

The Effects of Trait Positive Affect on Autonomy and Task Cohesion: The Moderating Roles of Individual Affective Dissimilarity and Group Affective Diversity

Moon Joung Kim*

*Seoul National University
Seoul, Korea*

Abstract

In the present study, I examine how an individual's trait positive affect (TPA) may interact with those of group members to generate important individual outcomes, such as autonomy and task cohesion. The proposed multilevel moderated mediation framework was tested using data collected from 293 employees in 66 workgroups. Results demonstrated that the indirect effect of TPA on task cohesion through autonomy is stronger when individual affective dissimilarity is low and group affective diversity is high. The analysis also confirmed the role of autonomy as the mediating mechanism between TPA and task cohesion.

Keywords: trait positive affect, affective dissimilarity, affective diversity, autonomy, task cohesion

With the rise of team-based organizations, individuals are likely to work with people from different backgrounds, who have different perspectives and distinct emotions in collaborative and interdependent relationships (Williams, Parker, and Turner 2007). As dealing with differences becomes increasingly important, a topic that warrants attention is the effects of a person's dissimilarity to others in the work group on the psychological and behavioral

* Visiting Researcher, Institute of Industrial Relations, Seoul National University,
E-mail : mjkim1@snu.ac.kr

outcomes of the dissimilar person (Chattopadhyay 2003). Although surface-level, demographic differences have been the main focus of the literature (Tsui and O'Reilly 1989), dissimilarities in the deep-level, psychological features are now garnering more attention (Harrison et al. 2002).

Beyond simple demographic characteristics, trait affect—a stable and enduring personality trait expressed by the tendency to respond to situations in a positive or negative way (Kaplan et al. 2009)—is a valid and defining feature of an individual member's personal characteristics by which people identify differences (Barsade and Gibson 1998; Huang 2009). By having a positive or negative frame of mind, trait affect is found to play a significant role with regard to the individual's work attitudes and behaviors (Barsade and Gibson 1998; Ng and Sorensen 2012). Despite its importance, the implications of affective dissimilarity in groups have rarely been studied in relational demography and group diversity literature (Barsade et al. 2000). As such, in the present study I aim to figure out how an individual's trait affect may interact with those of group members to generate important individual outcomes, such as autonomy and task cohesion.

Task cohesion is defined as commitment of group members to the task environment in which the group is working (Bernthal and Insko 1993; Zaccaro 1991). Unlike social cohesion, which is built upon the commonalities within homogeneous groups, task cohesion based upon the task rather than the social aspects of the group, has been suggested as a more appropriate concept for diverse groups (Knouse 2006). In order to capitalize on the diversity of its members and avoid suffering many of the social problems associated with subgroup identities, groups are recommended to focus on the task rather than functioning as a social entity (Salas, Bowers, and Cannon-Bowers 1995; Zaccaro, Gualtieri, and Minionis 1995). Although task cohesion has been considered an effective mechanism for bringing together diverse groups (Knouse 2006), it has rarely been examined in relation to affective dissimilarity or affective diversity in groups. By examining task cohesion as a significant outcome of affective dissimilarity in a group setting, I attempt to extend previous research on group dynamics that has overemphasized the collective nature of the group.

Furthermore, I examine autonomy, that is, regulation by the self or self-determination, as a key driver for task cohesion by using the

framework of self-determination theory (SDT; Deci and Ryan 1985, 1991). SDT is an empirical approach to motivation and personality in which autonomy is a core concept (Ryan and Deci 2006). Within SDT, autonomy reflects the quality of behavioral regulation and plays a critical role in enhancing engagement and generating wellness. When individuals experience work as being more autonomous and less controlling, they tend to be more engaged (Greguras et al. 2014; Kearney, Gebert, and Voelpel 2009). While autonomous motivation is determined to some extent by personality, it is also either facilitated or inhibited by specific social conditions. In the present study, I examine whether individuals' trait affect might influence their tendencies toward autonomous functioning, and ultimately their commitment to a task. In this process, I focus on the interplay between trait affect and affective contexts, including individual differences within the team in terms of trait affect and affective diversity, which might yield either facilitation or inhibition of autonomy.

