. Hinrichs, Leonel Prieto and Janice A. Black</i>	
An Examination of Female Participation on U.S. Board Subcommittees.	153
<i>Hong Zhu, Kenneth Small and Susan Flaherty</i>	
Exploring the Effect of Unfair Work Contexts on the Development of Fairness Beliefs	167
<i>Sonia M. Goltz</i>	

Perceived Organizational Support and Organizational Commitment: The Mediational Influence of Psychological Well-Being

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The relationship between individual and organization was explored by examining the influence of perceived organizational support (POS) and psychological well-being (PWB) on organizational commitment. 513 managers working in two large Indian manufacturing organizations were administered standardized measures of POS, PWB, and OC measuring affective commitment (NC), normative commitment (NC), high sacrifice (HiSac), and low alternatives (LoAlt). Regression analysis revealed that POS significantly influenced psychological well-being and all components of organizational commitment. PWB was found to have significant association with AC, NC, and LoAlt. Mediation analysis revealed partial mediation between POS and AC, and POS and NC, and full mediation between POS and LoAlt. A post hoc analysis was carried out to understand the impact of different dimensions of psychological well being on organizational commitment. The implications of the findings are discussed.

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The relationship between employees and their organizations has been studied extensively in the organizational behavior literature (Fuller et al., 2006; Masterson & Stamper, 2003). Organizations help employees cope with social change and personal loss, provide defense against unconscious anxieties (Levinson, 1965), offer an entity that they can identify themselves with, and foster perceptions of comfort and competence (Meyer & Allen, 1991). Employees in turn, develop a sense of belongingness to the organization (Aslege & Eisenberger, 2003; Eisenberger et al., 1986) and internalize its norms and values (Weiner, 1982). As a result of various person and work related interactions with the organization, employees develop certain attitudes towards the organization which guide their behavior. Organizational support theory has found strong evidence of this reciprocal relationship (Eisenberger et al., 2001) where employees reciprocate organizational actions through commitment to the organization.

Extant research suggests that positive work experiences influence the psychological well-being of an individual (Ryff & Keyes, 1995; Ryff & Singer, 2002). The growing literature on positive psychology and/or positive organizational behavior (e.g. Luthans & Church, 2002) also supports the finding that positive psychological state of an individual favorably influences attitudes towards the organization. The present study examines the impact of psychological well-being on the interaction between organization and employees.

Psychological Well-Being (PWB)

The concept of well-being has been variously interpreted by different researchers. The two dominant perspectives are the hedonic approach, which focuses on happiness and defines well-being in terms of pleasure attainment, pain avoidance, lower stress levels, and life satisfaction (e.g. Diener, 1984; Payne & Morrison, 2002; Siu, 2002; Wright & Hobfoll, 2004), and the eudaimonic approach, where a greater focus is placed on meaning, self-realization and the perception of individual as a 'fully functioning' person (Ryan & Deci, 2001; Ryff, 1989).

The eudaimonic approach is embodied in the interpretation of psychological well-being proposed by Carol Ryff. According to her, the construct of psychological well-being goes beyond defining human well-being in terms of absence of negative emotions or presence of happiness alone (Ryff, 1989). Psychological well-being is not simply an attaining of pleasure but also "the striving for perfection that represents the realization of one's true potential" (Ryff, 1995, p. 100). Psychological well-being consists of six elements that, in combination, indicate whether, and how well an individual is dealing with the existential challenges of life (Ryff, 1989; Ryff & Keyes, 1995). The dimensions of these are *self-acceptance* or positive attitudes toward oneself; *positive relations with others* or the ability to achieve close union with others; *autonomy*, which includes the qualities of self-determination, independence, and the regulation of behavior from within; *environmental mastery* or the ability to engage in, and manage activities in one's surrounding world; *purpose in life* or having a sense of directedness and intentionality; and *personal growth*, which represents one's continual development and striving to realize one's potential to grow and expand as a person.

McGregor and Little (1998) analyzed a diverse set of mental health indicators used by various researchers and found two factors emerging out of these indicators – the

first one reflecting happiness, and the other reflecting a meaningfulness factor. Among the six dimensions of PWB, self-acceptance and environmental mastery were linked to happiness and the other four dimensions tapped into the meaningfulness domain. This study uses the eudaimonic perspective to understand the impact of PWB on organizational commitment. A detailed description of these dimensions is available in Ryff's (1989) work.

Studies have found that PWB has a positive influence both on people's health and attitudes. For example, individuals with a higher sense of well-being are found to be more productive and in possession of greater mental and physical health as compared to those with a low sense of well-being (Ryff & Singer, 2002; Wright & Cropanzano, 2004). Employees with a higher sense of well-being show more positive attitudes and respond better to various situations in life compared to those low on well-being (Ryff & Keyes, 1995).

In contrast, people with lower levels of well-being are more likely to see neutral or ambiguous events as threatening (Seidlitz & Diener, 1993; Seidlitz, Wyer & Diener, 1997) which is likely to cause problems in an organizational setting where change is taking place. Further evidence shows that negative feedback is seen as more hurtful by people with lower PWB and positive feedback produces fewer benefits for them. People with lower PWB also use more contentious interpersonal tactics (e.g. Derryberry & Read, 1994; Larsen & Ketelaar, 1991). Given these findings, it becomes important to understand the impact of well-being on job attitudes.

Perceived Organizational Support (POS)

Positive work experiences provide employees with perceptions of organizational support. POS reflects perceptions of an organization's commitment to its employees (Shore & Wayne, 1993). It is a set of global beliefs that employees develop concerning the extent to which the organization values their contribution and cares about their well-being (Eisenberger et al., 1986). Organizations may develop these global beliefs by fulfilling employees' socioemotional needs thereby creating in them a feeling of obligation to care for the organization's welfare and/or by increasing the effort-reward expectancy, thereby strengthening the employee's belief that the organization recognizes and rewards performance (Rhoades & Eisenberger, 2002). Donald et al. (2005) found that almost 25% of the variance in reported levels of productivity was predicted by PWB, the perceived commitment of the organization to the employee, and the availability of resources and communication to employees.

POS manifests itself in various ways such as the opportunity for advancement and growth and supportive work conditions (Eisenberger et al., 1986). Supportive work conditions have been found to foster feelings of competence (Eby et al., 1999) and to lead to a feeling of accomplishment and of being valued (Allen & Meyer, 1990; O'Reilly & Caldwell, 1980). POS has been found to help in the fulfillment of self-esteem and affiliation needs (Armeli et al., 1998); to foster positive moods (Eisenberger et al., 2001); to reduce negative moods at work (George et al., 1993); to reduce stress (Cropanzano et al., 1997); and to encourage feelings of trust (e.g. Whitener, 2001). POS has also been found to be positively related to work attitudes and behaviors such as affective commitment, job satisfaction, perceptions of justice,

and organizational citizenship behavior (Eisenberger et al., 1997; Eisenberger & Rhoades, 2002; Shore & Tetrick, 1991).

Supportive actions from the organization lead a person to infer that the organization is proud of their accomplishments and trusts them to perform their task well, thus enhancing their feelings of competence and worth (Eisenberger et al., 2001, George & Brief, 1992). Employees feel a sense of identification (Knippenberg & Sleebos, 2006) and a sense of pride (Fuller et al., 2006) in their organization. Work experiences that provide meaning to individuals' lives contribute to their well-being by fulfilling various needs of the employees (McGregor & Little, 1998). Perceptions of support seem to foster positive emotions in employees and may be strongly associated with their psychological well-being (Ryff & Singer, 1998). It is expected that:

H1: Perceived organizational support will be positively related to psychological well-being

Organizational Commitment (OC)

Organizational commitment is perhaps one of the most widely researched concepts in organizational behavior literature (Meyer & Herscovitch, 2001). It has been described as “a psychological state that binds the individual to the organization (i.e., makes turnover less likely)” (Allen & Meyer, 1990, p. 14). It characterizes the employee's relationship with the organization and has implications for the decision to continue or discontinue membership in the organization (Meyer and Allen, 1991). Depending on how it develops, commitment to the organization may take forms such as affective commitment, continuance commitment, and normative commitment (Allen & Meyer, 1990). Employees with affective commitment to the organization continue with their employment because they *want to*, those with continuance commitment feel that they *need to*, and those with normative commitment feel that they *ought to* remain in the organization (Meyer & Allen, 1991). An organization that wishes to enhance employee's commitment to the organization needs to understand how each of these attitudes is formed. Various studies have tested for and found a significant impact of POS on the development of OC. The same results are expected in this study.

Meta-analytic reviews (Mathieu & Zajac, 1990; Meyer; et al., 2002) have shown that organizational commitment is influenced by situational as well as dispositional factors. While many studies have explored the linkage between organizational commitments, other work related attitudes, and contextual factors, very few studies have explored the role an individual's disposition and psychological state plays in the formation of commitment. It is equally important to understand the impact of individual characteristics on commitment since these factors will partially explain the formation of commitment. Organizational commitment has also been described as a mindset that influences the behavior of an individual and binds the individual to a particular course of action (e.g. Meyer & Allen, 1991; Scholl, 1981). Therefore, it becomes important to understand possible psychological factors leading to the development of a particular mind-set.

Affective commitment (AC) has been found to correlate with a need for

achievement, affiliation and autonomy, higher order need strength, self-efficacy and locus of control (Mathieu & Zajac, 1990; Meyer et al., 2002). These components also overlap with the conceptualization of PWB (e.g., self efficacy is an integral part of environmental mastery). Employees who have confidence in their abilities and achievements tend to develop greater AC than those who are less confident (Meyer & Allen, 1997). It has been argued that a person with a higher PWB would be better able to deploy his or her technical and managerial skills (Wang, 2002) which in turn can lead to higher perceived personal competence. Such perceptions of well-being and competence will be strongly correlated with affective commitment.

Thus, it is expected that:

H2 a): Psychological well-being will be positively related to affective commitment to the organization

Eby et al. (1999) presented a model of affective commitment wherein they proposed that intrinsic motivation mediated experiences related to work and organizational commitment. Intrinsic motivation has been conceptualized as the experience of positive internal feelings that an employee has while on a job. Citing earlier research, Eby et al. (1999) proposed that jobs that motivate an individual sense of competency and mastery in that person. The present study suggests that jobs that motivate would also enhance the psychological well-being of an individual. It is expected that supportive working conditions will enhance the well-being of employees and motivate them to develop positive attitudes towards the organization. The fulfillment of various needs that are important to the well-being of the individual will lead to the development of commitment to the organization.

As mentioned earlier, POS is expected to contribute to work experiences fostering feelings of PWB. Meyer and Allen (1997) have argued that AC mainly develops through personal fulfillment. Employees, who associate their well-being with the organization, are likely to form affective attachment with the organization. Hence, PWB would mediate the relationship between POS and AC such that in the absence of PWB, employees would not develop an affective attachment to the organization even if perceptions of support from the organization were high. Therefore,

H2 b): Psychological well-being will mediate the relationship between perceived organizational support and affective commitment.

Very little work has been done to understand the construct of normative commitment. While attitudes alone have been found to predict behavior in an individualist context, norms and attitudes have been found to predict behavior in a more collectivist context (Suh et al., 1998). Additionally, research in collectivist societies suggests that normative commitment (NC) may be associated differently with other constructs (Yao & Wang, 2006) as opposed to a North American context where NC seems to follow the same associations as AC (Bergman, 2006). Since several studies have characterized India as primarily a collectivistic society (Sinha et al., 2002), it is important to include normative commitment in this study. In addition to

studying the relationship between POS, PWB and AC, an exploratory analysis was carried out to test the relationship between POS, PWB and NC.

Similar to AC, a sense of well-being also has an expected association between NC and the organization. Employee's PWB would influence the acceptance of prevalent norms and attitudes. So it is expected that,

H3 a): Psychological well-being will be positively related to normative commitment to the organization.

H3 b): Psychological well-being will mediate between perceived organizational support and normative commitment.

It is expected that employees low on PWB will have a lower sense of competence in their jobs. As a result, the cognition of side bets or lack of available alternatives may lead to feelings of frustration and dissatisfaction among employees (Shore & Barksdale, 1991). Employees with low well-being may have a greater cognition of the sacrifices involved in leaving the organization. They will perceive fewer alternatives available to them in the case of leaving the organization, will lack the confidence to find alternative employment, and will feel tied to the organization out of necessity. Hence it is expected that,

H4 a): Psychological well-being will be negatively related to perceptions of HiSac

H4 b): Psychological well-being will be negatively related to perceptions of LoAlt

Employees with perceptions of organizational support would be less likely to seek out and accept jobs in alternative organizations (Eisenberger et al., 1990). In support of this, POS has been found to have a negative relationship with the intention to quit (Wayne, Shore & Liden, 1997) and turnover behavior (Rhoades, Eisenberger & Armeli, 2001). This may partly be because the attachment that employees form with the organization gives them a feeling of happiness and accomplishment.

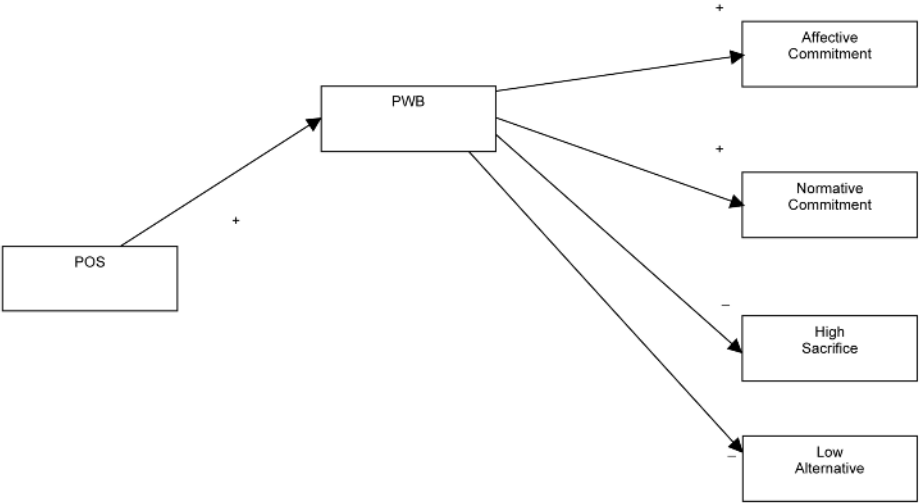
When a sense of well-being is factored in, employees may continue their association with the organization out of desire rather than out of the need to do so. However, in the absence of well-being, supportive actions from the organizations may not be perceived positively and may not lead to a decrease in feelings of frustration and entrapment. An exploratory analysis will be carried out to test for mediation by PWB between POS and the two components of continuance commitment. It is hypothesized that,

H5 a): Psychological well-being will mediate between perceived organizational support and HiSac.

H5 b): Psychological well-being will mediate between perceived organizational support and LoAlt.

The proposed research model is presented in Figure 1.

Figure 1: *Proposed Relation between POS, PWB, AC, NC, HiSac and LoAlt*



Method

Sample and procedure

The sample consisted of managerial level employees in India from two large manufacturing organizations based in the same geographic location and owned by the same parent organization. The questionnaires were personally administered to 800 employees. Respondents voluntarily completed the questionnaires either during office hours or by taking them home. To encourage candid responses, both verbal and written assurances of confidentiality were given to potential respondents. On average, it took each respondent 45 minutes to complete the questionnaire.

We ran the analyses separately and together for both organizations. We found the results of one organization being reflected in the other organization. Type of organization was found to moderate the strength of relationships, but not the direction of the relationships, so for the sake of parsimony, it was decided to combine the data. A total of 540 responses (67.5%) were received from the two organizations, of which 513 responses were usable. The respondents were predominantly men (approx. 92%). These respondents were categorized into senior level (94), middle level (302), and lower level (98) employees as per the organizations' nomenclature. The average age of the respondents was 42.68 years (SD = 10.34). Average tenure in the current organization was 17.7 years (SD = 11.36) and total work experience was an average of 19.67 years (SD = 10.93).

Measures

The questionnaire consisted of 119 items presented in two parts. The first part contained items of the PWB measure, and the second part consisted of items from the OC and POS measures as described below. The sets of measures described below were presented to all subjects in identical order.

Perceived organizational support

POS was measured with the 17-item short version of Eisenberger et al.'s (1986) Survey of Perceived Organizational Support (SPOS). The 17-item scale has been shown to be unidimensional with internal reliability estimates (Cronbach's alpha) of 0.90 and higher (Eisenberger et al., 1997; Rhoades & Eisenberger, 2002). However, an exploratory analysis of responses in this study showed that the negatively worded items loaded onto a separate factor. As a result, the analysis was carried out using the 10 positively worded items of the POS scale (Eisenberger, 2004). Items were rated on a 7-point Likert scale with anchors ranging from strongly disagree to strongly agree. A sample item from the scale was 'My organization cares about my opinions'. The 10 item scale had high reliability (0.9228).

Psychological well-being

PWB was measured by the 84-item version of the PWB scale developed by Ryff (1989). The PWB scale was comprised of six subscales that measure self-acceptance, purpose in life, environmental mastery, autonomy, personal growth, and positive relationships with others. In the case of the PWB scale it was also found that negatively worded items tended to form a separate factor. Since the reliability of the positively worded scale was high (0.9013), the analysis was carried out using the 44 positively worded items of the PWB scale. Items were rated on a 6-point Likert scale with anchors ranging from strongly disagree to strongly agree. A sample item from the Autonomy scale was 'I have confidence in my opinions, even if they are contrary to the general consensus.' Sample items from the other scales included – Environmental Mastery – 'In general, I feel I am in charge of the situation in which I live', Personal Growth – 'I think it is important to have new experiences that challenge how you think about yourself and the world', Positive Relations with Others – 'People would describe me as a giving person, willing to share my time with others', Purpose in Life – 'Some people wander aimlessly through life, but I am not one of them', and Self-Acceptance – 'I like most aspects of my personality'. Apart from the autonomy scale, all of the subscales of the PWB had adequate reliability (Table 3).

Organizational Commitment (AC, NC, HiSac, and LoAlt)

Employees' organizational commitment was assessed using the 18-item revised commitment scales developed by Meyer, Allen and Smith (1993). Affective, Continuance and Normative commitment were each represented by six items. For our study, continuance commitment was divided into high sacrifices and low alternatives, represented by 3 items each. Items were rated on a 7-point Likert-type scale with anchors ranging from strongly disagree to strongly agree. A sample item from the AC scale was 'I would be happy to spend the rest of my career in this organization.' A sample item from the CC scale was 'I feel I have too few options to consider leaving this organization'. A sample item from the NC scale was 'I do not feel any obligation to remain with my current employer'.

Table 1: Mean, standard deviation, scale reliability and zero order correlations among the variables under study

	Mean	Standard Deviation	POS	PWB	AC	NC	HISAC	LOALT
POS	4.99	1.17	0.9228					
PWB	4.85	0.47	0.322*	0.9013				
AC	5.65	1.86	0.581*	0.287*	0.8158			
NC	4.84	1.26	0.598*	0.210*	0.608*	0.8047		
HISAC	4.82	1.54	0.161*	0.013	0.218*	0.356*	0.7389	
LOALT	3.89	1.44	-0.119*	-0.213*	-0.066	0.052	0.365*	0.6088

*Correlation is significant at 0.01 level (2-tailed)

Analyses and Results

Table 1 presents the means, standard deviations, scale reliabilities, and intercorrelations (in bold along the diagonal) among the variables used in this study. Except for LoAlt, all the scales were found to have an internal consistency reliability (Cronbach alpha) greater than 0.70 ($N = 513$). Since the combined scale of CC had acceptable reliability of 0.718, the researchers decided to use the LoAlt scale, even though the reliability is slightly below the acceptable level. The reliability could be low due to the scale having only three items. The data was tested for normality and other assumptions of multivariate data analysis, and no deviations were found (Tabachnick & Fidell, 2001).

In order to test the hypotheses, the demographic variables of age, tenure and organizational level were controlled in the regression equation. A strong correlation was found between age and tenure indicating overlap. Since organizational tenure has been found to influence the link between POS and various components of organizational commitment (Mathieu & Zajac, 1990; Meyer et. al., 2002), it was decided to drop age and control only for tenure.