I examine whether the effects of trait affect on task cohesion via autonomy may vary depending on the affective context by exploring multilevel dynamics. Although prior research on affect has been predominantly conducted at a single level of analysis, a multilevel approach to affect research is necessary in that affective processes in organizations are multilevel phenomena (Kim, Shin, and Kim 2013). The affective contexts surrounding individuals are found to exert a strong influence on the affective processing of those individuals' affect and their attitudes and behaviors (Barsade and Gibson 1998). In the present study, I examine whether the level of autonomous motivation experienced by individual members and their intrinsic commitment to tasks are influenced by affective situations of two distinct levels, the relational and group levels of analyses. Individual affective dissimilarity is 'a focal member's differences from other members' (Harrison and Klein 2007: 1200) whereas group-level affective diversity refers to a 'unit-level, compositional construct' operationalized by within-group standard deviation (SD) (Harrison and Klein 2007). By examining differential effects of social comparison (self-other comparison) at different levels, I identify affective contexts that may lead to enhanced autonomous motivation and task cohesion.

The present study makes the following contributions. First, I expand upon previous research by considering *affect in context*.

Although past research on affect has paid little attention to the context within which the focal person performs roles (Hackman 1992), I examine individual affect in comparison with peer affect. Individuals assess the context in which they are presenting themselves and adjust aspects of presentation according to contextual cues, by which they determine whether they are similar to their reference groups and whether their sense of self is acceptable (Boyd 2001). Second, I address the mediating psychological mechanism (autonomy) through which trait positive affect (TPA) increases task cohesion. By identifying autonomy as a key mediating mechanism between TPA and task cohesion, this study captures group processes other than social aspects in group settings. Furthermore, I incorporate multilevel perspectives and suggest that the indirect effect of TPA on task cohesion mediated by autonomy may vary depending on group affective contexts. By identifying and examining group affective contexts, this study highlights the context-dependent nature of a TPA-individual behavior relationship.

THEORETICAL BACKGROUND AND HYPOTHESES

Effects of Trait Positive Affect on Task Cohesion

Trait affect is a stable and enduring personality trait divided into two types, positive affect (PA) and negative affect (NA) (Watson 2000). Watson et al. (1999) suggests that PA and NA represent the subjective, emotional components of two basic bio-behavioral systems that have evolved to promote survival. As a manifestation of an “approach” system, termed the behavioral activation system (BAS; Carver and White 1994), PA is considered to foster the vigor, energy, and excitement that accompany reward-seeking behavior. On the contrary, NA represents the behavioral inhibition system (BIS), which is thought to promote survival by fostering avoidance-type behaviors when the organism encounters potentially threatening or aversive conditions (Kaplan et al. 2009).

Regarding affect valence, positive affect is my primary focus since negative affect has been shown to be substantially less influential than positive affect in the group context (Damen et al. 2008; McIntyre et al. 1991; Watson et al. 1992). For example, Watson et

al. (1992) found no consistent relationship between negative affect and various social processes, while finding consistent relationships involving positive affect. Damen et al. (2008) also demonstrated that positive affect is more important than its counterpart, negative affect, when focusing on social interaction and affect congruency effects. Although, semantically, negative affect may suggest the theoretical possibility of the opposite situation of positive affect, negative affect may be more related to internal states, such as stress and psychopathology, but not to diverse indicators of social activity and interpersonal satisfaction in the group context (Barsade et al. 2000).