Controlling for organizational tenure and organizational level, POS was found to be significantly associated with PWB providing support for Hypothesis 1 (standardized $\beta = 0.316$, $t = 7.146$, $p < 0.01$). This suggests that employees look for both happiness and meaning in their work. Opportunities for growth and advancement are as important to employees as relations with other organizational members. Both tenure and organization level were found to have an insignificant impact on PWB ($\Delta R^2 = 0.001$, $F[1, 476] = 0.767$, $p > 0.1$), supporting earlier findings that demographic factors have been found to account for low levels of variance in the different well being indexes (Ryff & Keyes, 1995).

Hypothesis 2a, 3a, & 4b also garnered support. PWB was strongly related to AC (H2a, standardized $\beta = 0.286$, $t = 6.799$, $p < 0.01$), NC (H3a, standardized $\beta = 0.191$, $t = 4.459$, $p < 0.01$) and LoAlt (H4b, standardized $\beta = -0.206$, $t = -4.743$, $p < 0.01$). However, PWB was found to have an insignificant correlation with HiSac thus

rejecting hypothesis 4a (standardized $\beta = -0.011$, $t = -0.242$, $p > 0.5$).

Test for Mediation

PWB was expected to mediate the relationship between POS and AC (H2b), NC (H3b), HiSac (H5a) and LoAlt (H5b).

To test the above hypotheses, we used the general procedure for testing mediation outlined by Baron and Kenny (1986). This approach has been extensively used in previous research (e.g. McAllister & Bigley, 2002; Tepper & Taylor, 2003). According to Baron and Kenny, for mediation to exist, three conditions must be met. First, the independent variable (i.e., POS) must be shown to be related to the mediator (PWB). Results relevant to this were reported above (H1). POS was significantly related to PWB.

Next, it must be demonstrated that the independent variable is related to the outcome variables. Consistent with prior research, POS was found to be significantly associated with AC and NC (standardized $\beta = 0.560$, $t = 15.256$, $p < 0.01$; standardized $\beta = 0.548$, $t = 14.983$, $p < 0.01$) and moderately correlated with HiSac (standardized $\beta = 0.111$, $t = 2.454$, $p < 0.05$) and LoAlt (standardized $\beta = -0.139$, $t = -3.122$, $p < 0.05$). These results also support the replication of this reciprocal relationship in the Indian context.

Third, the mediator (PWB) must be related to the outcome variables. While PWB was found to be associated with AC (H3a), NC (H4a) and LoAlt (H6b), its association with Hi Sac was found to be insignificant ($\beta = -0.011$, $p > 0.5$). Thus, Hypothesis 6a could not be tested.

Lastly, if these conditions all hold in the predicted direction, then the effect of the independent variable on the dependent variable must be less in the third equation than in the second equation. Table 2 presents the results of mediated regression analysis.

Table 2: Results of Mediated Regression Analysis (N = 513)

Equation	Independent Variable	β of Mediator (PWB)	β of Dependent Variable	R ²
Hypothesis 3b Step 1	POS and AC		AC 0.560**	0.380
Step 2	POS and PWB	0.316**		0.101
Step 3	POS, PWB		0.519** 0.127*	0.395
Hypothesis 4b Step 1	POS and NC		NC 0.548**	0.383
Step 2	POS and PWB	0.316**		0.101
Step 3	POS PWB		0.540** 0.025	0.384
Hypothesis 6b Step 1	POS and LoAlt		LoAlt -0.139*	0.083
Step 2	POS and PWB	0.316**		0.101
Step 3	POS PWB		-0.082 -0.181**	0.113

* β significant at $p < 0.01$ level, ** β significant at $p < 0.001$ level

In addition to Baron and Kenny's (1986) test, the Sobel (1982) test reveals that the indirect effect of POS and AC via PWB ($Z = 5.07, p < .001$), POS and NC via PWB ($Z = 4.08, p < .001$), and POS and LoAlt via PWB ($Z = -4.13, p < .001$) were all significantly different from zero.

As Table 2 suggests, support was found for mediation for all three of the hypotheses. The effects of POS on AC and NC declined in magnitude from the effects in Step 1 (from $\beta = 0.560$ to $\beta = 0.519$ and from $\beta = 0.548$ to $\beta = 0.540$), after regression with the mediator indicating the presence of a mediation effect. The impact of POS on AC and NC remained significant despite introducing the mediator variable. These results indicate partial mediation.

While the effect of POS on NC declined in magnitude after introducing PWB in the equation, PWB itself became insignificant ($\beta = 0.025, p > 0.1$).

The effects of POS on LoAlt declined in magnitude from the effects in Step 1 (from $\beta = -0.139$ to $\beta = -0.082$), after regression with the mediator. This result indicates the presence of a mediation effect. Specifically, the results suggest that, due to the presence of the mediator, the magnitude of the effect of POS on LoAlt became insignificant ($\beta = .082, p > .10$), which suggests that PWB completely mediates this relationship.

Post Hoc Analysis

While PWB was explored as a single construct in this study, it was also decided that it would be worthwhile to explore the association of various dimensions of PWB with POS and OC. Since no theoretically-driven assumptions regarding the order of entry of the predictors was made, a *post hoc* analysis using stepwise regression was utilized (Koydemir & Demir, 2008). Table 3 shows the descriptive statistics for the various dimensions of psychological well-being. The possible range for all subscales was from 1 to 6. Table 4 presents the zero order correlations among the variables under study.

Table 3: Mean, standard deviation and scale reliability of dimensions of PWB

Variable	Mean	Standard Deviation	Scale Reliability
Positive relations with others (REL_O)	4.60	0.68	0.8134
Autonomy (AUT)	3.93	0.61	0.6756
Environmental mastery (ENV_M)	4.47	0.62	0.7717
Personal growth (PG)	4.92	0.58	0.7775
Purpose in life (PL)	4.73	0.61	0.7656
Self acceptance (SA)	4.37	0.65	0.7722

Table 4: Intercorrelations Among the Dimensions of PWB and Variables Under Study

	POS	AC	NC	HISAC	LOALT	REL_O	AUT	ENV_M	PG	PL
REL_O	0.246**	0.254**	0.168**	-0.48	-0.323**					
AUT	0.035	0.001	-0.076	-0.222**	-0.279**	0.394**				
ENV_M	0.301**	0.288**	0.196**	-0.029	-0.294**	0.616**	0.432**			
PG	0.171**	0.260**	0.117**	-0.097*	-0.324**	0.599**	0.403**	0.590**		
PL	0.292**	0.374**	0.231**	0.045	-0.292**	0.608**	0.339**	0.645**	0.698**	
SA	0.332**	0.347**	0.255*	-0.032	-0.348**	0.640**	0.458**	0.703**	0.617**	0.679**

** = $p < 0.01$, * = $p < 0.05$

Impact on Affective Commitment

AC was set as the criterion variable. The predictor variables used were PL, SA, ENV_M, PG and REL_O. Results indicated that purpose in life (standardized $\beta = 0.256$, $t = 4.618$, $p < 0.01$) and self acceptance (standardized $\beta = 0.173$, $t = 3.122$, $p < 0.05$) contributed significantly to the variance explained in AC. The R^2 was 0.156. Purpose in life accounted for the highest variance in AC (14%) followed by self-acceptance with a change in R^2 of 0.016.

As mentioned earlier, McGregor and Little (1998) found that the dimensions of PWB correlated strongly with two main factors of well being – one reflecting happiness and the other meaningfulness. Of these, purpose in life correlates with the meaningfulness factor, while self-acceptance correlates with the happiness factor.

These results provide support to the eudemonic perspective of well being. Our respondents regard the meaningfulness of the job as more important than happiness and reciprocate respectively. To further explore the relationship between individual and organization, POS was introduced into the stepwise regression equation. Along with POS (standardized $\beta = 0.491$, $t = 13.240$, $p < 0.01$), autonomy, which had insignificant zero order correlation, became a significant negative predictor of AC (standardized $\beta = -0.134$, $t = -3.414$, $p < 0.05$). Table 5 shows the variance in the model explained by each subsequent factor.

Table 5: Stepwise Regression using Affective Commitment as Criterion Variable

Model	Variables Entered	R^2	ΔR^2	Sig. F Change
1	POS	0.337	0.337	0.000
2	PL	0.383	0.046	0.000
3	AUT	0.393	0.010	0.005
4	SA	0.398	0.005	0.035

The negative relation of autonomy with AC raises concerns towards a general recommendation of increasing autonomy for employees. Without the attendant structures, culture, and norms in place, it is possible that autonomy is likely to make

people feel less confident in the organization. Given the unexpected results that emerged, it was decided to continue with the analysis using POS as one of the predictor variables.

Impact on Normative Commitment

NC was set as the criterion variable. The predictor variables used here were POS and the six dimensions of PWB. Results indicated that POS (standardized $\beta = 0.556$, $t = 14.892$, $p < 0.01$), autonomy (standardized $\beta = -0.161$, $t = -4.078$, $p < 0.01$), and self acceptance (standardized $\beta = 0.145$, $t = 3.447$, $p < 0.05$) contributed significantly to the variance explained in NC. The R^2 was 0.382. POS accounted for the highest variance in NC (35.8%), followed by autonomy with a change in R^2 of 0.09 and thereafter by self-acceptance with a change in R^2 of 0.014.

The significance of autonomy as a factor is again brought out in the inverse relationship it has with NC. It appears that presence of autonomy may actually reduce the sense of obligation or purpose that employees have towards their jobs. It is possible that autonomy may reduce the forces that bind individuals to their organization and individuals may become more committed to doing their jobs well. It would be interesting to explore the impact of autonomy on commitment to profession. The presence of self-acceptance again suggests that along with meaningfulness, employees also seek happiness in their jobs. While it is important to provide opportunities for growth and advancement to individuals, it is also important to ensure subjective well-being among the employees.

Impact on High Sacrifice

HiSac was next set as the criterion variable. The predictor variables used here were POS and the six dimensions of PWB. Results indicated that unlike AC and NC, autonomy was the strongest predictor of HiSac (standardized $\beta = -0.228$, $t = -5.366$, $p < 0.01$) followed by POS (standardized $\beta = 0.169$, $t = 3.966$, $p < 0.051$). The R^2 was 0.078. Autonomy accounted for the highest variance in high sacrifice (4.9%) followed by POS with a change in R^2 of 0.028.

This negative relationship between autonomy and high sacrifice needs to be interpreted with caution. While on the one hand, it may suggest that greater autonomy may reduce feelings of sacrifice and increase affective commitment; it could also mean that with greater feeling of autonomy, employees may become more self-centric and less organization-centric. They may become detached from the organization. It is suggested that future research is required to understand the impact of autonomy on organizational commitment.

Impact on Low Alternatives

LoAlt was next set as the criterion variable. The predictor variables used here were POS and the six dimensions of PWB. The results were again very different from the other components of OC. POS was removed from the equation and only three components of PWB were left. Self-acceptance (standardized $\beta = -0.195$, $t = -3.604$, $p < 0.01$), personal growth (standardized $\beta = -0.152$, $t = -2.880$, $p < 0.01$) and autonomy (standardized $\beta = -0.128$, $t = -2.753$, $p < 0.01$) contributed significantly to the variance

explained in LoAlt. The R^2 was 0.153. Self-acceptance accounted for the highest variance in LoAlt (12.1%) followed by personal growth with a change in R^2 of 0.019 and thereafter by autonomy with a change in R^2 of 0.013.

Employees with a higher sense of well-being may have higher perceptions of competence and control of the environment around them. This may reduce the feeling of entrapment and give them the confidence that if necessary, they will be able to find alternative employment elsewhere. The inverse relationship between the happiness dimension of SA suggests that happier employees are less likely to feel frustrated and trapped in the organization.

Discussion and Implications

The above results support the hypothesis that perceptions of organizational support influence the sense of well-being of employees. Extant research suggests that organizational contextual factors and responsiveness to members' needs influences an employee's belief about his or her value to the organization, thus impacting their self-esteem and contributing to their social psychological development (Frost, 1999; Korman, 1970; Pierce et al., 1993; Wicks et al., 1994). Organizational factors thus seem to contribute to employees' perceptions of self worth and sense of well-being.

Consistent with earlier studies (Eisenberger et al., 2001), in the present study too, POS were found to be strongly associated with AC. The mediation by PWB between POS and AC has implications for both the theory and practice of management. The study's results suggest that enhancing the 'well-being' quotient of an organization will increase the well-being of individuals working within the organization and lead to increased affective reactions towards work and ultimately influence important outcomes such as turnover and absenteeism. Therefore, organizations seeking AC from their employees would need to look for ways and means to increase the employees' sense of PWB.

PWB was found to be moderately associated with the NC of an individual. A sense of well-being in employees may influence their sense of obligation to an entity for beneficial actions towards them. An individual with a higher sense of well-being may be better able to respond to normative pressures to reciprocate to the organization. The results for test of mediation indicate a complex relation between PWB and POS where NC is concerned. This result suggests that the normative pressures on an individual become internalized to the extent that employees feel an obligation to respond to the organization, irrespective of their state of well-being.

Both POS and PWB were found to be negatively associated with the LoAlt component of CC. POS provides employees with perceptions of competence and makes them feel valued by the organization thereby increasing their sense of self worth (George et al., 1993). Employees with a higher sense of well-being may have higher perceptions of competence and control of the environment around them. This may reduce the feeling of entrapment and give them the confidence that if needed, they will be able to find alternative employment elsewhere. If an employee is low on PWB, supportive actions from the organization may not help in reducing his/her feeling of entrapment.

Total mediation by PWB between POS and LoAlt suggests that there may be some employees for whom organizational interventions may not provide the desired results. For instance, a study by Ryff and Heidrich (1997) suggests that difficult life experiences contribute to positive psychological functioning and provide an individual with a sense of competence and mastery. However, persons low on well-being may not view challenges thrown at them by the organization as a reflection of organization's confidence in their abilities or as opportunities to grow and advance. These challenges may be perceived as barriers that reinforce lack of competence perceptions or lack of control for the employees. Such employees may feel trapped and tied down by the organization, despite opportunities provided by the organization to perform. In such cases, psychiatric help and counseling may be required for the employees before they can be brought back into the organizational mainstream. Such counseling has been found to increase the individual's sense of well-being (Ryff & Singer, 2002).

The results of stepwise regression support the Indian perspective of importance of meaningfulness over happiness (Saklani, 2004). AC, NC and HiSac were far more impacted by the meaningfulness dimensions of PWB, such as purpose in life and autonomy, than by happiness. Only in the case of LoAlt did happiness take precedence over meaningfulness.

The percent variance explained by each of the dimensions of well-being in the various foci of commitment is small (19% in AC, 12.7% in NC, and 8% in CC) and may possibly have been inflated by the fact that both measures were based on self-report. This is especially true given that most studies (Dormann & Zapf, 2001; Meyer et al., 2002) have found that individual characteristics explain small but significant variance in attitudes such as commitment, satisfaction, etc. These results add to the current literature on impact of individual characteristics on job attitudes.

Conclusion

While sharing the limitations characteristic of any cross sectional research, this study contributes to the field of organizational research by demonstrating the importance of studying individual variables in the organizational context. Earlier studies have explored the relationship between commitment and hedonic well-being (Harris & Cameron, 2005; Meyer & Allen, 1997). They have also proposed and found support for committed employees being more satisfied with life and with themselves. The current study brings in the eudaimonic perspective of psychological well-being and demonstrates its impact on commitment. The results also help to explain the underlying psychological processes linking POS and OC. They help to understand why some employees may need a minimal show of support from the organization to increase their commitment whereas for other employees, considerable effort may be required to influence their attitude towards the organization. The study shows that organizations need to target their support efforts judiciously in order to influence employee commitment to the organization.

While AC, NC and HiSac were far more impacted by the meaningfulness dimensions of PWB, LoAlt was more impacted by the happiness dimension of self-acceptance. Since AC has a greater impact on workplace attitudes and behaviors (Meyer

et. al., 2002), it is more important for organizations to provide meaning to the work that employees do. Lastly, given the negative relation of autonomy with all four components of commitment it is suggested that this issue be explored in greater detail to gain an increased understanding of the level to which autonomy provides meaning to an employee's job.

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Intellectual Property Exchange Between Two Partner Companies – Application of the Theory of Constraints Thinking Processes

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The problem of implementing a database for intellectual property sharing in a two company alliance is examined utilizing the Theory of Constraints Thinking Processes. The implementation of this database is required for new product development. Database implementation is hampered by internal policies, cost considerations, and strategic misalignment. A cause-effect analysis employing the Current Reality, Evaporating Cloud, Future Reality and Prerequisite techniques allows resolution of the conflict, resulting in a win-win solution and feasible implementation plan. This application of the Theory of Constraints Thinking Processes provides an excellent example for practitioners, academics and educators to examine the methodology and analyze its strengths.

The Theory of Constraints (TOC) began development with the introduction of Optimal Production Technology (OPT) scheduling and control computer software in the late 1970s (Lockamy & Spencer, 1998). Although TOC began as a production philosophy, it has evolved into three interrelated areas: logistics, problem solving, and performance measurement (Spencer & Cox, 1995). The problem solving techniques utilized in TOC, the Thinking Processes (TP), were introduced by Goldratt in 1990 and expanded in 1994 (Goldratt, 1990, 1994). The purpose of these techniques is to answer three simple, yet powerful, questions: (1) what to change; (2) what to change to; and (3) how to cause this change (Scheinkopf, 1999).

To answer the question of what to change, the TP use an effect-cause-effect diagram called the Current Reality Tree (CRT) to identify core problems that result in the current undesirable system outcomes. To address the question of what to change to, the TP utilize two techniques: the Evaporating Cloud and the Future Reality Tree. The Evaporating Cloud (EC) identifies prerequisite relationships between objectives and actions to expose what Senge (1990) calls mental models; the assumptions that underlie our perceptions and actions, to expose faulty logic allowing conflicts to be resolved in a win-win manner. The Future Reality Tree (FRT) is an effect-cause-effect diagram used to analyze the solution determined by use of the EC to test this solution and to predict potential problems within the system that may occur from its implementation. The Prerequisite Tree (PRT) and Transition Tree (TT) are then utilized to plan for and control the implementation of the solution.

The Thinking Processes have been successfully utilized and expanded over the last decade to address general managerial problems (Hsu & Sun, 2005; Schragenheim & Pascal, 2005; Shoemaker & Reid, 2006; Walker & Cox, 2006), as well as to solve very specific issues in business strategy and competitiveness (Gupta et al., 2004; Polito et al., 2006; Taylor & Ortega, 2004;), improvements in manufacturing and supply chain (Cox et al., 1998; Ehie & Sheu, 2005; Gattiker & Boyd, 1990; Rahman 2002; Umble et al., 2006), business finance (Taylor & Churchwell, 2003, 2004; Taylor & Thomas, 2008), government (Schoemaker & Reid, 2005), human resource development (Cox et al., 2005) and service management (Breen et al., 2002; Reid & Cornier, 2003). They were also applied to education (Cooper & Loe, 2000; Musa et al., 2005; Sirias, 2002). The variety of applications shows that the methodology is embraced by both academics and practitioners across many fields. A comprehensive review of the literature is provided by Kim et al. (2008), which also encourages further research work and publication of practical implementation cases to further solidify the available know-how about this methodology in academic and practitioner literatures.

Encouraged by Kim's work (2008), the present study utilizes the TP as originally discussed by Scheinkopf (1999) to identify and address policy constraints encountered during the development of a shared information database for the dissemination of intellectual property between two technology companies. This business situation clearly showcases the strengths of the TP, as they allow a step-wise detangling of core problem drivers, perceived positions, and underlying assumptions, resulting in a simple and practical solution to a problem that otherwise would have been moved to a critical top management escalation level.

As practitioners in all fields of business constantly face problem scenarios that involve facts, opinions, perceptions and other mental models, this paper hopes to further encourage the use of the Thinking Processes by exemplifying their logic and effectiveness, and to add another example to the academic literature. Additionally, educators may find this case to be a useful tool for teaching the TOC TP.

The Case

Companies A and B are technology manufacturing companies, with headquarters in Europe and Asia. These companies have formed a joint technology development

alliance (JTDA) with the physical location of the alliance engineering team at Company B in Asia. The objective of the team is the development of a certain technology from which a range of new products will be developed, manufactured, and marketed by both. Company B is also contracted by company A as an outsourced manufacturer and serves additional companies in a similar capacity. The technology developed by the JTDA will be utilized in production by both Company B to serve Company A and others. However, Company A also keeps some in-house manufacturing facilities located in Europe where it will also implement this new technology.