As an approach system, PA has been theoretically suggested to lead to an array of positive outcomes, such as enhanced task cohesion as well as increased social cohesion. However, it is not easy to find an isolated hypothesis on the effect of PA on task cohesion. Although task cohesion is recently getting more attention because it emphasizes getting the job done above all else and encourages the leveraging of heterogeneous skill sets in diverse groups, thus being a better predictor for performance than a group cheer (Knouse 2006), both types of cohesion are closely intertwined. Those high on PA tend to enjoy the activities in which they are engaged and also enjoy strong social interactions with others, which again elicits an increase in the shared commitment to the task among group members (Tellegen 1985; Thorensen et al. 2003).

Empirically, it is not easy to draw a conclusion regarding the relationship between PA and task cohesion. There has been a substantial lack of empirical research on them, and the results of those few studies have been inconsistent. For example, a relevant piece of research done by van Vianen and De Dreu (2001) examines the relationships between the Big Five personality traits, social and task cohesion, and team performance, suggesting that high mean levels of emotional stability (that is often used as a reverse proxy for NA) contributed positively to task cohesion. High mean levels of extraversion (that is often used as a proxy for PA), however, contributed positively to social cohesion, but not to task cohesion. Another relevant study done by Erdheim (2007) used state affect as an indicator of team composition, reporting that mean state PA was not related to task cohesion, but maximum PA was significantly related to task cohesion ($\beta=.18$, $p < .05$). Acknowledging weaknesses surrounding laboratory experiments, Erdheim (2007) suggests that

future studies consider trait affect, instead of state affect, in relation to cohesion, that may not have been properly measured in a short-term setting. The insufficient and inconsistent findings regarding the relationship between TPA and task cohesion highlight the importance of investigating mediating mechanisms.

Mediating Role of Autonomy

In order to further explore the mediating mechanism through which TPA enhances task cohesion, I have identified a psychological state, autonomy, as a plausible mediating mechanism. First, PA, as an approach system, is more likely to increase autonomy. Autonomy, the desire to 'self-organize experience and behavior, and to have activity be concordant with one's integrated sense of self' (Deci and Ryan 2000; Sheldon and Betencourt 2002: 27), can be achieved through forming separation and often acting against the crowd and social norms laid out by the collective, which involves the risk of social embarrassment and punishment. Given that PA is stimulated more by reward than punishment, a high PA person is more likely to take the risk of social rejection when pursuing autonomy. Those high in PA are also found to perceive less risk and feel more in control of their environment (Isen 2000; Searle and Parker 2013). Furthermore, PA is related with the concept of agency, which refers to individuals' strivings to individuate. Reflected in the tendency toward self-assertion and self-expansion, agency is found to be significantly positively related to PA (Saragovi et al. 2002). This logic leads to my first hypotheses:

H1: An individual member's TPA will be positively related to autonomy.

I further suggest that autonomy be a key driver for task cohesion within the framework of self-determination theory. According to self-determination theory, the satisfaction of the fundamental human need for autonomy ultimately determines the quality of one's motivation to engage in a task (Gagne and Deci 2005; Liu, Chen, and Yao 2011). If individuals feel in control of their actions and experience work as being more autonomous and less controlling (Greguras et al. 2014), they may concentrate on their tasks without being disturbed by their relationships with others or their

surroundings, and instead be intrinsically motivated to commit to a task environment. (Kearney, Gebert, and Voelpel 2009).

Overall, I propose that TPA indirectly predicts task cohesion by shaping autonomous motivation of individuals. Individuals' TPA, to some extent, may determine their tendencies toward autonomous functioning, and autonomous motivation is in turn likely to facilitate their engagement in a task. Those high on TPA tend to have high motivation to be themselves and choose what they want to do, and thus feel in control of their actions and experience work as being more autonomous and less controlling (Greguras et al. 2014). Since individuals who are highly autonomous rule themselves, and are not ruled by external forces, they are, in turn, more likely to be intrinsically motivated to commit to their tasks. Therefore, I assume an overall positive, indirect effect of TPA on task cohesion through autonomy. This logic leads to the following mediating hypothesis:

H2: Autonomy will mediate the relationship between TPA and task cohesion.