During the development, a significant amount of intellectual property (IP) is generated, describing the technology and its underlying features. This IP is the prerequisite for developing new products and implementing manufacturing processes. With the recent joint development agreement, it is necessary to provide an IP management system to collect and exchange IP within the engineering team and to distribute to both companies' manufacturing facilities (the technology development does not take place within a productive plant). Additionally, there is a constant feedback loop between technology, product and manufacturing development of both companies to ensure that the underlying technology supports planned products and is manufacturable. Access to the development information by the respective departments of companies A and B and the ability to provide feedback is therefore crucial for a successful development.

Some of the IP is well-documented (i.e. available as *explicit knowledge*). However, a large part is the knowledge and experience of the individual engineers that are employed by either of the two companies (*tacit knowledge*). Explicit knowledge captured in official documents can be exchanged through contractual documentation procedures. To tap into the *tacit knowledge*, it is common practice to utilize databases of varying sophistication that allow functions from simple information sharing to discussion between team members and specialists.

As the JTDA operates in the facilities of Company B, such a database must be consistent with Company B's information technology infrastructure. Both companies have already adopted separate commercial software systems with database and communication solutions, and these are the only packages supported by each company's internal Information Technology (IT) groups. Therefore, the IT policies of both companies limit the possibilities to identify and adopt a software system for knowledge sharing that is supported by both firms.

With the two companies working on the implementation of a joint technology development team, a significant effort in analyzing and understanding each other's work environments, procedures, and attitudes is required. Both companies view the JTDA as key to future success so there is great interest to make all steps of the team build-up smooth. However, the competition that exists between both companies with regards to manufacturing capabilities and products makes integration complex. Although Company A contractually secured usage of the jointly developed technology to manufacture in its own facilities, Company B wants to keep the outsourced manufacturing of future products of Company A. Hence, Company B has a weak incentive to support a software system which can easily be used by Company A to transfer IP back into its own environment. Company A, on the other hand, views the

timing of the database implementation as critical, as the development work started without having the appropriate IP management infrastructure in place, thereby inhibiting communication, knowledge exchange and feedback loops between the JTDA and the parent company. Figures 1 and 2 provide schematics of this situation, from the viewpoint of Company A and Company B.

Although it seems from the onset of the alliance that implementation of a database should be a minor issue to start IP sharing, the complexity of the decision-making environment warrants a careful analysis of all details within both companies, as well as of their mutual interfacing.

The Thinking Processes of the Theory of Constraints were found to provide an excellent tool set to accomplish this challenging task. The following sections describe the successful application of the Current Reality Tree, Evaporating Cloud, Future Reality Tree and Prerequisite Tree to this problem. The results of this analysis make it possible to establish a clear implementation path for a mutually agreed-upon knowledge management system. The analysis is performed by a member of Company A's project management team working on tactical aspects of JTDA implementation and takes on the perspective of Company A during the implementation phase. The objective is to overcome the lack of an IP sharing mechanism on a tactical level while still being within the strategic environment of both companies.

Analysis of the Theory of Constraint Thinking Processes

Current Reality Tree

The Current Reality Tree (CRT) is used to describe and define the momentary situation of the system in a cause-effect relationship. The objective of the tool is to find an answer to the question: "What to change?" in order to determine the core problem and core drivers of the system. The purpose here is to identify why IP sharing within JTDA, as well as between JTDA and companies A and B, is not immediately taking place. The system of each company's product development and manufacturing environments includes the available IT infrastructure, technical requirements as well as policies. As explained above, both Company A and B have legacy database systems in place. Figure 1 shows that Company A wishes unhindered IP flow between all entities, whereas Figure 2 depicts the reluctance of Company B to enable free IP flow to Company A.

Figure 1: Schematic View of the System, Viewpoint of Company A

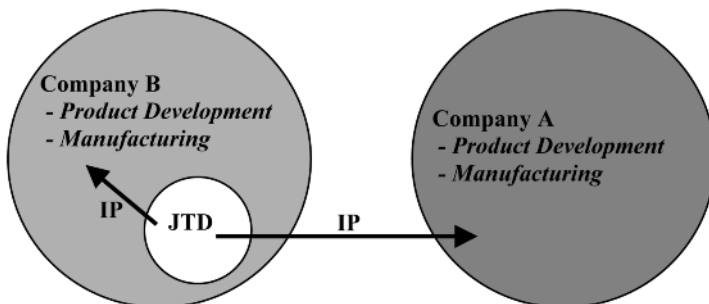


Figure 2: Schematic View of the System, Viewpoint Company B

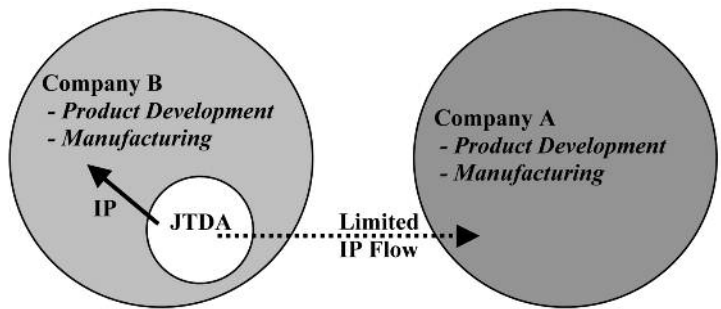
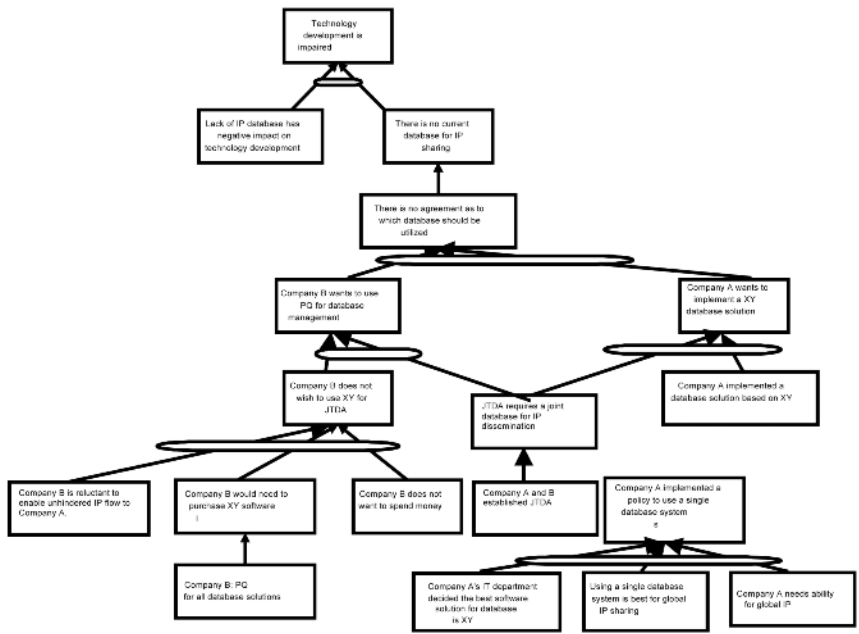


Figure 3 depicts the CRT. Arrows connect causes to effects, with ovals symbolizing where more than one cause comes together resulting in one effect. The right side of the diagram focuses on Company A, beginning at the bottom. Company A is currently engaged in operations on a global basis, requiring equally global IP exchange. IT management considered it most efficient to use one database system across the company and determined that software solution XY fulfills all requirements best. Therefore, a policy was implemented; defining that software XY is to be used at all locations to facilitate and standardize information and IP flow. Although the JTDA is not operating at a location of Company A, the dissemination of IP from the JTDA to various departments within Company A is considered to fall under this policy. Therefore, Company A wants the JTDA to utilize XY software for the needed IP transfer database.

Figure 3: Current Reality Tree



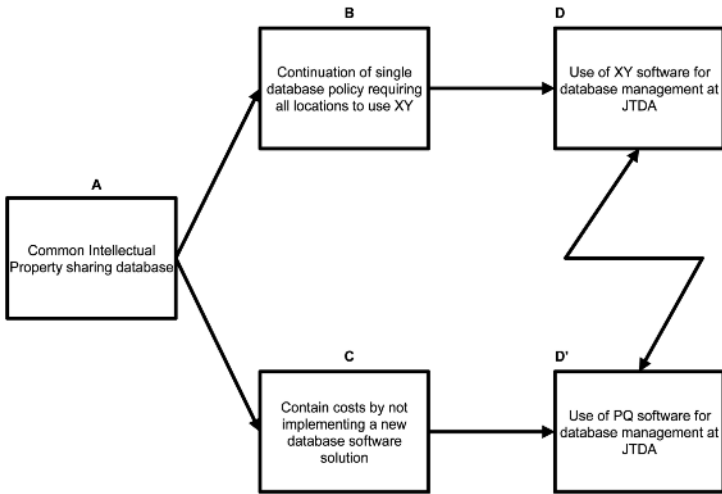
The other side of the diagram depicts the situation of Company B, who utilizes a different software solution (PQ) for database management and would have to acquire software XY. As Company B does not wish to incur additional expenses for software and support of XY based databases, and as it has fewer incentives than Company A to implement an easily exchangeable database, Company B would like the JTDA to implement PQ for database management. Thus, there is no agreement between the companies pertaining to the type of database that will be established. The absence of IP sharing, however, impairs the successful development work of the JTDA, as critical feedback loops to manufacturing and product development are missing.

Analyzing this situation with the CRT, therefore allowed for a clear determination of the core problem for the lack of IP sharing between JTDA and Companies A and B: the inability to agree to a common database solution. The strength of the CRT tool lies in its capability to determine the core drivers that result in the entrenched positions taken by both companies. Company A is constrained by its internal policy to use the XY software package. Company B is constrained by cost containment considerations and strategic motivations. In the next step, the Evaporating Cloud technique is utilized to uncover potential solutions to these (perceivably mutually exclusive) positions that could result in a win-win outcome for both companies.

Evaporating Cloud

The Evaporating Cloud (EC) is constructed using the following logical connections: A common objective is defined, which is derived as being the opposite of the core problem (as identified by the CRT). Then the prerequisites required by both parties to accomplish the common goal are listed. Lastly, these prerequisites are connected to the underlying “wants” of each party.

First, the opposite of the core problem is defined: “lack of IP sharing database” thus becomes “common intellectual property sharing database” and is placed in box A in Figure 4. Once this common objective is established, each company’s prerequisites for achieving it are placed in boxes B and C, respectively. In this case, the prerequisite for Company A (box B in Figure 4) is the continuation of a single database policy requiring all locations to use XY. The prerequisite for Company B (box C in Figure 4) is to contain costs by not implementing new database software. The strategic motivation of Company B to gain future manufacturing contracts from Company A - realized through the reluctance to support easy IP flow (see Figure 2) is considered to be an element of the strategic environment in which this analysis was performed. This allows identification of the causes (wants) for the present positions for both companies: Company A wishes to use XY software (box D in Figure 4) while Company B wishes to use PQ software (box D’ in figure 4). The EQ now clearly represents the reasons why the common goal cannot be accomplished. It also structures complex situations in three simple categories: namely the common goal, the parties’ prerequisites, and how each plans to accomplish these and the common goal. A pair of mutually exclusive positions, at first site, is now stated, denuded of all overlying arguments.

Figure 4: *Evaporating Cloud Diagram*

Depicting the problem in such a precise manner now allows the builder to uncover assumptions and to validate the truth and applicability of the underlying arguments. Such assumptions are discovered by stating the argument in the following manner: “In order to achieve (prerequisite), I must have (want) because...(assumption).” For example, for Company A, the sentence reads: “In order to achieve a single database policy, we want the JTDA to use XY software, because....”

As box D and D' create the conflict, the assumption underlying the conflict is that they are mutually exclusive. Once the assumptions underlying the conflict are surfaced, flaws in the logic are determined to overcome the faulty assumptions by using so-called injections (solutions) that “break” the assumption. The injections are then analyzed to determine the one with highest potential for implementation.

Among the assumptions identified within the argument, four were flagged for further evaluation and are summarized in Table 1, together with injections and their evaluation of potential for implementation. Figure 5 depicts the revised EQ including the assumptions and which connectors they appear to support.

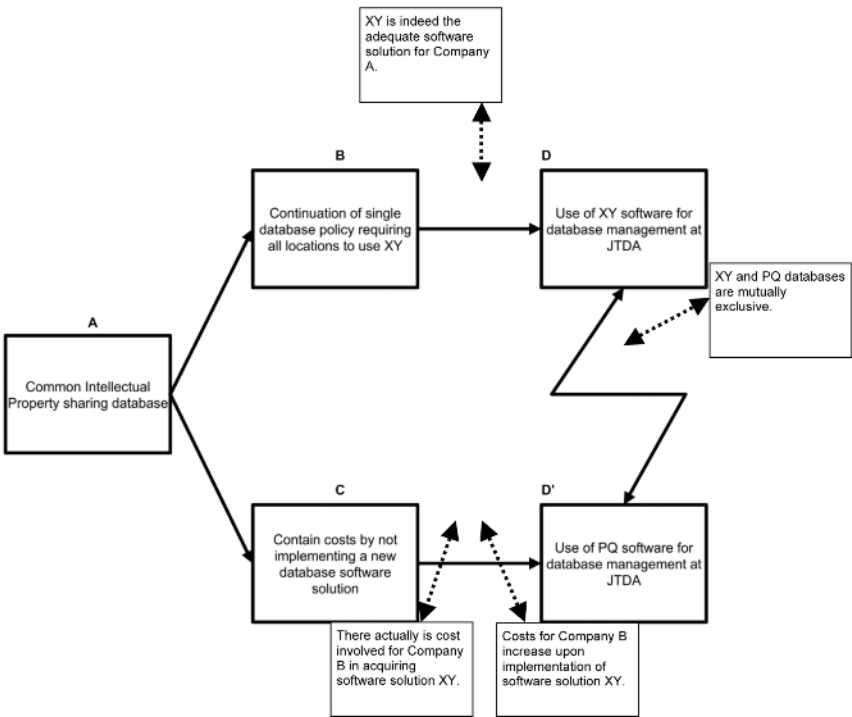
The first assumption, identified between C and D', is that there are actual costs associated with the implementation of new database software by Company B. The injection that breaks this assumption is the development of a cost sharing model between the two companies. This is a practical injection, and Company A's management indicated agreement.

The second assumption identified is also along the C-D' axis: the cost of purchasing and maintaining the XY software package increases costs for Company B. However, if it is possible to find efficiency benefits for B to use the software proposed by A, a win-win situation can be created. There is, however, the risk that a lot of time is spent without convincing Company B. Hence, while this injection is possible, it has some uncertainty.

Table 1: Assumptions identified using the EC tool, injections and assessment of feasibility

Entities connected by Assumption	Assumption	Injection	Feasibility
C and D'	There actually is cost involved for Company B in acquiring software solution XY.	Cost sharing Model between both companies.	Management of company A is willing to consider this solution.
C and D'	Costs for Company B increase upon implementation of software solution XY.	Find efficiencies for Company B when implementing software solution XY.	Uncertainty that Company B can be convinced.
B and D	XY is indeed the adequate software solution for Company A.	Evaluate if software solution PQ fits requirements and provides additional benefits for Company A.	Time-consuming review process might not result in actual adoption of PQ. Possible internal resistance.
D and D'	XY and PQ databases are mutually exclusive.	Ability to replicate PQ database into XY database.	Fulfills prerequisites of both companies. IT resources need to be confirmed.

Figure 5: Revised Evaporating Cloud including uncovered underlying assumptions



The third assumption along the B-D axis is that XY software is the correct database solution for Company A. The injection that may cause this assumption to be invalidated is to review A's database requirements (features, functions) and compare with B's solution. If PQ software offers greater benefits than XY, adoption of PQ by Company A renders the conflict moot. Again, this injection may result in a loss of time for implementing a common database at JTDA, as a review of the software packages may not identify benefits to Company A. Furthermore, it is complicated by political resistance against a change of a recently implemented global IT policy within Company A.

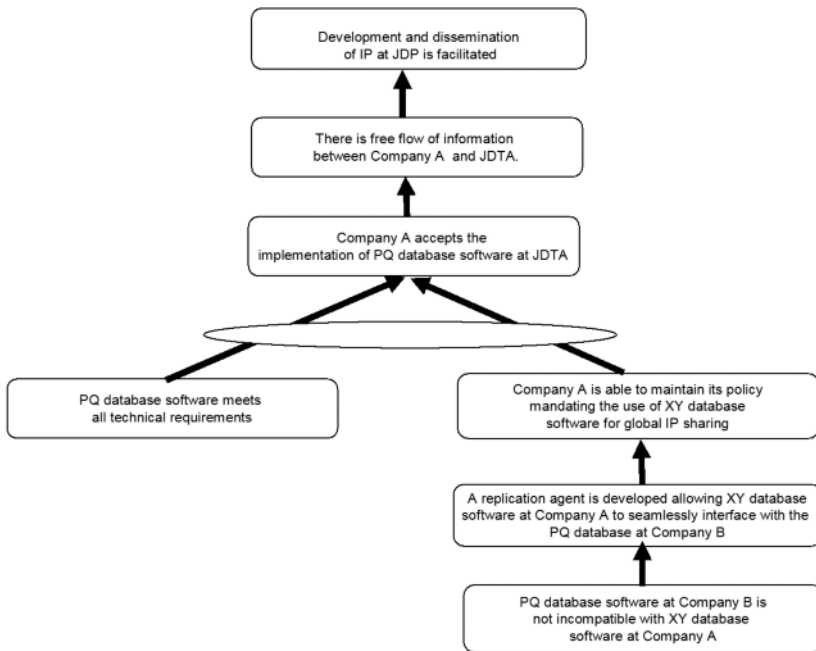
The fourth and final assumption is that the PQ and XY software are mutually exclusive. This assumption can be invalidated if the software packages are not mutually exclusive. It seems surprising that this aspect was not investigated from the beginning. However, as JTDA negotiations took place at a managerial level, IT personnel was not involved. Once IT specialists were included in the discussion, it was quickly discovered that a replication agent can be programmed to function as an interface between PQ and XY. This injection is obviously the most practical as it addresses Company B's preference, while keeping Company A's internal policy in place.

To summarize, the EC provides a feasible and practical injection to overcome the disagreement on which database software packages to utilize for IP sharing between the two companies and JTDA. This conflict initially resulted from the core drivers of an internal IT policy constraint (Company A) and cost considerations (Company B), and the perception that these drivers create a problem that cannot be overcome without significant compromise on either one of the sides. The injection chosen allows both companies' prerequisites to be achieved, and the presumably unsolvable core problem and mutually exclusive positions are "evaporated"!

Future Reality Tree

The FRT, as shown in Figure 6, is constructed next to depict the cause-and-effect relationships of the solution found in the previous step and also to answer the question "What to change to?", as well as to identify possible unwanted consequences. The base of this tree is the injection (solution) from the EC – namely, that the software packages are not mutually exclusive. A replication agent is developed at Company A, which allows the firm to replicate databases from PQ to XY and to maintain its IT policy. As Company B's PQ database system fulfills all requirements, Company A accepts the use of this system at the JTDA, and the free flow of IP can finally start. The initial problem statement from the CRT is thereby solved. Now each step of the FRT is tested to identify any potential negative consequences. Two are discovered: First, the injection, (i.e. development of a replication agent), requires resources from Company A's IT group that are not planned for. Second, keeping Company B's strategic reluctance for information sharing in mind, other obstacles to hinder information flow should be anticipated. The latter requires management of Company A to review the relationship-building process, a question that is outside the scope of this paper.