Moderating Roles of Individual Affective Dissimilarity and Group Affective Diversity

According to self-determination theory (SDT), autonomy can be either facilitated or diminished by social conditions as well as personality traits (Ryan and Deci 2006). The interplay between inherent tendencies and situations, therefore, has been focused within the SDT framework. In the present study, I examine two types of affective conditions, that is, individual affective dissimilarity and group affective diversity. Affective dissimilarity is defined as differences in TPA between a focal member and the rest of the group (Harrison and Klein 2007: 1200) and group-level affective diversity is a 'unit-level, compositional construct' operationalized by within-group standard deviation (SD) (Harrison and Klein 2007). I examine whether these two types of affective conditions interact with TPA and serve to either facilitate or to hinder the autonomy of individuals.

Both individual affective dissimilarity and group affective diversity are relevant to the notion of social comparison (self-other comparisons), but the major difference between these two conditions is related to the self-construal level that is salient (Stapel and Zee 2006). According to Stapel and Zee (2006), other-to-self effect is

suggested to be determined by the self-construal level that is salient (personal, relational, collective) during information processing. For example, when a relational self is activated, individuals would be most concerned with the regulation and coordination of interpersonal interactions (Stapel and Zee 2006; Tiedens and Jimenez 2003). However, when a personal self is activated, people would be more concerned with individual traits and motivations rather than affiliative issues (Stapel and Zee 2006). I suggest that individual affective dissimilarity and group affective diversity activate a relational self and a personal self, respectively.

As a relational difference in TPA, individual affective dissimilarity is expected to activate a relational self that is mostly concerned with coordinating interpersonal interactions (Stapel and Zee 2006) and is also expected to hinder the tendencies toward the autonomous functioning of the focal person's TPA. According to similarity-attraction theory (Byrne 1971), individuals prefer similar others and similarity basically determines interpersonal attraction (Berscheid and Reis 1998). Affective dissimilarity, therefore, may have negative effects on the affiliative outcome (i.e., interpersonal conflict or weak social bonding) of the focal member. Empirical evidence also shows that affective dissimilarity significantly reduces an individual's satisfaction with the group and lowers self-perception of one's influence in the group (Barsade et al. 2000). Since negative social exchanges are found to undermine a person's sense of autonomy (Diehl et al. 2003), affective dissimilarity is hypothesized to reduce the autonomy of the focal person.

In addition, a situation in which a focal person stands out from the rest of the group may be interpreted as an "unsafe" environment where one can be oneself without being judged. In the context of trait activation theory (Tett and Burnett 2003; Tett and Guterman 2000), which proposes that individuals express their traits in an environment that values such trait expression (Johnson and Schneider 2013), a focal person who is affectively dissimilar from the rest of the group is less likely to express the tendencies toward autonomous functioning of TPA in a context wherein such traits seem inappropriate and out of place. Therefore, based on similarity-attraction theory (Byrne 1971) and trait activation theory (Tett and Burnett 2003; Tett and Guterman 2000), I generate the following hypothesis:

H3a: The relationship between an individual member's TPA and autonomy will be negatively moderated by individual affective dissimilarity such that the individual member's TPA will be more negatively related to autonomy when individual affective dissimilarity is high than when it is low.

On the other hand, group affective diversity may activate a personal self and positively influence the autonomous motivation of individuals. At the group level, affective diversity refers to compositional affective differences in position among group members, operationalized at the group level by cumulating the absolute or squared distances between pairs of individuals—that is, within-group standard deviation (SD) (Harrison and Klein 2007). Since behavioral differentials between affectively similar and dissimilar members would be less pronounced in groups with high affective diversity, group affective diversity may serve as a contextual variable that individuates members and activates a personal self, allowing the autonomous functioning of TPA.