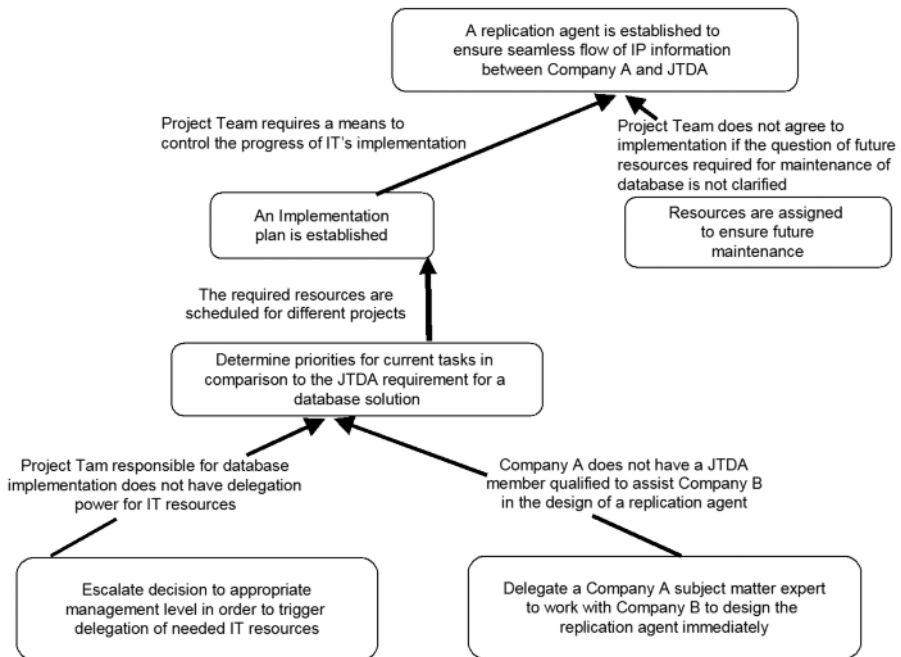
The Prerequisite Tree (PRT) is used next to address the uncovered consequence of IT resources at Company A.

Figure 6: Future Reality Tree

Prerequisite Tree

This tool finally allows for the clarification of the detailed actions required at Company A to reach the objective of the FRT, hence answering the question of “How to cause the change?” The result is depicted in Figure 7. This step is particularly crucial as it also allows uncovering potential further consequences of the attempted solution. The graph needs to be read in the following manner, starting at the bottom left: As the project team that decided on the implementation of the replication agent does not have power over IT resources, an escalation to a higher management level is needed. Also, as none of the JTDA members are qualified to support the programming effort, Company A needs to delegate a subject matter expert to this task. Together, these two actions result in determining resource priorities. As all resources are currently scheduled for other projects, an implementation plan is created that re-assigns project priorities, tasks, and experts. The project team requires control over the implementation as well as assurance of future resources, and the implementation plan together with future resource assignments results in the successful implementation of the replication agent. The last tool of the TP is the Transition Tree, that spells out more details of the change process. The tool was not used, as the project team handed over responsibilities to IT.

Figure 7: Prerequisite Tree



Coda

Looking at the successful application of the TP, the question remains whether at the end, IP flow between the JTDA and Company A is taking place at a satisfactory level.

The story evolved as follows: The technical obstacles were indeed overcome, enabling database replications into Company A's XY systems. However, and as suspected, this did not guarantee the attempted information flow, as Company B inhibited it by other means. For example, by not adding the required information to the database, by using native language not understood by the majority of Company A's JTDA members, and by significantly restricting the access of the latter to critical technology know-how within the alliance. The lesson learned is that the TOC TP enabled the project team to solve the issue of hindered IP flow on the tactical level. However, it was outside of the scope of this team to address the underlying strategic misalignment of the two firms. Forming successful alliances requires managerial effort in trust and relationship building, which may not have taken place sufficiently. The respective management levels probably would have been well-served conducting their own analysis of why the approach to the alliance was different between Company A and B, and using the TP tools would have allowed uncovering underlying assumptions and strategic misfits. Without this being done, it is no surprise that the development alliance was dissolved ahead of contractual agreements.

Conclusions

The objective of the presented analysis is to describe how two firms, A and B, can agree on the implementation of a database for a common JTDA team. Company A's specific requirement is that the information stored in the JTDA database can be utilized within A though JTDA is physically located at Company B. Company A is additionally constrained by an internal policy to use a single database software solution (XY). Company B, which does not have XY software, is driven by factors of cost and practicability and therefore wants to use PQ database software. At first, the situation looks like a conflict of mutually exclusive positions without promising solutions.

The Thinking Processes of TOC allow a detailed analysis of the system and provide a practical solution to the perceived dilemma. The development of a Current Reality Tree, which determines what in the system needs to be changed, determines a core driver to the conflict. Using the tool Evaporating Cloud, the core driver is subjected to a conflict resolution process. This process provides a solution to the problem, eliminating the core driver, and making the conflict moot.

The benefit of the EC is that it allows the complexity of the system, in which an agreement must be reached to be simplified and broken down into discrete units for investigation. This allows the Thinking Process techniques to disclose assumptions of varying credibility. As such, it is a very efficient way to establish perceived cause-effect relationships, to unveil political issues or to stop hidden personal agendas, which are all common in any type of organization. To give an example: in the case presented in this paper, the discussions leading to the construction of the Evaporating Cloud brought to the surface that the two software solutions currently used by Company A and B, respectively, are actually compatible, and not mutually exclusive as initially assumed. Therefore, the responsible specialists at Company A determined that a database programmed in B's software can be replicated into the existing database at Company A. In the following, the use of the Future Reality and Prerequisite Tree allows a clear implementation plan to be developed that also uncovers and addresses the obstacle of IT resource constraints resulting at Company A.

Starting from a conflict situation with no visible solution or compromise, the analysis is able to untangle arguments and opinions, point to a route cause and from there, on to a practical solution. Application of the Thinking Processes of TOC proves to be an immensely effective way to overcome one of the many problems companies A and B are facing during the build-up of the JTDA.

This paper showcases the effectiveness and straight forward analytical strength of the TPs for change management. Although the methodology is purely qualitative, it allows decomposition of a complex situation through the logic of cause-effect analysis. Many other decision-making methods call for a quantitative approach. Examples of combinations of the TPs with such models are reported in the academic literature (Kim et al., 2008). However, as an important advantage, the qualitative nature of the TPs allows their use without major training or potentially time-consuming development of metrics. The case presented in this paper hopes to encourage practitioners to use TOC TPs', academics to further explore their use, and educators to include them in courses on change management or decision-making theory.

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The Effect of Followers' Behavior on Leader Efficacy

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This study tested the effect of followers' behavior on a leader's self-efficacy to lead (leader efficacy). A paired sample T-test and independent sample T-tests were conducted on data collected from 121 MBA students at four different universities in the United States. The results showed that leader efficacy was affected by follower behaviors. The more positive follower behaviors were, the more respondents indicated they would experience an increase in leader efficacy. The more follower behaviors were negative, the more respondents indicated they would experience a decrease in leader efficacy. Moreover, ethnic and gender backgrounds moderated the relationship between follower behaviors and leader efficacy. Specifically, negative follower feedback affected the leader efficacy of Hispanic leaders less than Caucasian leaders. Negative follower feedback also affected the leader efficacy of male leaders less than that of female leaders. In contrast to our predictions, positive follower feedback resulted in no significant differences in leader efficacy between male leaders and female leaders, or between Hispanic leaders and Caucasian leaders. The findings of this study provide evidence of a type of upward influence that has rarely been studied and may have implications for developing competent leaders, building positive leader-follower relationships, and promoting leadership diversity.

Leadership scholars have traditionally focused on a unilateral leader-follower relationship emphasizing the influence of leaders over followers, with a few notable exceptions (e.g. Herold, 1977; Hollander, 1978; Mowday, 1978, 1979; Porter, Allen & Angle, 1981; Wortman & Linsenmeier, 1977). More recently, an increasing number of studies have redirected their research attention toward the upward influence of followers on leaders, explaining upward influence from several different perspectives. For example, Atwater (1988) found that subordinates' trust and loyalty to their leaders induce more supportive leader behaviors. Deluga and Perry (1991) found that subordinates' performance and ingratiation behaviors improve the leader member exchange quality. Dvir and Shamir (2003) examined the influence of follower developmental characteristics on leadership style. Kipnis, Schmidt and Wilkinson (1980) identified some tactics used by subordinates to influence their bosses. Finally, certain other studies addressed factors that predict followers' persistence at upward influence attempts (Maslyn, Farmer & Fedor, 1996; Schilit & Locke, 1982).

An examination of the studies on upward influence reveals that most of them focus on follower influence on leader behavior and attitudes. Few studies address the relationship between follower behavior and leader traits such as self-efficacy to lead or how influence from followers affects a leader's self-efficacy to lead (leader efficacy). Recent work by Hannah et al. (2008) on leader efficacy proposed a model of bidirectional relationships among leader efficacy, follower efficacy, and collective efficacy. However, little discussion was dedicated to the mechanism through which follower's affect leader efficacy.

The topic of self-efficacy is important because studies consistently demonstrate that self-efficacy in performing certain activities correlates with motivation and effort levels in the activity and eventually the outcome of an action (Bandura, 1997). From a leadership perspective, leader efficacy has a significant impact on the focus of a leader's attention, risk taking tendency, goal setting and choice of influence tactics, all of which eventually lead to different group outcomes (Bandura, 1997; Chemers, Watson & May, 2000; Hollenbeck & Hall, 2004; Luthans & Peterson, 2002; Wood & Bandura, 1989). A leader's efficacy level has widely been considered to be one of the traits that distinguishes a leader from a non-leader and an effective leader from an ineffective leader (Hollenbeck & Hall, 2004; Kolb, 1999; Luthans, 2002). Self-efficacy is an important mechanism of the social learning process (Bandura & Cervone, 1983), through which individuals learn behaviors through cues from the environment (Bandura, 1997). Followers make up a large portion of a leader's social environment. The effect of behavioral cues from followers in response to a leader's behavior may be a significant influential force on leader efficacy.

Having recognized the importance of research on followers' impact on leader efficacy, Hannah et al. (2008) called for empirical studies on the topic. In response to that call, the goal of this study is to examine the effect of followers' behavior on leader efficacy. The interaction between leaders and followers varies by gender and among populations with different cultural backgrounds (Antonakis, Avolio & Sivasubramaniam, 2003; Collinson, 2005; Eagly, 2005; Hofstede, 1984; Kets De Vries, Vrignaud & Florent-Treacy, 2004; Kolb, 1999; Mohr & Wolfram, 2007; Rosener, 1990). Therefore, this study will examine how the relationship between followers'

behaviors and leader efficacy is affected by gender and ethnicity.

Hypotheses Development

Leader Efficacy

Perceived self-efficacy is defined as “beliefs in one’s capabilities to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3). People who believe they have the ability to successfully lead others can be said to possess high leader efficacy (Chan & Drasgow, 2001; Hannah et al., 2008; Paglis & Green, 2002). Bandura (1997) recognized four sources of self-efficacy: enactive mastery, vicarious experience, social persuasion, and physiological and affective state. Social persuasion is the influence exerted upon individuals by means of verbal comments or behavioral cues. It provides a person with an opportunity to observe his/her own performance or ability through the eyes of others. Mellor et al. (2006) found that leader efficacy is related to encouragement and persuasion from others.

The effectiveness of the social persuasion process depends to a large degree on the expertise and credibility of the sources of the persuasion (Bandura, 1997). Although followers in most cases do not have more expertise than a leader in the latter’s task domain, they are one of the most credible sources of social persuasion about their leader’s competence. They help define the roles of follower and leader. By accepting or rejecting a leader’s influence, they transmit a strong message to the leader about his or her authority (Hollander, 1978) as well as his or her competence as a leader.

Positive verbal comments, as well as compliance and cooperative behaviors from followers, confirm the leader’s role as a leader and the followers’ role as followers. When these positive verbal or behavioral cues are sensed, leader efficacy improves. On the other hand, when negative attitudes of followers are conveyed by negative comments or non-compliant behaviors and those attitudes are sensed by a leader, leader efficacy will likely falter. These arguments suggest the following hypothesis:

Hypothesis 1: Leader efficacy will be higher when follower feedback is perceived as being positive and lower when follower feedback is perceived as being negative.

Cultural Factors

As previously mentioned, the interaction between leaders and followers is affected by gender and cultural factors (e.g. Collinson, 2005; Hofstede, 1984; Kolb, 1999). Hofstede (1984) identified four cultural dimensions based on the result of a series of surveys administered to tens of thousands of respondents worldwide: individualism versus collectivism; power distance; uncertainty avoidance, and masculinity versus femininity. Among the four cultural dimensions, the dimension that is directly related to the leader and follower relationship is power distance (Cohen, Pant & Sharp, 1995).

According to Hofstede (1984), “the power distance between a leader (B) and a subordinate (S) in a hierarchy was described as the difference between the extent to which B can determine the behavior of S and the extent to which S can determine the behavior of B” (p. 72). In a high power distance culture, people more readily accept an unequal distribution of power. They believe leaders and followers are fundamentally

different and people with power have the right to enjoy privilege. They believe that power itself precedes good or evil and its legitimacy is irrelevant (Hofstede, 1984). In contrast, in a low power distance culture, people believe inequality in society should be minimized. They view leaders and followers as essentially the same and believe they should have equal rights. From their point of view, the use of power should be legitimate and subject to the judgment between good and evil (Hofstede, 1984). Hofstede's (1984) description of the difference between high power distance cultures and low power distance cultures implies that followers' opinions will be valued more in a low-power distance culture than in a high power distance culture. Consequently, a leader's behavior should be more affected by a follower's behavior in a low-power distance culture than in a high-power distance culture as followers' opinions of leader competency, expressed through their words and behaviors, are valued more by leaders in low-power distance cultures. As a result, followers in low-power distance cultures are likely to have a larger impact on leader efficacy.

Hofstede's (1984) data showed that Mexican culture, as well as the cultures of countries in Latin America and South America, were extremely high in power distance, whereas U.S. and European cultures were relatively low in power distance (Hofstede, 1984). Considering that the family background of a majority of the Hispanic population living in the U.S. has roots in Mexico and other Latin American countries, it can be estimated that the U.S. Hispanic population, particularly in the U.S. Mexico border region, has maintained many elements of Hispanic culture as well as cultural connections to Mexico and the rest of Latin America. Consequently, Hispanic populations living in the U.S. may be higher in power distance than Non-Hispanics living in the U.S. Based on the above arguments, we hypothesize:

Hypothesis 2: The relationship between leader efficacy and follower feedback will be affected by the leader's ethnic background, such that Hispanic leaders will experience less of a change in leader efficacy than Caucasian leaders when receiving positive or negative follower feedback.

Gender

There has been a great deal of discussion regarding the effect of gender roles on leadership effectiveness. Gender roles refer to the shared societal expectations of behaviors by males versus females regarding communion and agency (Eagly, 1987). Communion refers to the motivation behind behaviors such as forming social relationships, getting along with others, and maintaining harmony and affiliation. Agency involves the motivation to pursue power and control over others; and emphasizes assertiveness, self-efficacy, and mastery (Bakan, 1966). Social role theory (Eagly, 1987) argues that women tend to carry the communal role, whereas men tend to carry the agentic role. Multiple studies have found that female leaders are more likely to demonstrate democratic, supportive, and gentle behaviors, whereas male leaders are more likely to demonstrate assertive, controlling and confident behaviors (Antonakis et al., 2003; Collinson, 2005; Eagly, 2005; Kets De Vries et al., 2004; Kolb, 1999; Mohr & Wolfram, 2007; Rosener, 1990). The results of these studies indicate that female leaders prioritize building and maintaining harmonious leader-follower

relationships. As a result, they may be more likely to pay attention to followers' verbal or behavioral cues. In contrast, male leaders were found to be more driven by the motive to control and dominate. They may be less concerned with followers' reactions than female leaders. Based on the above argument, we hypothesize:

Hypothesis 3: The relationship between leader efficacy and follower feedback will be affected by the leader's gender, such that male leaders will experience less of a change in leader efficacy than female leaders when receiving positive or negative follower feedback.

Methods

Sample

A survey was administered to MBA students enrolled in business-related courses at three universities in the Southwest U.S. and one university in the Midwest U.S. Approximately 52%, of the sample ($n = 121$ students) were female; about 49% were Hispanics and 40% were Caucasians. Their mean age was approximately 32 years. Close to 80% of the respondents reported having leadership experiences in an organizational setting. The average number of years in a leader role was four years. Table 1 demonstrates this data.

Table 1: Moderating Variable Characteristics

<i>Ethnicity</i>	<i>Male</i>	<i>Female</i>	<i>Missing</i>	<i>Total</i>
Hispanics	28	31	0	59
Caucasian	24	24	0	48
African American	1	3	0	4
Asian	1	4	0	5
Other	1	1	0	2
Missing	2	0	1	3
Total	57	63	1	121

$N=121$

Measures

All the items in the survey were created specifically for this study. A pilot study was conducted with undergraduate students to examine validity and reliability of the scales and the scales were revised based on the results. Each item describes a situation characterized by a specific follower behavior directed toward a leader. Respondents were asked to indicate how likely their confidence as a leader would change in each of those situations. A seven-point Likert scale was used with responses ranging from "less confident" to "more confident".

The word "confident" rather than "efficacy" was used in the survey. This word choice was based on two considerations: 1) the word "efficacy" is not familiar to people who have not received special training in psychology, and 2) the conceptual meanings of the words "efficacy" and "confidence" are very similar (Hannah et al.,

2008; Yukl, 2002). “Positive Follower Behavior” was measured by 5 items. The internal reliability for these items was .79. “Negative Follower Behavior” was measured by 6 items. The internal reliability for these items was .74. (The survey questions are listed in the appendix.)

Statistical Methods

A paired sample T-test was used to compare the means of respondents’ opinions on a leader’s change in confidence in the situations of positive and negative follower behavioral cues. Independent samples T-tests were used to compare female versus male as well as Caucasian versus Hispanic respondents’ opinions on change in leader confidence when receiving positive or negative feedback from followers.

Results

Confirmatory Factor Analysis

A series of factor analyses were conducted to test whether items measured the constructs they were intended to measure. The factor loadings of all the items on the target factors were higher than .50. A factor analysis of all the items showed there were no cross-loading problems. These results showed that the items measured the intended single constructs, meeting the requirement of unidimensionality for creating a summated scale (Hair et al., 2006). The summated scales were created by averaging scores of the items measuring the constructs.

Hypothesis Testing

The paired comparison T-test (Table 2) showed that when follower behavior toward the leader was positive, respondents’ confidence as a leader was higher (Mean = 6.20) than when follower behavior toward the leader was negative (Mean = 3.24). The mean difference is 2.95 ($p < .01$), supporting Hypothesis 1.

Table 2: *Change in Leader Efficacy in the Situation of Positive versus Negative Follower Behavioral Feedback*

<i>Conditions</i>	<i>Mean (Change in Leader Efficacy)</i>	<i>Mean Difference</i>
Positive Follower Behavioral Feedback	6.20	2.95**
Negative Follower Behavioral Feedback	3.24	

$N = 121$, ** $p < .01$.

The result of the independent sample T-test comparing Hispanic and Caucasian respondents (Table 3) showed that compared to Caucasian respondents, Hispanic respondents’ confidence as a leader was less affected by negative follower behavior (mean difference = .45, $p < .05$). There was no significant difference between Hispanic and Caucasian respondents’ confidence as a leader in situations characterized by positive follower behavioral cues. Therefore, Hypothesis 2 was partly supported.

Table 3: *Change in Leader Efficacy between Caucasian and Hispanic Respondents*

<i>Conditions</i>	<i>Mean (Change in Leader Efficacy)</i>	<i>Mean Difference</i>
Positive Follower Behavioral Feedback	6.20	2.95**
Negative Follower Behavioral Feedback	3.24	

$N = 121$, ** $p < .01$.

The result of an independent sample T-test comparing male and female respondents showed that in situations of negative follower feedback (Table 4), male respondents' confidence as a leader was less affected than female respondents' (mean difference = .44, $p < .01$). No significant difference was found for male and female respondents' confidence as a leader in situations characterized by positive follower behavioral cues. Therefore, Hypothesis 3 was partially supported.

Table 4: *Change in Leader Efficacy between Male and Female Respondents*

<i>Condition</i>		<i>Male Respondents (N = 57)</i>	<i>Female Respondents (N = 63)</i>
Positive Follower Behavioral Feedback	Mean (Change Leader Efficacy)	6.07	6.32
	Mean Difference	.25	
Negative Follower Behavioral Feedback	Mean (Change in Leader Efficacy)	3.46	3.02
	Mean Difference	.44**	

$N = 121$, ** $p < .01$.

Discussion

Findings

The study supported the hypothesis that leader efficacy would fluctuate with followers' behavior. The more followers were cooperative and respectful, the more respondents indicated they would experience an increase in leader efficacy. The more followers were uncooperative and defiant toward a leader, the more respondents indicated they would experience a decrease in leader efficacy. Self-efficacy has been viewed as an important trait for a successful leader (Bandura, 1997; Bass, 1990; Boyatzis, 1982; Howard & Bray, 1988). The findings of this study on the close relationship between leader efficacy and followers' behaviors suggest the importance of the leader-follower interaction on a leader's effectiveness and success.

Of course, this study did not exhaust all the possible factors influencing leader efficacy. An example would be the group's task performance. In addition to social persuasion, another important source of self-efficacy is enactive mastery (Bandura, 1997). As Bandura (1997) discussed, the experience of successfully completing a task

would boost self-efficacy in performing a similar task in the future. In the case of leadership, a high group performance level could be perceived as a mastery experience by a leader which would likely help elevate leader efficacy. Thus, group performance may moderate the relationship between leader efficacy and followers' behaviors toward the leader. However, group performance could also be related to follower behaviors. Cooperative follower behaviors could more likely produce high level group outcomes and vice versa. More studies are needed to reveal the full picture of the effect of follower behaviors on leader efficacy.

The effect of follower behavior on leader efficacy to lead might also vary with the level of leader-member exchange (LMX) in the group (Graen, 1976). According to LMX theory, a leader experiences different kinds of interaction with in-group versus out-group followers (Graen, 1976; Graen & Schiemann, 1978). The relationship between a leader and in-group followers is characterized by mutual trust, support, and formal/informal rewards, whereas the relationship between a leader and out-group followers is characterized by low trust, a lack of support, and an absence of rewards (Graen, 1976). A leader might receive opposite behavioral cues from in-group followers and out-group followers. How a leader would respond to positive and negative feedback at the same time and how leader efficacy would be affected by social persuasion of a mixed nature are questions for future research.

As was predicted, the leader efficacy of Hispanic respondents was affected less by negative behavioral cues from followers than that of Caucasians. This result may be due to cultural differences regarding the power distance dimension. Influenced by a culture that is high in power distance, Hispanics may have a relatively high regard for the authority and power of a leader over followers. From that perspective, they may pay less attention to followers' behavioral cues than would Caucasians, who may be more likely to view leaders and followers as having equal status.

The finding regarding the difference between Hispanic and Caucasian respondents to negative follower behavior contributes to the study of the relationship between leaders and followers with different ethnic backgrounds. Past research on leadership diversity found that race and ethnicity affects followers' expectations and perceptions of leader behaviors, the quality of the leader/follower communication process, as well as job satisfaction, commitment to the group, group cohesiveness, and group evaluation for both leaders and followers (Dorfman, 1996; Riordan & Shore, 1997; Tsui, Egan & O'Reilly, 1992; Wesolowski & Mossholder, 1997; Zenger & Lawrence, 1989). Given that leader efficacy affects the leader's behavior toward followers (Bandura, 1997; Hollenbeck & Hall, 2004), a change in leader efficacy to lead would be expected to play an important role in the interaction process between leaders and followers. Change in leader efficacy in response to negative follower behavior among people with different ethnic backgrounds might be an explanation for the effects of ethnicity on leadership processes and outcomes.

The results of this study also showed that the leader efficacy of females was more affected by negative follower feedback than males, indicating that female leaders may rely more on the people around them for feedback regarding their leadership effectiveness. This finding provided a certain level of support to the argument maintaining the communal role of female leaders (Eagly, 1989; Johnson et al., 2008).

Our study's findings suggest that male and female leaders perceive and respond differently to feedback from their social environment and that female leaders' confidence may correspond more to how they are respected and supported by their followers than male leaders.

The finding regarding the difference between the male and female respondents' reaction to negative follower behavior may have implications concerning the underrepresentation of female leaders in organizations. Any unfavorable societal prejudice against women as leaders may effect a women's' perception of her leader efficacy through followers' behaviors. Since self-efficacy is an important predictor of leader emergence and effectiveness, this could contribute to the rate at which women are given leadership opportunities and their success rate when in a leadership position.

Surprisingly, the results did not show a significant difference in leader efficacy between the Hispanic and Caucasian respondents or between male and female respondents in situations of positive follower feedback. One possible explanation for this result is the self-serving bias. Self-serving bias happens when people attribute failure to external factors and success to internal factors (Kelley, 1972). When people receive positive feedback, they are likely to take credit and experience positive feelings without examining the credibility of the source. Therefore in the situation of positive follower feedback, Hispanic and Caucasians, as well as males and females would experience a similar increase in leader efficacy. However, when people perceive negative feedback, they tend to examine the credibility of the source, thus bringing their cultural and/or gender backgrounds into the judgment process.

Limitations

This study focuses on a leader's change in leader efficacy when facing different follower behaviors. As mentioned previously, this change might be affected by group performance outcomes. Future research should incorporate the factor of group performance outcomes into the study design.

This study was survey-based. Respondents were asked to project their change in confidence as a leader given certain hypothetical situations characterized by positive or negative follower behavior. It would be valuable to directly measure leaders' change in leader efficacy after the actual experience of receiving positive or negative follower feedback. Future research should consider utilizing field studies or experimental designs.

Conclusion

For years, downward influence from a leader to followers has been the central topic in research on leader-follower relationships. The influence that followers exert on a leader has been neglected or downplayed in comparison. The findings of this study suggest that follower behaviors could affect leader efficacy, which in turn could contribute to a leader's effectiveness. Recognition and understanding of the importance of follower behaviors has significant implications for developing competent leaders, building positive leader-follower relationships, and improving group performance.

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Appendix: Questionnaire

The following statements describe some situations that are fairly common to leaders. Use the scale provided below to indicate how likely each of the following situations would affect your confidence in your leading ability. (Choices range from 1 – less confident, 4 – no change, to 7 – more confident on a seven-point Likert scale)

I would likely feel _____ about my leading ability when group members show great respect for me.

I would likely feel _____ about my leading ability when group members follow my directions.

I would likely feel _____ about my leading ability when group members cooperate with me.

I would likely feel _____ about my leading ability when group members skip group meetings.

I would likely feel _____ about my leading ability when there are many free riders in the group.

I would likely feel _____ about my leading ability when group members make a strong effort in group work.

I would likely feel _____ about my leading ability when group members voluntarily work overtime on group projects.

I would likely feel _____ about my leading ability when group members show no excitement or enthusiasm for group tasks.

I would likely feel _____ about my leading ability when group members express doubts about my leading ability.

I would likely feel _____ about my leading ability when few group members respond to my invitation for input to help solve a problem.

I would likely feel _____ about my leading ability when my performance as a leader is rated low by group members in a 360 degree performance evaluation.

An Examination of Female Participation on U.S. Board Subcommittees

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This study examines female membership on core corporate board committees (audit, compensation, and nominating). Individual committee characteristics were examined to determine whether gender influences core committee membership. Results show mixed support for the study's hypothesis. Specifically, females are more likely to serve as members of the nominating and audit committees but less likely to serve as members of the compensation committee after controlling for experience. The study also evaluates the relationship between firm level characteristics and the likelihood of having female core committee members. Results suggest that larger firms are more likely to have female core committee members, while rapidly growing firms are less likely to have female core committee members.

According to the Women's Bureau of the U.S. Department of Labor, women represented 46.5% of the total U.S. labor force in 2008 with the largest proportion (39% of employed women) working in management or professional positions. In addition, according to the Department of Labor, in 2008 women accounted for 51% of

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all workers in high paying management, professional, and related occupations. Despite this significant level of participation, women are still underrepresented in the highest echelons of the corporate world. Catalyst, a non-profit organization devoted to the advancement of women in the corporate arena that conducts statistical studies to chart the progress of women in business and providing consulting to firms in the recruitment and retention of women business leaders, reported in their 2008 Catalyst Census that women held 15.2% of directorships and 15.7% of corporate officer positions at Fortune 500 companies (www.catalystwomen.org).

Additionally, a 10-year (1995-2005) trend report of women's progress on corporate boards found that female directors remain underrepresented in chair positions on the most powerful decision making committees (such as the audit, compensation, and nominating/governance committees), while the number of companies without women board directors fell by almost 50% (Catalyst, 2005a).

The primary objective of this study is to examine female participation on core board committees in an attempt to understand whether female directors are appointed as tokens or are recognized as, and given opportunities to make significant contributions to the critical functions of corporate boards. First, individual characteristics were examined to determine whether gender influenced the odds of serving on three core committees, the audit, compensation, and nominating governance committees. Due to data limitations on executive committee membership, only the audit, compensation, and nominating committee memberships were examined.

Board committees provide a vehicle for conducting board directed activities and are an important part of the firm's overall governance structure. These three *core committees* provide oversight activities by reviewing internal audits, controls, and policies as well as making recommendations on compensation policies, enhancing corporate governance, and selecting and evaluating nominees for director positions. Participation on one of these committees affords board members the opportunity for significant input and involvement in major board decision-making activities.

Second, firm level characteristics were examined to identify the types of firms that are likely to appoint females to the three core committees. Carter, Simkins, and Simpson (2003) present commentary from executives such as Robert Campbell, CEO of Sun Oil, and Karen Curtin, executive vice president of Bank of America, as well as policy statements from TIAA-CREF indicating that board diversity is a significant issue for corporate managers. However, many chief executives reveal that the top reasons for having women on their boards are to maintain a positive image with shareholders and to signal the companies' commitment to board diversity (Catalyst, 1995). While this reasoning may increase female board membership and serve to generate positive publicity for some firms, it may still minimize women's potential contributions. If women are appointed to board membership only as a way to enhance public perception of a firm, women may not be asked to serve on the boards' most influential committees where crucial decisions are made regarding firm policy and control. On the contrary, if women are recognized as valued contributors to a firm, they would be significantly represented on these committees as well as on the board of directors, the latter tending to be more publicly visible. By examining the

relationship between firm characteristics and female core committee membership, we are able to identify the types of firms that are more or less likely to appoint females to the three core committees.

Literature Review

Female Board Participation

The controversy over female board participation often focuses on the potential benefits of adding heterogeneity to a board or board subcommittee that would increase firm value versus tokenism. According to Karen J. Curtin:

“There is real debate between those who think we should be more diverse because it is the right thing to do and those who think we should be more diverse because it actually enhances shareholder value. Unless we get the second point across, and people believe it, we’re only going to have tokenism” (Brancato & Patterson, 1999).

A number of studies raise doubt about whether female directors are appointed to merely comply with increasingly accepted norms. In the 1995 *Catalyst 500* report, chief executives reported that image management was a primary reason for female board membership. Bilimoria (2006) suggests that the mere presence of women on a corporate board signals to employees the recognition of women in the corporation. Burke (1994) argues that the presence of female board directors impresses stockholders and the public who are concerned with issues of diversity. Bernardi, Bean and Weippert (2002, 2005) find that firm diversity increases in terms of gender and ethnicity when annual reports include the photos of board members. Further, Farrell and Hersch (2001) find that the probability of adding a woman to a board is significantly increased when a woman departs the board relative to the departure of a male outside director, while the probability of adding a woman to a board in a given year is negatively related to the number of women directors already on a board. Schellhardt (1997) notes that some large companies have to explain the reason for the absence of women on their boards to the public.

The conceptual arguments in support of a heterogeneous board or committee can be broadly categorized as: (1) representation of the firm’s customer base, suppliers, and employees; (2) variety of perspectives; (3) enhanced problem-solving; (4) creativity and innovation, and (5) improved monitoring due to increased independence (Carter et al., 2003; Robinson & Dechant, 1977). Firms with more women in top management positions may be more reflective of their consumers and employees and better able to meet market demands. This may be particularly relevant for specific industries or firms, e.g., retail and cosmetics. Women could provide different perspectives and alternatives which encourage discussion and improved problem solving. Through this process, firm leadership is enhanced as more than one perspective is addressed. Additionally, there is some evidence to suggest that women provide innovative and creative solutions and strategies based on beliefs and cognitive functioning (e.g., Carter et al., 2003; Robinson & Dechant, 1977).

Carter et al. (2003) suggest that a nontraditional board member (based on gender,

ethnicity, or cultural background) could be considered an outsider, which is effective for monitoring purposes. However, this type of proxy for an outsider may not be an adequate substitute if the female member is marginalized. Kanter (1977) presents evidence that women can lose their effectiveness as contributors when outnumbered by men. In addition, women could be viewed in stereotypical roles and their abilities could be undervalued. This route would reduce the likelihood of women's involvement in the firm's decision making process, which would hamper their ability to add value to the firm.

Board Committees

Kesner (1988) identifies four core committees as having the most influence: audit, compensation, nominating, and executive. The audit committee is charged with selecting auditors and reviewing audits, as well as assessing internal controls. The compensation committee reviews and sets compensation packages for senior management. The nominating committee evaluates and selects directors and reviews stockholder recommendations. The executive committee oversees other board committees and acts as a stand-in when there is a crisis. Both audit and compensation committees have come under increased scrutiny in the aftermath of the corporate governance scandals of the past few years, which is evidenced by the number of proposed and final rulings by the Securities Exchange Commission (SEC).

Previous research indicates that core committees are crucial in the corporate governance system. A firm's board of directors relies on these committees to assist in the oversight process as these committees are given specific mandates and responsibilities for corporate issues and concerns. This interplay between the board and specific committees increases the level of monitoring. In addition, the SEC recognizes the importance of standing committees by requiring firms to report the committees and their membership.

While there has been limited research on the appointment of women to core corporate committees (Kesner, 1988; Bilimoria & Piderit, 1994), the research on board diversity is more developed. Specifically, the research on board diversity examines the characteristics of the *board of directors*. The conceptual arguments in support of diversity as discussed above can also be applied to the analysis of core committee membership. Given the importance and function of these core committees, it is reasonable to suggest that the same aspects of diversity that are important for a board of directors must also be important for core committees.

Hypotheses

It is important to investigate whether women are considered real, as opposed to token contributors to the important decisions of the board and to firm value. Fama and Jensen (1983) point out that the most important role for the board is to serve as a mechanism to control and monitor managers. The extent to which women directors are provided with opportunities to be the members of key board committees that perform the crucial function of the board is an important measure of gender parity beyond signaling and/or image maintenance.

If women are truly valued as contributing members to a firm's upper management, what are the reasons for their absence or, at least, possible under-representation in the corporate hierarchy? One argument suggests that women lack the necessary experience that would make them desirable candidates relative to men. If this is the case, time would tend to erode this particular diversity issue, assuming women are allowed to advance without hindrance on the corporate ladder. However, as noted earlier, women occupied only 15.7% of corporate officer positions (defined as board-elected or board-approved positions) as compared to 51% in high-paying, management-type positions in 2008 among the Fortune 500 firms.

Another argument suggests that gender bias exists and that women are valued only for the impression they present to the public. As noted earlier, the 1995 10-year trend report by Catalyst finds that the appointment of women to board positions is used to establish a positive market perception of the firm's commitment to board diversity. Bilimoria and Piderit (1994) find evidence of sex-based bias after controlling for directors' experiences. They suggest that men were preferred for compensation, executive, and finance committees, while women were preferred for public affairs committees.

If women are considered valued contributors to the board rather than a means to reach a diversity goal, they would be significantly represented on the most important board committees: audit, compensation, and nominating. If women who serve on the board are excluded from being appointed to the core committees, this may indicate that the firm uses the more visible board membership as a way to enhance the firm's public perception and that women are used as "window dressings." From these arguments, the following hypothesis is developed:

H1a: Women directors are less likely to be appointed to the core board committees than are male directors.

Firm-level characteristics that may influence female participation at the committee level were also determined. Previous research has found that women were more likely to be appointed to the boards of *large* firms. There is evidence to suggest that larger firms, due to their increased public visibility, are more likely to appoint women directors. If a gender bias exists, women would be less likely to serve on the core committees of larger firms (as the positions are less visible to the public) relative to women directors in smaller firms. Nelson and Levesque (2007) argue that the high-demand labor markets and industry conditions of the high-growth entrepreneurial sectors, combined with more educated and experienced females, could result in increased participation by women in prominent governance positions. The 2005 *Catalyst 500* report finds that larger firms are more likely to appoint female board members, even though women are still significantly under-represented on the most powerful committees. In addition, if women are constrained by gender in the hierarchical setting of a larger firm, it is possible that they would move into smaller, growth firms where talent supersedes gender. These findings lead to the following hypotheses:

H2a: Women directors are less likely to be appointed to the core board committees of larger firms than are male directors.

H3a: Women directors are less likely to be appointed to the core board committees of growth firms than are male directors.

Previous studies that focused on board composition found that women were more likely to be outside board members (Carter et al., 2003) when the full board is examined. It is possible that this also extends to board subcommittee membership, which leads to Hypothesis 4.

H4a: Women directors are less likely to be appointed to the core board committees of firms with more insiders on the board than are male directors.

Konrad, Kramer and Erkut (2008) found that a critical mass is necessary in order for women to be taken seriously and to surmount the risk of tokenism. With a minimum of three women on a board, the gender barrier can be removed and collaboration and communication among board members increased. In addition, women are more likely to be heard, and there is less stereotyping by male members. It is suggested that a firm with a higher percentage of women on their board was more likely to recognize women as valued contributors. As a result, these firms were more likely to appoint females to core committees, which leads to Hypothesis 5.

H5a: Women directors are more likely to be appointed to the core board committees of firms with more female directors on the board than are male directors.

Research Design and Results

Sample

The primary source for director information is the Investor Responsibility Research Center (IRRC) Directors database. The IRRC Directors data include director information for directors of S&P 500, S&P Midcaps, and S&P SmallCap companies. The dataset is highly detailed and, among other financial and non-financial items, includes information on the individual director's age, gender, and ethnicity. The IRRC data is partially constructed using data from the annual *Board Practices/Board Pay: the Structure and Compensation of Boards of Directors at S&P 1,500 Companies* publication. Although the IRRC Directors database contains information from 1996 to the time of conducting this research, we do not include data prior to 1999 because the director gender information is missing. We obtain all firm-level financial data from the COMPUSTAT database. After matching the IRRC Directors data to COMPUSTAT and after removing all firms with missing cases, the full matched sample consists of 4,913 firms in the aggregate-level analysis, and in the firm level analysis the final sample consists of 50,645 firm-year observations spanning 1999-2004. All the regression analyses are pooled time-series regressions.

Table 1 includes a summary of all relevant independent control variables.

Table 1: Definitions of Variables

Variable	Definition	Source
<i>FemaleRatio</i>	To construct <i>FemaleRatio</i> we take the ratio of all women on the board to total board members. This ratio measures the percentage of females on the board to total board members. We obtain board level data from the IRRC.	IRRC/Authors
<i>FemaleComRatio</i>	<i>FemaleComRatio</i> We tabulate the number of female members on the audit, compensation and nomination committees. We divide the total number of females on these committees by the total number of board members. This represents the ratio of females on the core committees to total board members.	IRRC/Authors
<i>InsiderRatio</i>	We divide the number of insiders on the board by the total number of board members. The IRRC database identifies current and former employees, board members, and directors. We use this as an indication of a board member's independence and classify individuals with these affiliations as insiders.	IRRC/Authors
<i>Bsize</i>	Is the total number of directors on the board.	IRRC
<i>LnAssets</i>	Is the natural log of total assets (COMPUSTAT Item6).	COMPUSTAT /Authors
<i>Profitability</i>	Is the ratio of income before extraordinary item to total equity (COMPUSTAT Item 18 / Item 6).	COMPUSTAT /Authors
<i>Ownership</i>	Is the ratio of shares held by a director to the total number of voting shares outstanding.	IRRC/Authors
<i>Insider</i>	Is a binary variable that takes the value of one when the director is an employee (current and former employees of the firm) and zero otherwise.	IRRC/Authors
<i>TimeOn</i>	Is the number of years the director has served on the board.	IRRC/Authors
<i>AgeBinary</i>	Is a binary variable that takes the value of one when the directors age is greater than the mean age of the board and zero otherwise.	IRRC/Authors
<i>Otherboards</i>	Is the number of other boards that a director sits on.	IRRC
<i>Interlock</i>	Is a variable that takes the value of one if the IRRC designates the director as having an interlocking relationship with the firms and zero otherwise.	IRRC/Authors
<i>Leverage</i>	Is the ratio of total-debt to total-assets (COMPUSTAT Item5 + COMPUSTAT Item9) / COMPUSTAT Item6).	COMPUSTAT /Authors
<i>Growth</i>	Is the ratio of capital expenditures to total sales (COMPUSTAT Item30 / COMPUSTAT Item12).	COMPUSTAT /Authors
<i>CEO</i>	Is a binary variable that takes the value of one when the director is a CEO.	IRRC/Authors
<i>Gender</i>	Is a binary variable that takes the value of one when the director is a female and zero otherwise.	IRRC/Authors
<i>Year</i>	Is a vector of binary variables that control for temporal effects.	Authors
<i>SIC</i>	Is a vector of binary variables that captures the impact of each standardized industry code.	COMPUSTAT

Univariate Results

To study the change in female board and committee membership over the study's examination window, the average change in the consistency of boards contained in the matched sample was presented. In particular, the researchers were interested in examining the change in the ratio of female board members to total board members (*FemaleRatio*) and changes in the ratio of females on the audit, compensation, and nomination committees to total board membership (*FemaleComRatio*) over the sample.

Table 2: Sample Means

Mean Values					
Year	N	<i>Bsize</i>	<i>InsiderRatio</i>	<i>FemaleRatio</i>	<i>FemaleComRatio</i>
1999	1110	9.11	.292	.076	.061
2000	1087	8.99	.291	.078	.063
2001	1009	8.64	.286	.079	.062
2002	393	8.55	.281	.083	.067
2003	369	8.47	.286	.089	.073
2004	732	8.67	.243	.097	.081

Table 2 contains the univariate means for *InsiderRatio*, the ratio of insiders to total board members, *Bsize*, the total number of directors on the board, *FemaleRatio*, and *FemaleComRatio* for 1999 through 2004. As evidenced by the *InsiderRatio* mean values, the proportion of insiders to total board members has experienced a steady decline over the examination period. This decline coincides with the steady increase of the ratio of females on the board and the steady increase of the ratio of females on

the audit, compensation, and nominating committees. The percentage of females on the board increased from 7.6% in 1999 to 9.7% in 2004, and the percent of women on the audit, compensation, and nominating committees to total board membership increased from 6.1% to 8.1% over the same period. This trend suggests that female committee and board participation is increasing in the U.S. However, to more closely examine the relationship between board composition and female membership, the relationship was examined in a multivariate logistic framework.

Individual Level Determinates of Committee Membership

To examine the relationship between board member characteristics and the likelihood of board committee membership four separate logistic regression specifications were estimated. First a specification that examines the determinates of board committee membership for the audit, compensation, and nominating committees using a single binary dependent variable, *CommitteeMember*, to represent committee membership in any of the three committees evaluated was estimated. In addition, a logistic regression for each committee was estimated separately. The researchers were particularly interested in examining the relationship between gender (Gender) and the likelihood of committee membership. We specify the model as:

$$prob(CommitteeMember = 1) = \left(\frac{e^j}{1 + e^j} \right), \quad (1)$$

The dependent variable *CommitteeMember* takes the value of one when the director is on the audit, nominating, or compensation committees. *Ownership* is the ratio of shares held by a director to the total number of voting shares outstanding. *Insider* is a binary variable that takes the value of one when the director is an employee (current and former employees of the firm) and zero otherwise. *TimeOn* denotes the number of years the director has served on the board. *AgeBinary* is a binary variable that takes a value of one when the director's age is greater than the mean age of the board and zero otherwise. *Otherboards* is the number of other boards that a director sits on. *Interlock* takes a value of one if the IRRC designates the director as having an interlocking relationship with the firms and zero otherwise. *CEO* is a binary variable that takes the value of one when the director is a CEO. *Gender* is a binary variable that takes the value of one when the director is a female and zero otherwise. *OtherCommittee* takes a value of one when the board member already serves on the audit, compensation, or nominating committees. *X* is a vector of *SIC* and *Year* binary variables that controls for intertemporal and industry effects (denoted by *j*), and *i* represents each firm.

Table 3 contains the logistic regression results for the formula of Model 1. The researchers are particularly interested in the coefficient estimate on *Gender*. Model 1 tests whether or not women are less likely to be appointed to core committee membership after controlling for experience based attributes, such as tenure on the board and age.

Table 3: Individual Level Determinates of Committee Membership

	Committee Membership	Nominating Committee Membership	Compensation Committee Membership	Audit Committee Membership
<i>Intercept</i>	-	-	-	-
<i>Ownership</i>	-0.882***	-0.067	-0.645***	-3.060***
<i>Insider</i>	-0.162***	-0.043***	-0.134***	-0.132***
<i>TimeOn</i>	-0.058***	0.031***	-0.037***	-0.055***
<i>AgeBinary</i>	.0710***	0.023***	0.052***	0.036***
<i>OtherBoards</i>	0.050***	0.030***	0.026***	0.004**
<i>Interlock</i>	-0.028**	-0.018	-0.094***	0.044**
<i>CEO</i>	-0.077***	0.017***	-0.056***	-0.095***
<i>Gender</i>	0.096***	0.050***	-0.045***	0.067***
<i>OtherCommittee</i>		0.070***	0.085***	0.001***
<i>N</i>	50,645	50,645	50,645	50,645
<i>Pseudo R-Squared</i>	0.15	0.034	0.077	0.085

* Indicates significance 10% level

** Indicates significance 5% level

*** Indicates significance 1% level

Model 1:

$$\text{prob}(\text{CommitteeMember} = 1) = \left(\frac{e^I}{1 + e^I} \right)$$

where, $I = \beta_0 + \beta_1 \text{Ownership}_i + \beta_2 \text{Insider}_i + \beta_3 \text{Timeon}_i + \beta_4 \text{AgeBinary}_i$

$$+ \beta_5 \text{OtherBoards}_i + \beta_6 \text{Interlock}_i + \beta_7 \text{Ceo}_i + \beta_8 \text{Gender}_i + \sum_{j=9}^n \beta_j X + v_i$$

The estimate on Gender is positive and significant for the total committee, nominating, and audit analysis. The marginal effects indicate that a female is 9.6% more likely than a male to be on any of the three committees. Females are 5% and 6.7% more likely to be on the nominating and audit committees, respectively. However, the compensation committee membership estimate is negative and significant suggesting that being a female makes it 4.5% less likely to be on the compensation committee.

These results provide mixed results regarding the hypotheses of whether women are less likely to be appointed to core committee membership after controlling for experience based attributes. The results suggest that they are more likely to be appointed to the nominating and audit committees, but less likely to be appointed to compensation committees.

Individual board member ownership (*Ownership*) has a negative impact on the probability of an individual serving on the nomination or audit committees. This result complements those of Vafeas (2000), who found that ownership has a positive impact on membership on the compensation committee. In addition, being an insider (*Insider*) has a negative impact on the probability of the individual serving on the nominating or audit committees. These results are partially consistent with those of

Kesner (1988), who provides evidence that the members of the four key committees she examined (audit, nominating, compensation, and executive) were more likely to be outsiders. However, being an insider has a positive, but statistically insignificant influence on compensation committee membership.

Age (*Agebinary*) has a positive impact on service across all three committees. The coefficient estimate on *TimeOn* is negative and significant in the compensation and audit committee regressions and positive in the nominating committee specification, suggesting the longer an individual has been a board member, the less likely they will be a member of the compensation and audit committees. They will be more likely to be a member of the nominating committee, however. These results are counter to those of Vafeas (2003), who argues that a longer board tenure provides the director with more knowledge about the firm and its business environment, and a long-term director engagement might be associated with greater experiences, commitment, and competence. In addition, the number of other boards (*Otherboards*) that a board member serves on has a positive impact on the likelihood that they will serve on one of the three committees. This result is consistent with Vafeas (2000), who showed that directors with more additional board seats are more likely to serve on compensation committees.

Aggregate Board and Firm Determinates of Female Committee Membership

The previous analysis addressed the relationship between board and committee membership at the individual level, but it does not examine the relationship between the firm characteristics and female board membership.

To control for mitigating factors in the relationship between firm and board characteristics and the incidence of female board committee membership, two separate logistic regression models were estimated. First, a model that includes all firms was estimated and, second, a model that only included firms that have women on the board was estimated. In particular, the researchers were interested in examining the relationship between *Bsize*, *InsiderRatio*, and *FemaleRatio* to the incidence of female committee membership. The formal model is specified as:

$$\text{prob}(FemalCom = 1) = \left(\frac{e^I}{1 + e^I} \right), \quad (2)$$

$$\text{where, } I = \beta_0 + \beta_1 \text{LnAssets}_i + \beta_2 \text{Growth}_i + \beta_3 \text{InsiderRatio}_i + \beta_4 \text{Bsize}_i \\ + \beta_5 \text{FemaleRatio}_i + \sum_{j=8}^n \beta_j X + v_i.$$

The dependent variable *FemalCom* is a binary variable that takes a value of one when the firm has at least one female on the audit, compensation, or nominating committee (and zero otherwise). *LnAssets* is the natural log of the book value of the firm's assets, and *Growth* is the ratio of capital expenditures to total sales. *InsiderRatio*, *Bsize*, *FemaleRatio* are the same as defined previously. *X* is a vector of SIC and Year binary variables that control for intertemporal and industry fixed effects (denoted by *j*), and *i* represents each firm.

Table 4: Aggregate Board Determinates of Female Committee Membership

	Full Model	Female Inclusive Board Only
Intercept	-	-
<i>LnAssets</i>	0.019***	0.030***
<i>Growth</i>	-0.068**	-0.097**
<i>InsiderRatio</i>	-0.266***	-0.411***
<i>Bsize</i>	0.022***	0.004
<i>FemaleRatio</i>	2.742***	1.1359***
<i>N</i>	4,913	2,731
<i>Pseudo R-Squared</i>	0.61	0.09

* Indicates significance 10% level

** Indicates significance 5% level

*** Indicates significance 1% level

Model 2 tests H2 through H5, and the results of the logistic regressions are presented in Table 4 (marginal effects are presented).

$$\text{prob}(\text{FemalCom} = 1) = \left(\frac{e^I}{1 + e^I} \right)$$

$$\text{where, } I = \beta_0 + \beta_1 \text{LnAssets}_i + \beta_2 \text{LnGrowth}_i + \beta_3 \text{InsiderRatio}_i + \beta_4 \text{Bsize}_i + \beta_5 \text{FemaleRatio}_i + \sum_{j=3}^n \beta_j X + v_i$$

The coefficient estimate on *LnAssets* is positive and significant in both specifications, suggesting that larger firms are more likely to have female committee members. When all firms are considered, the results indicate that female committee membership is 1.9% more likely for an additional \$1,000,000 increase in firm size. When considering only firms that have female board members, the effect is increased. Female committee membership is 3% more likely when there are female board members. In fact, the results indicate that women are more likely to be on core committees in larger firms. This also suggests that women are being appointed to important positions even when these positions are not generally visible to the public. Therefore, we do not find evidence of gender bias in this sample.

However, more rapidly growing firms are less likely to have female committee members, which is evidenced by the negative and significant coefficient estimate on *Growth*. Female core committee membership is 6.8% (all firm model) and 9.7% (firms with female board directors) less likely for growing firms. This result is consistent with previous research on female board membership in growth firms. Daily, Certo and Dalton (1998) examined the level of female board appointments in high-growth, entrepreneurial firms included on Inc. 100 lists over a ten year period (1987-1996). They found that female board membership declined over the period.

Nelson and Levesque (2007) also found lower rates of women as board directors in high-growth firms.

The ratio of insiders (*InsiderRatio*) on the board significantly decreases the likelihood that a female will serve on the audit, nominating, or compensation committees. As expected, larger boards and the ratio of females-to-males on the board both lead to increases in the incidence of female committee membership.

Mixed results were found for the relationship between board size and the appointment of women to core committees in our specifications. In the full model, females are 2.2% more likely to be appointed to at least one core committee given a 1% increase in board size, while no significant relationship is found in the model that included only firms with females on the board. In addition, the likelihood that a female is appointed to a core committee increases by 274% (all firm model) and 113% (firms with female board directors) when the ratio of female board members to total board members increases by 1%. This result is consistent with the results of Bilimoria (2006), who finds that a company whose board includes female members is likely to also have women in top management positions.

Discussion and Future Research

This study adds to the current literature in several ways. First, the study revisits the board committee composition with regard to women using data that is more extensive, more current, and that uses a longer timeframe than in previous studies. The dramatic changes in the level of female participation on corporate boards since the 1980s makes it important to revisit and further investigate the issue of gender diversity in the corporate boardroom. The 2008 *Catalyst 500* report indicated that women hold 15.7% of all Fortune 500 board seats. This is in contrast to the Kesner (1988) study, which found that only 3.6% of board seats were occupied by women in her sample of 250 firms from 1983, and to the Harrigan (1981) study of 112 publicly traded firms, which found that there were no women directors in 79.5% of the firms in the sample.

The results also indicate that the inclusion of women in committee positions was not uniform across all firms in that female participation is concentrated among larger firms and within specific core committees. While aggregate data offers insight into the more general characteristics of firms that appoint women to board committees and insight into the general characteristics of the women appointed to board committees, more detailed data is needed to determine the reason for female participation on board committees. Several issues emerged at the firm and individual levels which require investigation. Education and/or certification levels, as well as the perceived caliber of the education, may impact the ability of women to attain top positions, which may lead to core committee membership. Another issue may be the employment history of the female candidate. Is it more likely that women who have spent the majority of their careers at a particular firm will be appointed to a board committee for that firm, or does a woman have to prove herself first at one or more firms?

Certain firms may be more receptive to female top management and, ultimately, board committee membership. Firms that are “family friendly” are more likely to allow women to arrange their career paths around maternity and family issues in order to

allow them a continual progression in their careers without significant lapses in employment. Also, firms that are engaged with their communities and/or are invested in corporate social responsibility programs may be more likely to advance women and appoint them to a board committee.

The results also provide an avenue for future research exploration in the area of firm size and growth relative to female core committee membership. For example, why are large firms more likely to place women on core committees versus small firms? While the data supports this, it should be noted that the study's data was limited to mostly large capitalization companies. It is possible that this result may not hold if the balance of "small capitalization" firms is increased in the sample. In addition, it was found that fast growing companies were less likely to have a female on one of the core committees than slower growing companies. It is possible that these fast growing companies are also young firms that have experienced little board turnover and may still contain founding members of the firm. In addition to growth and firm size, issues such as tokenism and discrimination could be studied further using more detailed data.

Conclusion

The present research examined female membership on core corporate committees (audit, compensation, and nominating). The results suggest that when individual committees are evaluated, females are more likely to be members of the nominating and audit committees, but less likely to be members of the compensation committee even after controlling for experience.

The study also evaluated firm level characteristics such as size and growth to determine the types of firms that were likely to have female committee members. The results suggest that larger firms are more likely to have female committee members, while rapidly growing firms were less likely to have female committee members.

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Exploring the Effect of Unfair Work Contexts on the Development of Fairness Beliefs

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This paper examines what happens when individuals who perceive a fair situation discover that the situation is in fact, unfair. In a previous study, women who sued their universities discussed their initial expectations that the university would treat them fairly despite several studies that clearly indicated discrimination at universities is still a problem (Goltz, 2005a). Thus, using interview excerpts from this past study, the current paper explores how these women's expectations of fairness may have been formed, as well as how they changed after a discriminatory experience. Results suggest that the women's expectations of fairness arose in part from three values emerging during childhood: hard work, education, and self-sufficiency. In addition, the interviews indicated the women moved from stage 5 of Kohlberg's model of moral development, where the belief is that justice can be negotiated in accepted social systems, to a belief that this may not always be the case, but if enough people continue to pursue justice through accepted means, then the systems will eventually change. Implications of these results for research into models of moral development, psychological contracts, and organizational justice are discussed.

Models on justice and fairness have proposed that the concept of justice is held by all individuals and that justice beliefs assist in regulating interpersonal behavior (e.g., Folger & Cropanzano, 2002; Cropanzano, Goldman & Folger, 2003; Lerner, 1980). For instance, Wright (1994) proposed that the human concept of reciprocity genetically evolved to keep people in touch with the needs of others. In fact, fairness appears to be one of six universal moral principles considered to be of fundamental importance by a large and diversified number of people (Schwartz, 1998, 2002). However, Wright (1994) also suggested that people's sense of justice is a result of environmental forces operating over time.

Moral reasoning appears at a very young age and develops through adulthood (e.g., Enright, Franklin & Mannheim, 1980). Very young children perceive that "bad" behavior has immediate negative consequences (Jose, 1991), and they first tend to allocate rewards based on self-interest, then physical characteristics, giving more to the biggest or oldest child (Damon, 1973, 1975; Enright et al., 1980; Thomson & Jones, 2005). This is called the preconventional level in Kohlberg's model of moral development (1969, 1971). Allocations change as children interact more with peers and learn to negotiate, share, have mutual respect, and understand others' perspectives (Damon, 1973, 1975; DeRemer & Gruen, 1979; Rest, 1983). During this time, strict equality in distributions occurs initially, but later, merit is used, with children allocating larger rewards to the most productive individuals (Damon, 1973, 1975). Thus, social forces help children develop what Kohlberg (1969, 1971) calls the conventional level of moral reasoning (stages 3 and 4) in which respect from others based on following social norms, rules, and laws is important. Most adults function at this level of reasoning and maintain social order without questioning it (Kohlberg, 1969, 1971). Later phases of moral reasoning (stages 5 and 6) involve more cognitive complexity (Kohlberg, 1969, 1971). In the postconventional phase, individuals recognize that compromises are sometimes needed because notions of what is just can differ since the distribution of resources and rewards can be based on a number of criteria, such as self-interest, physical characteristics, need, relationship ties, and behavior or productivity (Damon, 1973, 1975; Duetsch, 1975; Thomson & Jones, 2005). In addition, individuals recognize that maintaining the existing social order is not always beneficial and consider the rights and values that should be upheld (Kohlberg, 1969, 1971).

Presumably, adults carry their current level of moral reasoning with them into the workplace, whether it be preconventional, conventional, or postconventional. Justice in the workplace has become a very active research area in recent years (Fortin & Fellenz, 2008). The early literature in this area concerned only the perceived fairness of outcomes (later termed distributive justice), and similar to the literature on moral development, it indicated that people use different criteria, including equity, equality, and need, depending on the context (Adams, 1963, 1965; Blau, 1964; Homans, 1961; Konow, 2003). Later however, it was suggested that fairness can be assessed in terms of procedures and interactions, as well as outcomes. Procedural justice refers to the perceived fairness of processes used to determine the awarding of outcomes, and interactional justice refers to the perceived fairness of interpersonal relations associated with the distribution of outcomes (e.g., Thibaut & Walker, 1975; Bies & Moag, 1986). Research into these additional concepts indicate that sometimes fairness is perceived when distributive or interactional justice is present although outcomes are not fairly distributed, which have been called the "fair process" and "fair information" effects (Bies & Shapiro, 1987; Folger & Cropanzano, 1998; Fortin & Fellenz, 2008; Van den Bos et al., 1998).

Research indicates, in fact, that which type of justice perceptions are used appears to depend upon which information was available at the beginning of the relationship and that judgments of fairness based on process are often relied on because they occur well prior to experiences of distributions of outcomes (Lind, 2001). Thus, the

research literature indicates that it is difficult to precisely define fairness given that the criteria used to assess fairness appear to be very context dependent (e.g., Cropanzano & Prehar, 2001). However, it has been suggested that what is basic to all perceptions of fairness and unfairness is a judgment about the strength of a relationship with a group or organization (Lind, 2001). Lind (2001) has argued that people experiencing unfairness are less concerned with the material payoff they felt entitled to than with the feeling of rejection they perceived from the group or organization. This is consistent with the literature on social identity, which suggests that identification with a social group is important for self-esteem (Smith & Tyler, 1997). It also could explain the finding that people tend to be satisfied if there is at least one type of justice (interactional, procedural, or distributive) occurring (Goldman, 2003; Cropanzano, Bowen & Gilliland, 2001). Perhaps then, for most people, one form of justice alone is sufficient evidence of acceptance by a group. In practice, this should help managers resolve the "justice paradox" (Folger & Cropanzano, 1998), which refers to the fact that often the most just management practices in terms of distributive justice, such as the use of predictive selection procedures, are not perceived by individuals as being procedurally just. However, since individuals are sometimes unable to observe the distributive justice basis for management practices such as selection methods, the suggestion has been to ensure the more observable interactional justice that can make up for a perceived lack of distributional and procedural justice, such as through respectful and honest interpersonal treatment (Cropanzano et al., 2001).

However, research into perceptions of fairness in the workplace, which is now referred to as "organizational justice", has been criticized for being too focused on managing perceptions of employees and neglecting broader and multi-faceted inquiries into fairness (Cohen, 1985, 1988; Fortin & Fellenz, 2008). In other words, this research has prioritized management interests of making the impression of fairness and has neglected employee interests of experiencing actual fairness, resulting in what Fortin and Fellenz (2008) termed hypocrisies of the organizational justice literature. They noted that researchers even appear disinterested in whether their efforts result in an increase in actual justice in organizations (Bies & Tripp, 1995, 2001). This is especially troubling given that organizations have historically had a track record of impression managing rather than solving real problems related to the equitable treatment of employees. Note for instance, that organizational mechanisms for handling complaints of discrimination have been cited by sociologists and legal scholars as being largely designed to show compliance with the legal system while masking continuing inequities, failing to be effective tools preventing and correcting discrimination (Bergman et al., 2002; Bisom-Rapp, 1999; Edelman, Uggen & Erlanger, 1999; Sturm, 2001). Thus, Fortin and Fellenz (2008) have called for more varied types of investigations, including qualitative ones, to tackle some of the questions that haven't yet been asked about fairness in organizations.

Therefore, this paper uses existing data to further consider the question of what happens when individuals who had expected or perceived a fair situation discover that the situation is in fact unfair. This question deserves some scrutiny because there already is plenty of evidence that unfairness still exists in places many people perceive as being fair. One of these places is academia, where discrimination continues to be a

problem, despite an image of being an egalitarian, nurturing, protected environment (Dzeich & Weiner, 1984; Grauerholz, 1996; Toren, 1990). Women are underrepresented as faculty in academia and inequities persist in terms of rank, salary, and working conditions such as the presence of sexual harassment (Caplan, 1993; Dzeich & Weiner, 1990; Grauerholz, 1996; Nettles et al., 2000; Rai, 2000; Valian, 1998; Wylie, 1995). In addition, these inequities increase as women achieve higher education and status (American Association of University Women, 2004; Kite et al., 2001; Krefting, 2003). For example, AACSB, the accrediting body for colleges of business, reported that in 2008, gender differences were still evident, with women still found in smaller proportions in schools with graduate programs, in private institutions, in the highest paying fields, and in the highest rank, full professor (AACSB International, 2008). Research indicates that most of the variance in men and women's career achievements such as pay and rank is discrimination-based (Reskin, 1977; Robinson, 1973; Toren, 1990), with organizational variables and gender role stereotypes often affecting women's opportunities as well as evaluations of their work (e.g., Blum, Fields & Goodman, 1994; Fitzgerald, Hulin & Drasgow, 1995). For instance, women, including those at universities, are consistently underrated, particularly when doing "men's" work (Heilman & Haynes, 2005; Heilman, et al., 2004; Krieger, 1995; Swim et al., 1989; Valian, 1998).

Despite statistics that clearly indicate discrimination at universities is still a problem, women entering academia expect to be treated fairly, as indicated in two recent articles based on a qualitative study that consisted of interviews with fourteen female faculty and students who sued their universities for sex discrimination (Goltz, 2005a, 2005b). One of these articles examined how the women sought to address the inequities they faced at their universities and what resulted from this (Goltz, 2005b). The article found that the women made multiple and varied attempts to address their situations at their universities, but their informal appeals were ignored, and the formal appeals systems at their universities were problematic (Goltz, 2005b).

Results of the other article based on this data (Goltz, 2005a) will be described in greater detail since it stimulated the present investigation. This study examined what expectations the women developed when they chose to enter their particular universities and how they discovered that their expectations were violated. Results from this study suggested that, upon entering their universities, the women expected to exchange their abilities and hard work for the organization's provision of an environment that would foster success as well as provide rewards for that success. For instance, one woman indicated her negotiated psychological contract this way: "Their expectations seemed reasonable in terms of research. So I thought if I worked hard and if I had reasonable success in publication, that I had a good chance at achieving tenure." These expectations were not met when women found they had to work in a difficult environment with inadequate resources and also experienced few rewards from the organization for their achievements. For instance, one interviewee said: "During job searches for open positions in the department, there never was the apparent enthusiasm for a female candidate as there would be for a male candidate, when I would be looking at it thinking, what's he got that's so great?" These kinds of experiences violated the initial expectations the women had formed of a fair university

environment with equal distributions of resources and equitable distributions of rewards. Note that the interviews indicated that the women's assessment of the inequities were not based solely on their perceptions of their own situations, but also included reviewing patterns across the university and across time (Goltz, 2005a). When the women sensed the university had not delivered their part of the exchange, they often sought additional information on context that helped them assess the reasons for this. One type of contextual factor was the pattern of treatment by the university across male and female colleagues. Eleven women reported noticing not only that they were not treated well, but also that other women at the university were not treated as well as male cohorts with equivalent or lesser qualifications and achievements. Women also reported observing many different types of discriminatory treatment at the university and in their individual departments, as well as noticing that some of these behaviors were repeated across time, sometimes by the same people and sometimes by different people. This use of benchmarking by the women, such as in comparisons with the performance of male colleagues, indicates that the women verified their perceptions with additional data.

In order to examine these two research questions concerning the women's expectations, it is helpful to first review literatures that provide insight into the formation of specific beliefs about fair exchanges in the workplace, as well as literature that indicates likely responses to experiences of unfairness. The literature on how exchanges in the workplace are developed and perceived will be reviewed first, followed by a discussion of individual and contextual influences on equity sensitivity. Literature indicating likely responses to perceived unfairness will be reviewed last.

The Development of Beliefs about Workplace Exchanges

In terms of understanding the development of fairness expectations specifically related to the workplace, researchers of organizational justice have relied on the literature on psychological contracts (Cropanzano & Prehar, 2001). Organizational justice beliefs are thought to be based on a negotiated "fair" exchange between two parties, called a psychological contract (Rousseau, 1995). For instance, applicants determine how well they match up to what an organization desires from them and what it has to offer in exchange (Breaugh & Starke, 2000). Once the employee is hired, the organization and worker have expectations of each other based on their negotiations during recruitment, such as future commitments and obligations of each party, which may be renegotiated at different points after the employee has been hired. (Rousseau, 1995; Rousseau & Parks, 1993; Turnley & Feldman, 1999). Psychological contracts are based on people's perceptions of the exchange rather than on what actually occurred. Thus, two different employees with the same actual contract with an organization may have different psychological contracts because of their different understandings of it (Rousseau, 2001).

Aside from differences due to differing perceptions, psychological contracts can differ among people for several other reasons. First, psychological contracts can be based on one of two orientations that parallel the concepts of interactional and distributive justice. Relational contracts evolve over time based on interactions and relationships; transactional contracts are more short-term and outcomes focused

(Herriot & Pemberton, 1996; Rousseau, 1995; Saunders & Thornhill, 2006). In addition, psychological contracts might change over time because of changes in interpretations of a contract, or due to responses to organizational change or both (Rousseau & Parks, 1993; Saunders & Thornhill, 2006). Finally, psychological contracts can be based on what has been called “the idiosyncratic deal” (p. 160, Rousseau, 2001), which is an individualized arrangement between a worker and the employer that varies from the employer’s arrangement with other workers. This deal not only affects the psychological contract of the worker who negotiated it, but also can affect perceptions of fairness by other workers, who may view this inconsistent treatment of workers as unfair (Rousseau, 2001).

Individual and Contextual Factors in Equity Sensitivity

Not only can psychological contracts in the workplace differ for varying individuals, individual sensitivity to fairness in the workplace can be very different as well. Moral reasoning is affected by genetic variables such as inherited reactivity (e.g., Enright et al., 1980; Kagan, 2005), individual differences that may be context-related such as equity sensitivity (e.g., Huseman, Hatfield & Miles, 1985, 1987; Kickul, Gundry & Posig, 2005; Mudrack, Mason & Stepanski, 1999), and contextual and social variables such as behavioral modeling and social class (e.g., Bandura & McDonald, 1963; Enright, Enright & Lapsley, 1981). As a result of these individual and social factors, the degree to which individuals value justice and the degree to which they see the world as being a just place can differ substantially (e.g., Huseman, et al., 1985, 1987; Lerner, 1980; Rupp, Byrne, & Wadlington, 2003). For instance, individuals higher in “justice orientation,” are more sensitive to justice issues, as are “entitleds,” who are constantly looking for ways to improve their situations as compared with others (Huseman et al., 1985, 1987; Rupp et al., 2003). In contrast, individuals lower in justice orientation and those who are more focused on “giving” are less troubled by unfair treatment (Huseman et al., 1985, 1987; Rupp et al., 2003). In addition, individuals who strongly believe in a just world typically perceive less unfairness, even with personal misfortune because they usually attribute the responsibility for the misfortune to the victim (Dalbert, 1998; Hafer & Olson, 1998).

Thus, we might expect these sensitive individuals to constantly monitor and enforce contract compliance by the other party, exhibiting a tendency for low trust. Trust has been studied and defined in the literature as positive expectations of the intentions or behaviors of others (Rousseau et al., 1998). However, it should be kept in mind that individual differences in sensitivity to justice and therefore the predisposition to trust can be affected by contextual factors. For instance, Kickul et al. (2005) found that equity sensitivity no longer had effects on perceptions of organizational justice when trust was high in the organization. In other words, high justice sensitivity by individuals can be overcome by what has been called institution-based trust, which refers to the promotion of trust through institutional factors, such as the ethical culture of an organization or the laws of a society that can deter behaviors based on self-interest (Rousseau et al., 1998).

Responses to Unexpected Unfairness

Research indicated that violations of psychological contract expectations can occur when the organization either knowingly breaks a promise or when the employee and organization have different understandings about what the employee was promised (Morrison & Robinson, 1997; Rousseau, 1995). Like other experiences of adversity (e.g., see Stoner & Gilligan, 2002), breaches of contracts can induce disillusionment followed by reflection and can invoke a variety of emotions including confusion, concern, and resentment, then stimulate workers to reinterpret the contracts (Saunders & Thornhill, 2006). In addition, these breaches are thought to affect the formation of future contracts and concepts of organizational justice (Alexander, Sinclair & Tetrick, 1995; Cropanzano & Prehar, 2001). These findings are consistent with the literature on cognitive dissonance, which indicates that individuals will become anxious after experiencing inconsistencies such as information or events inconsistent with beliefs or expectations (Bramel, 1968; Festinger, 1957, 1964). The model of cognitive dissonance predicts that not only will people be psychologically uncomfortable with these inconsistencies, but that they are also motivated to try to reduce the dissonance.

Strong belief in a just world.

Dissonance reduction can occur in many ways, but it is expected that individuals will begin with the easiest method; trying to forget about the dissonant cognitions or actively suppressing them (Hardyck & Kardusch, 1968). Thus, one option for individuals experiencing unfairness is to ignore the awareness of unfairness or to reinterpret the situation so it is perceived as being fair. For example, reinterpretation appears to be the method used by individuals with strong beliefs in a just world (introduced earlier in the section on individual differences in justice beliefs), who show greater acceptance of inequality than weak believers in a just world by finding some rationalization for the injustice by assuming the victim must have done something to deserve the outcome (e.g., Dalbert, 1998; Hafer & Olson, 1998; Furnham & Gunter, 1984; Glennon & Joseph, 1993; Smith, 1985).

Wright (1994) suggested that people's tendency to have selective perception at times, including self-deception, probably evolved over time through natural selection principles because of a number of benefits that selective perception offers. For instance, strong belief in a just world is thought to enable people to confront their physical and social environment as if it were stable and orderly (Lerner & Miller, 1978). Indeed, research has found that strong belief in a just world helps individuals cope with stressors and is positively associated with life satisfaction (Dalbert, 1998; Tomaka & Blascovich, 1994). It could be argued that an example of a specific application of the strong belief in a just world that offers advantages of self-deception is the philosophy of so-called "Queen Bees" successful women that reject the notion that many of women's problems are due to discrimination and believe instead that the system is fair and that an individual succeeds on his or her own merits. This seems to occur even when Queen Bees themselves have had to overcome many obstacles to achieve their success (Staines, Tavis & Jayaratne, 1974). The attitude of Queen Bees is thought to be a way to protect their special status as tokens and to rationalize that

they have fairly earned their rewards because otherwise, they might perceive themselves to be in as precarious a position as their female colleagues (Hyde, 1991).

Belief that justice can be negotiated.

However, for some individuals, belief in a just world is too incongruent with their unfairness-related experiences to adopt as a belief system following those experiences. Thus, other dissonance-reducing options have to be explored. One possibility suggested by Kohlberg's 5th level of moral development (1969, 1971) is that individuals see the situation as unfair, but believe that fairness can be negotiated or settled through democratic processes. It could be expected that individuals use this method of reducing dissonance to make use of formal and informal ways of pursuing fairness internal to the organization. For instance, the theory of cognitive dissonance has been used to explain the behavior of whistleblowers to shape other's perceptions of wrongdoing and their reactions to it (Paul & Townsend, 1996). Research indicates most whistleblowers begin with mechanisms internal to the organization before pursuing external methods in their attempts to correct a wrongdoing (Miceli & Near, 1985).

Learned helplessness.

The internal attempts of whistleblowers are often unsuccessful, with firms ignoring or even punishing internal whistleblowers (Miceli & Near, 1994). This raises the question of how dissonance is reduced in the face of very strong evidence that fairness is not negotiable in a situation. One possibility is that individuals will then adopt the belief that unfairness is something to be expected regardless of one's efforts and accomplishments and that accepted systems, even those designed to provide justice, are inherently unfair. This belief is consistent with research on learned helplessness which indicates that the controllability of events is thought to be an important aspect of human development, without which behavioral and physiological disturbances can occur (Seligman, 1975). Individuals who experience or perceive independence between their behavior and important environmental events (such as rewards) have been found to experience symptoms such as learning difficulties, passivity, and depression (e.g., Seligman, 1975).

To summarize, the research literature in a variety of areas suggests three possible fairness expectations in the face of unfairness: 1) sometimes the world seems unfair but it really is fair (i.e., strong belief in a just world); 2) the world is fair and if it is not fair, fairness can be negotiated (Kohlberg's 5th stage), and 3) the world is unfair and outcomes are out of one's control (i.e., learned helplessness).

However, it should be noted that whichever of these beliefs individuals adopt may be affected by numerous factors, including the degree to which they are sensitive to inequity, as discussed previously (e.g., Huseman et al., 1985, 1987; Kickul et al., 2005; Mudrack, Mason & Stepanski, 1999), as well as the extent to which they can work through their disillusionment quickly and the degree to which they have the courage to act on the injustice. For example, Stoner and Gilligan (2002) found that successful managers were able to bounce back from disappointments quickly, reframe their experiences into challenges, and summon the courage to take the next step. Individuals

who are able to do this are not likely to experience learned helplessness in the face of unfairness and may also be unlikely to need to have a strong belief in a just world, instead believing that the next step is to summon the courage to negotiate fairness.

Thus, the data from the Goltz (2005a) investigation was interpreted in the context of the existing literature on the formation of psychological contracts and fairness beliefs and responses to discoveries of unfairness in the attempt to answer two questions: 1) how the women developed their initial assumptions of fair treatment and 2) how they modified these assumptions following their experiences of unfair treatment. This available data set based on qualitative methods was appropriate for the research question that was asked in this investigation because it met the criteria outlined by Bachiochi and Weiner (2002). The research was exploratory; the context and participants' interpretations were central to the research question; and the depth and richness of data was important for understanding changes in women's beliefs as a result of their discriminatory experiences. The women's comments on fairness were organized into themes that could help generate ideas for future theory and research on moral development, psychological contracts, and organizational justice. The specific methodology used in the collection and analysis of this data will be described in the next section.

Review of the Method

The Goltz (2005a, 2005b) study was based on interviews with fourteen women who experienced sex discrimination and later filed court suits against their universities after being unable to resolve their situations within the university. To ensure that the discrimination claims of the interviewees were not spurious—in other words, that actual unfairness existed—the sample was limited to women who had been plaintiffs in discrimination cases with sound legal bases as judged by a panel of eight legal professionals with experience in civil rights cases. The panel had also reviewed a number of documents provided by the plaintiff and her lawyer to establish the validity of the case. These particular cases were drawn from a set of plaintiffs of university sex discrimination cases that had been sponsored in part by a single non-profit organization (the organization required review by the panel prior to the sponsoring of each case). The organization provided the investigator with a list of the plaintiffs it had sponsored, along with contact information. All plaintiffs from the list were sent a letter inviting them to participate in the study. Approximately 40% of the women who had been sponsored by the organization indicated agreement to be interviewed for the study by signing and returning a consent form.

The women were either students or faculty at the universities they sued, which were located across the United States, and their cases concerned various types of sex discrimination, including discrimination in athletics, sexual harassment, discrimination in compensation, and discrimination in promotion. The women filed their court cases between 1980 and 1996. Seven of the cases were settled before trial, and one was settled three weeks into the trial. One plaintiff's case was dismissed for not meeting the statute of limitations. Of the remaining cases, three plaintiffs won at the lower level and two lost at the lower level. Of the cases won by the plaintiffs, two

were appealed by the university and overturned at higher levels of the court system. Both cases lost by plaintiffs at the lower level were appealed. One of these appeals was denied. However, the university provided a small settlement to the plaintiff so she would not appeal the case further. The other case was still in the appeals process when the plaintiff was interviewed. These results are consistent with research that indicated that, compared with other types of discrimination cases, employment discrimination plaintiffs win a lower proportion of hearings and trials, are more likely to have their cases appealed by defendants, and on appeal face more reversals. The results are also consistent with research that indicated that plaintiffs in academic cases fare even worse than plaintiffs in other employment discrimination cases (Clermont & Schwab, 2004; Hora, 2001; Pacholski, 1992; Valian, 1998).

The study used inductive methods meaning that no preconceived framework was used to determine the questions asked other than to draw out the sequence of events in the women's stories. The interview followed a semi-structured format in which a set of initial questions was developed to cover the women's experiences at the university, as well as their various legal experiences. Follow-up probing questions were tailored according to the women's responses. All interviews were conducted by the author. The interviews averaged 2 to 2 ½ hours in length, but varied from one to four hours, depending upon the interviewee who had control over how much or how little was said for each question. (Interviewees were given an estimate of the length beforehand, but also told that it varied by individual. Most interviewees seemed to be stimulated by a chance to have their story heard, which may have given them the energy to complete a long interview. Also, in the longer interviews breaks were occasionally taken.)

Verbatim transcripts were created and provided the basis for content analyses identifying patterns of experiences. Themes of the transcripts were analyzed using software developed for this particular methodology (QSR N5). No preconceived framework was used in the identification of themes in the interview transcripts. Instead, the women's stories were organized into emerging theme clusters that could provide a basis for generating ideas for future theory and research. Similar comments were coded as a theme and themes were then organized into larger clusters of related issues, using the tree structure included in N5. Initial themes and clusters were identified using the first few transcripts. Additional transcripts were examined using the initial themes and clusters, and if a category cluster appeared inaccurate or incomplete, additional themes were added or the cluster was reorganized in N5. Following any reorganization of categories, transcripts previously coded were reexamined and recoded if appropriate. Also, to increase the accuracy, after a cluster was coded, reports which listed all coded phrases within a theme were generated using the software and also used to examine the consistency of the coding. Items that were not coded consistently with other items within the category were recoded. One coder coded all the transcripts with the exception that a second coder coded a sample of the data to determine coding reliability. Overall interrater agreement between the coders was 69%, which is within the range acceptable for drawing tentative and cautious conclusions in exploratory studies (Krippendorff, 1980).

Results and Discussion

The present analysis used the interview transcripts primarily to explore beyond what was examined in previous investigations in terms of the development of the women's fairness beliefs before and after their encounters with discrimination at their universities. Recall that the Goltz (2005a) study reported that the women believed that the universities they joined had environments in which they could meet their goals and that they would be rewarded by their universities for their efforts (Goltz, 2005a), but also found that the women realized in retrospect that they had made an initial assumption that they would be treated fairly at their universities. However, the basis for this assumption was not explored in that study. In addition, the Goltz (2005a) and Goltz (2005b) studies described the violations of expectations the women encountered as well as how they tried to address them, but did not examine the women's discussions of changes in their beliefs about fairness following their discrimination and legal experiences. Therefore, each of these aspects are examined in this paper.

Formation of Assumptions of Fairness

Results of the current examination indicated that the women did not discuss what their universities had done to lead them to make an assumption of fairness. Instead, they discussed how the behavior they encountered at their universities was inconsistent with the values they had and how these values had developed in childhood, suggesting that the women entered their initial interactions with their universities with some level of fairness expectations that had been previously developed.

Prior development of values.

The women's comments in the Goltz (2005a) study certainly indicated that they were quite sensitive to justice issues. This may have been stimulated by organizational contexts with low trust, since justice sensitivity tends to manifest in this type of situation (Kickul et al., 2005). But their sensitivity also may have spurred from aspects of the women's individual development, as suggested by the focus of many of the women on how their experiences at their universities did not fit with their own idea that hard work is usually rewarded. Therefore, during the interviews, the women for whom work ethic was particularly important were asked how they had formed their beliefs that hard work was valued and rewarded. Their comments suggested three values emerging from their childhood experiences: 1) the value of hard work; 2) the value of education; and 3) the need for women to be self-sufficient. For instance, all three of these values were found in one woman's comments:

"From the very beginning, my parents always had expectations of us that were not like gender-based expectations. Going to college was just assumed at a time when women weren't going to college in big droves. That was the expectation in our household--that we would succeed intellectually and be able to be self-sufficient. We wouldn't have to rely on our husband or whatever was the norm in the fifties. I was brought up with a great sense of fairness, a great sense that you do what is right, and that you work hard and that you're very self-reliant kind of thing."

In addition, the interviews indicated that women with seemingly different childhoods sometimes emerged with similar values. For example, a woman who grew up in the Midwest and a woman with an Asian heritage both discussed the meaning of the work ethic in their families. The first said: “The Midwestern work ethic is you give somebody an honest day’s work. That’s what I would do. I mean, if you’re getting a penny or you’re getting ten dollars, you put in the same amount of work.” Similarly, the other said: “Ethnically, the Japanese-side of the family [says] work really hard. Do a good job. Do a really good job even if nobody recognizes it. It’s just the satisfaction of doing a good job.”

Fairness expectations upon entry

Thus, the women’s expectations that they would receive equal resources and equitable rewards at their universities was likely influenced by the values they learned from their families related to hard work, intellectual achievement, and self-sufficiency. An examination of the interviews in the Goltz (2005a, 2005b) study suggests that most of the women entered their universities in stage 5 of Kohlberg’s model. Their distributive justice expectations were, first, that everyone doing similar tasks should receive equal resources. For instance, one woman, a graduate student and softball coach, indicated her expectation of equality of resource distribution when she said:

“I didn’t even have any paid coaches, I had to ask people to volunteer . . . and yet the counterpart sport had a full-time coach, had a paid assistant coach who was full-time, had a restricted earnings coach, and a graduate assistant . . . And then scholarships . . . I usually had between four and five. Yet again, baseball had their full complement of scholarships—as many as the NC2A allowed. We slept four to a room where the guys’ teams would sleep two to a room.”

The second distributive justice aspect that emerged from the interviews was that the women expected that rewards such as promotions should be distributed based on productivity (equity) rather than aspects such as equal distribution or group relationships. For instance, three of the women said that, even though they had perceived discrimination on several occasions at their universities, they thought that they would be able to “rise above it” with hard work (Goltz, 2005a) because of their very strong beliefs that hard work would be rewarded. One woman, who was supposed to be part-time, worked ten and twelve-hour days. Another regularly took her labs home, dissecting in her kitchen.

The women’s frequent references to expecting to be rewarded for their hard work could be interpreted to mean that they wanted their effort, rather than their performance rewarded, and as is known from expectancy theory of motivation, effort does not always lead to performance (e.g., Porter & Lawler, 1968; Vroom, 1964). While this is a possibility, there are many indications that the women were referring to an expectation that their performance, not just effort, would be rewarded. Although the women did discuss the extra hours they put in and the additional tasks they took on which indicate effort, they also discussed their achievements, such as the scholarly articles they had published, graduate students they had trained, and

grants and high-scoring teaching evaluations they had received (Goltz, 2005a). In addition, they reported comparing their own records with the records of their male colleagues (Goltz, 2005a).

Initial Responses to Violations of Expectations

However, resources at their universities appeared to have been distributed based on factors other than equality, and rewards appeared to have been distributed based on factors other than equity. These other factors included the recipient's gender or the recipient's relationships with power holders. For instance, one woman said of a male colleague: "They hired him at a higher salary. And I already had more publications than he did." Given their underlying beliefs, the women were often surprised and quite angry when equal resources and equitable rewards were not forthcoming (Goltz, 2005b). The women reported that they and their loved ones experienced emotional pain, financial hardship, and physical illness. While the women's hardships may not be entirely due to their discrimination experiences, the hardships they described are consistent with research indicating that the more individuals perceive discrimination, the more they report feeling negative emotions and physical symptoms and that sex discrimination accounts for additional variance in women's physical and psychiatric symptoms, above-and-beyond that accounted for by generic stressors (Foster, 2000; Landrine et al., 1995).

These very negative emotions and symptoms of individuals experiencing discrimination, such as the women in the present investigation, indicate that more might be occurring than the psychological discomfort predicted by the literatures on cognitive dissonance and psychological contracts violations. In addition, the outcomes individuals lose as a result of discrimination may not fully account for all their negative experiences. Instead, the degree of negative emotional and physical experiences of the women in the current study, as well as those in past studies on discrimination, suggest support for Lind's (2001) notion that what is basic to all perceptions of fairness and unfairness is a judgment about the strength of a relationship with a group or organization and that people experiencing unfairness are less affected by the material payoff they felt entitled to than by the feeling of rejection they perceived from the group or organization. In other words, using language from the psychological contracts and organizational justice literatures, even though the women focused a lot on the transactional (distributive) aspects of the unfairness they experienced during their interviews, the emotional and physical responses they described indicated that perhaps the unfair outcomes experienced were less important to them than the relational (interactive) aspects of the unfairness.

Regardless of their many negative experiences, all of the women in the Goltz (2005a) study sought to address their experiences of discrimination repeatedly, both informally and formally, within the accepted social systems at their universities as well as in the justice system. This indicates that they were able to work through their disappointment quickly enough to be able to take action to seek justice, similar to the successful managers who were found to be able to quickly reframe their disappointments as challenges (Stoner & Gilligan, 2002). Also, as the Goltz (2005b) article indicates, at least at the beginning of their efforts, they truly believed they

would succeed in rectifying their situations. For instance, one woman said of her repeated attempts to address her situation: “I was hoping that they would realize that, yes, what had happened was clearly not right. I felt like, they’re going to see the light and they’re going to treat me the same way that they treated those guys and somehow, I’ll get a position.” This behavior suggests moral reasoning that has reached at least the 5th level of Kohlberg’s model, where there is awareness that justice may not always be forthcoming given different value systems, a belief that justice sometimes has to be negotiated, and a belief that this should occur through accepted means. Thus, the women appeared to still be predominately at the 5th level of Kohlberg’s model during this period.

Modification of Expectations Following Failure of Initial Responses

The women’s beliefs that even when justice is not present, it can be still negotiated within accepted systems were also challenged since their repeated attempts at both informal and formal appeals processes within their universities were fruitless (Goltz, 2005b). In fact, their experiences are consistent with research on what has been termed the “deaf ear” syndrome meaning that although organizations have been introducing more ways for employees to voice complaints, they often fail to respond to complaints, particularly informal ones (Harlos, 2001), but formal complaints rarely result in changes either (Nielsen, 2000). Also, note that opportunities for voice have been found to be related to justice perceptions even without the presence of distributive justice (Cawley, Keeping & Levy, 1998). Thus, the “deaf ear” syndrome represents another missed opportunity by universities for creating perceptions of justice. These missed opportunities by universities no doubt served to erode the women’s institutional trust further because the mechanisms that were supposed to protect employees were not functioning effectively. This is consistent with research indicating that institutional controls not only can foster trust, but also can undermine it, particularly when organizations substitute legalistic, rigid responses to conflict for more personal, flexible forms of trust and conflict management (Rousseau et al., 1998; Sitkin & Bies, 1994; Zucker, 1986).

In addition, the women’s experiences and behavior is consistent with Goldman’s (2003) finding about the relationship between justice and filing legal claims for workplace discrimination: claimants are more likely to turn to the legal system when distributive, procedural, and interactional justice are all low. However, these women’s experiences in the legal system were only slightly better than their experiences at their universities. The legal system was characterized by delays and game-playing, but the women found that the system was actually effective for accessing information about their situations via the discovery process. Just over half of the women obtained settlements. The remaining women were almost evenly split in terms of winning or losing their cases, and all but one of the women who won their court cases had their case overturned on appeals. The women’s university discrimination and appeals experiences, while inconsistent with their own expectations of fair treatment, as well as their expectations that fairness could be negotiated, were very consistent with evidence of discrimination in academia as well as with discussions of biases in the university appeals systems (e.g., Bisom-Rapp, 1999; Edelman et al., 1999) and the

justice system (e.g., Dusky, 1996; Maloney, 1993).

An interesting question is whether the women were able to modify their original beliefs about fairness to represent reality more accurately following their experiences. As discussed previously, the possibilities from the literature on beliefs in the face of unfairness indicate the women might have: 1) continued to believe in a just world (requiring they believe they deserved their experiences); or 2) experienced learned helplessness. The women's comments in their interviews suggested these experiences of injustice and of not being able to successfully negotiate justice within their universities or the legal system did lead to modifications in their belief systems. However, the interviews indicated that none of the women believed they deserved their experiences. This is not surprising given that the characteristics of the sample of women in the study (i.e., women who believed they deserved the inequitable treatment), probably would not have sued their universities. There were occasional indications in the interviews of attitudes similar to what might be found with learned helplessness. For instance, one woman said: "I thought sort of this work ethic: you work really hard and you get rewarded. And now I think you can work really hard and not get rewarded and work really hard and get tremendously rewarded." Her comments are consistent with the notion of the lack of a correlation between behavior and outcomes that is found in individuals with learned helplessness. However, despite the women's acknowledgement of this lack of correlation, they did not display the passivity found in learned helplessness.

For the most part, the women's comments indicated their experiences appear to have stimulated them to begin to move into Kohlberg's stage 6, in which there is an awareness that democratic processes alone do not often result in outcomes that are just. As the women frequently discussed with regard to both systems, they discovered that processes which appear to be just can be quite unjust in reality. For example, one woman said of her university's grievance procedure: "The University had rules on grievances, and they violated those left and right. I don't even remember them, but it generated a list of twenty or thirty precise things that they were supposed to do that they didn't bother to do." Even at their best, these socially accepted systems do not appear to change the status quo. As one woman said, "Probably slightly more often than not, they get it right, but maybe not. The people who win, and the people who lose, if you reversed them, would probably, like with tenure, end up with about the same picture."

So how did the women cope with the challenge to their belief system that at some point, justice would be forthcoming? Kohlberg's model suggests that, at this point, the women might have concluded that it is alright to go outside established social systems to follow moral principles. This is moral reasoning representative of stage 6, in which universal principles take precedence over social contracts, endorsing civil disobedience. Although the need for laws and democratic processes is recognized, laws are viewed as valid insofar as they are grounded in justice, and a commitment to justice carries an obligation to disobey unjust laws. However, that stage is currently viewed as "theoretical" since research indicates that Kohlberg's stage 6 might be problematic, with few individuals found to consistently able to reason at this stage (Colby et al., 1983).

Although the women in the Goltz (2005a, 2005b) study did hold universal principles of justice and did change their beliefs that justice could be negotiated within accepted social systems, they did not then appear to endorse or participate in civil disobedience as a result. Instead, most believed that it was important for individuals to continue to stand up for these principles within the accepted systems. There were two reasons for this. First, the women felt that the simple process of standing up for oneself and for one's principles was very important, not only for themselves, but also for others. According to the interviews, probably the most immediate and memorable aspect of seeking justice was that this allowed the women to obtain material that helped show to themselves and others what happened to them and that it was not just. For instance, one woman said, "It was the only thing I could have done. . . I think there was some benefit to it . . . pushing it through and at least getting something out there that it wasn't my fault." Another woman, who lost her case and was appealing it at the time of the interview said: "I didn't do anything wrong by standing up. I wouldn't change. A lot of people say I wouldn't start again if I would have known. No, no, no. You've got to stand up!" Even the one woman who was able to win her case and not get it reversed on appeal noted that it wasn't the win, but the process that was the most important aspect of her case. Her attorney had told her: "Even more than [it being the highlight of my career], is the opportunity that my daughter had to meet you and to see what it is to stand up for something you believe in." This public aspect of their cases was a significant part of the meaningfulness of standing up. As one woman put it: "There's always going to be a part of me that feels that by fighting this lawsuit I made a contribution to a cause that was larger than myself, that has the potential for helping other people, and that certainly has educated other people."

Second, despite very difficult experiences that took a toll on their lives in many ways, the women still believed in the need for people to continue to pursue justice through accepted means because they believed that these systems would eventually change, albeit very slowly. The women noted that, in general, the changes their universities made in response to their lawsuits were few and superficial. However, although the changes the women saw were minimal, at least some occurred, which hadn't happened often before their appeals and lawsuits. As one woman put it: "It did force them to have to deal with some of these issues, even if it was at a window dressing level. They at least had the inconvenience." Still, most of the women were disappointed in the superficiality of the changes. As another woman said, "It's, let's have meetings, let's have forums, let's have a speaker, let's shuffle paper around, but let's not do the thing that really counts, which is to get the women the positions or get rid of the guys that are responsible for the whole thing." She went on to talk about how a man who was sued by two women was rewarded by the university with a promotion to dean of the medical school. As a result of experiences like this, most of the women perceived that what they were battling was far bigger than themselves and far more difficult to change. As one woman concluded, "institutions change the women far more than the women change the institutions." Another woman attributed this slow response by universities as being due to the fact that universities are made up of hundreds and hundreds of people with biases, but university administrators fail to see that, in part because these people reflect aspects of themselves. She said, "It's a

slow-changing culture and people tend to hire like-minded people,” and explained that she didn’t expect that, in her lifetime, the people at the university she sued would have the self-reflection that happened at MIT (referring to the response to discrimination at MIT that received media attention—e.g., Miller & Wilson, 1999), even with lawsuits that should serve to stimulate that self-reflection.

Research Implications and Conclusion

To summarize, results suggested that the women’s expectations of fairness arose in part from three values emerging from their childhood experiences: 1) the value of hard work; 2) the value of education; and 3) the need for women to be self-sufficient. The women’s descriptions of the unfairness they experienced focused primarily on the transactional (distributive) aspects. However, the emotional and physical responses they described indicated that perhaps the unfair outcomes experienced were less important to them than the relational (interactive) aspects of the unfairness—in other words, the feelings of rejection. In addition, the interviews indicated the women were initially in stage 5 of Kohlberg’s model of moral development, where the distributive justice belief is that everyone doing similar tasks should receive equal resources and rewards should be based on performance. If this doesn’t occur, then justice can be negotiated in accepted social systems. Following their experiences, however, the women had the belief that this is not always the case, but that people should continue to pursue justice through accepted means for two reasons. First, the women felt that this process allows victims to demonstrate to themselves and to others that what they experienced was an injustice. Second, the women believed that if enough people pursue justice through these means, then the systems will eventually change, albeit very slowly.

The tendency of research on organizational justice and psychological contracts has been to focus on dependent variables of greatest interest to managers, even to the extent of examining creating perceptions of fairness when inequities actually exist. As a result, these literatures have not adequately considered the formation of these beliefs over longer periods of time, nor have they considered the impact of contract violations on individuals beyond the context of the workplace. For instance, although the violation of psychological contracts is expected to impact work-related attitudes, behaviors, and future psychological contracts in the workplace (e.g., Alexander et al., 1995; Cropanzano & Prehar, 2001; Saunders & Thornhill, 2006), little has been said in the organizational justice literature about how inequities and the violation of psychological contracts might affect individuals’ moral development.

The women’s comments about fairness suggest a progression that could be further explored in research into the development of expectations about fair treatment. The women showed a convergence in the prior development of their values. It was clear that the women were sensitive to being treated fairly, perhaps partially as a result of these developmental processes. In particular, they believed their investments in hard work and education would bring self-sufficiency. Their definition of fair treatment at their universities consisted of being provided equal resources and equitable rewards as compared with their peers, especially male colleagues. After their experiences of

discrimination as well as unsuccessful experiences with their university appeals systems and the legal system, they abandoned their beliefs that justice can usually be negotiated within accepted systems, but they did not form beliefs that one should go outside the accepted process. Instead, they felt that these processes had the immediate benefit to allow women to stand up for fair treatment and educate others about unfair situations. In addition, they believed that if people continued to use these processes, eventually, over a long period of time—which may not even be in their own lifetimes—changes would occur.

These results are instructive in a number of ways because, while some of the women's experiences are consistent with past models and research into fairness beliefs, results also indicate a number of areas needing further theory and research. First, the results indicated that the women, although coming from different childhood experiences, all believed that investing in education and hard work would be rewarded and would lead to self-sufficiency. When joining their universities, they formed psychological contracts that indicated an expectation that the university would provide equal resources, but equitable rewards. The justice literatures indicate a variety of possible criteria used to measure the fairness of distributing resources and that the criteria used are very context dependent. One context that hasn't been examined much in this literature is previous developmental experience. In other words, perhaps the women's expectations of equal resources and equitable rewards were very much based on the values of education and hard work developed in their childhoods. Certainly, further research on the relationship between prior values development and the development of psychological contracts or justice perceptions is warranted.

Another interesting aspect of the present investigation is that although the women focused to a large extent on their unequal resources and inequitable rewards, which appear to be mostly related to distributive (transactional) aspects of justice, their emotional responses to these injustices suggest that they were probably reacting as much to the relationship aspects of the inequities, consistent with what Lind (2001) suggested as being basic to all definitions of unfairness. This indicates that perhaps people are more comfortable discussing the distributive aspects of the unfairness they experienced than they are discussing the rejection they felt. Thus, the present results suggest that more research is warranted into the effects of perceptions of distributive, procedural, and interactional justice on individuals' feelings of rejection. This research should not be limited to self-reports since individuals may not be likely to report the rejection from the group they are primarily responding to.

Finally, the women's modified beliefs about pursuing fairness that resulted from their experiences are instructive, indicating another alternative fairness expectation that should receive more attention in the literatures on justice expectations and moral development. This expectation of fairness can be summarized as follows. The world can be very unfair and can seem to remain that way even after individual attempts to change it, but in the long run, many individual attempts will add up, resulting in slow, evolutionary change and it is one's responsibility to be part of this process. This conclusion is more cognitively complex than stage 5 moral reasoning, learned helplessness, or strong belief in a just world. Furthermore, it is more representative of reality, and, unlike Kohlberg's stage 6, it does not require that justice be sought outside

socially established processes. It does require the individual to have patience and subsume immediate individual justice for eventual justice across society, however. Given the research that indicates mixed support for stage 6 of Kohlberg's (1969, 1971) model, it might be productive to research whether the belief the women arrived at as a result of their experiences might be more characteristic of stage 6 reasoning than is civil disobedience. Another possibility is that stage 6 as described in Kohlberg's model may be more characteristic of men, which is entirely possible given that Kohlberg based his model on data from men (Gilligan, 1982).

In conclusion, examining what happens when individuals who had perceived a fair situation discover that the situation is in fact unfair can be productive in identifying areas for further research and theory. The present study revealed that at least three areas needing further theory development and research are: 1) how the prior development of values might affect psychological contracts and the criteria used in distributive justice beliefs in the workplace; 2) whether in certain types of unfair experiences such as discrimination individuals are reacting more to the relational implications (i.e., group belonging) than they are to the distributive, transactional aspects; and 3) whether the modifications in beliefs the women reported might be more representative of moral reasoning at the 6th stage of Kohlberg's model.

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