Furthermore, in the context of trait activation theory, trait expression is also determined by the strength of the situation (Tett and Burnett 2003; Tett et al. 2013). Building upon the research on strong and weak situations (Meyer, Dalal, and Bonaccio 2009), situation strength is a continuum that refers to how much clarity there is regarding what constitutes appropriate behaviors (Judge and Zapata 2015). Strong situations provide clear uniform expectations regarding appropriate behavior and thus result in low variance in behavioral responses across personality traits, ultimately attenuating personality-behavior relationships. Conversely, weak situations provide more ambiguous expectations and result in behavioral expressions that are in line with one's basic personal tendencies, amplifying personality-behavior relations (Judge and Zapata 2015). I suggest group affective diversity may serve as a weak situation under which the tendencies toward autonomous functioning of TPA can be freely expressed. This logic leads to my next hypothesis:

H3b: The relationship between an individual member's TPA and autonomy will be positively moderated by group affective diversity such that the individual member's TPA will be more positively related to autonomy when group affective diversity is high than

when it is low.

Mediations Moderated by Individual Affective Dissimilarity and Group Affective Diversity

In the present study, I assume an overall positive effect of TPA on task cohesion via autonomy in the absence of specific contingencies and propose individual affective dissimilarity and group affective diversity as contingency factors that may negatively or positively moderate the relationship between TPA and autonomy. In extending Hypotheses 3a and 3b, I further propose that TPA may be positively related to task cohesion through autonomy depending on the degrees of individual affective dissimilarity and group affective diversity. The indirect effect of TPA on task cohesion through autonomy is expected to be moderated by individual affective dissimilarity and group affective diversity. When individual affective dissimilarity is high, those on high TPA may interpret their situations as unsafe, and suppress the natural expression of their autonomous tendencies. Conversely, when group affective diversity is high, those high on TPA may interpret their situations as normal, and naturally express their autonomous motivation and actively engage in their task environment. Finally, I propose the following moderated mediation hypotheses.

H4a: Individual affective dissimilarity will negatively moderate the indirect effect of TPA on task cohesion through autonomy, such that the indirect effect will be less positive when individual affective dissimilarity is high rather than when it is low.

H4b: Group affective diversity will positively moderate the indirect effect of TPA on task cohesion through autonomy, such that the indirect effect will be more positive when group affective diversity is high than when it is low.

METHODS

Research Setting, Participants, and Procedures

The sample of the present study was drawn from four companies (a semiconductor equipment manufacturing company, a flat panel

display equipment manufacturing company, a vacuum technology company, and a marine and fire insurance company) in Korea, during a two-week period in May, 2013. All of the companies employed a team-based structure and team-level performance-based incentives. Members of the same team who were physically collocated interacted on a daily basis. The participants performed various functions including sales, human resources, finance, research and development, production, and quality control.

Incomplete forms were excluded from the initial sample of 459 employees from 68 teams, and the final analysis sample was composed of 293 employees from 66 work teams (64% response rate). Participants' education levels were: high school (10.9%), two years of college (41%), bachelor's degree (41.3%), and graduate degree (5.1%). Their job positions were: staff (21.8%), senior staff (21.2%), assistant manager (28.3%), department manager (24.6%), and deputy general manager or higher (4.1%). The average organizational tenure of the subordinates was 4.63 years ($SD = 3.70$). The average age was 33.03 years ($SD = 5.13$) and 12.6% of the employees were female.

Measures

Study variables were assessed using multi-item scales with acceptable reliability. All items were measured on a Likert-type scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*).

Positive trait affect. To assess the trait positive affect of employees, I used 10 items taken from Positive and Negative Affect Schedule (PANAS; Watson, Clark, and Tellegan 1988). These 10 items were used to measure trait positive affect ($\alpha = .91$): "In general, I feel (1) interested, (2) excited, (3) strong, (4) enthusiastic, (5) proud, (6) inspired, (7) determined, (8) attentive, (9) active, and (10) alert."

Affective dissimilarity. Following Tsui and O'Reilly's (1989) method, I measured affective dissimilarity by using the formula for Euclidean distance:

$$\left[\frac{\sum_{j=1}^n (S_i - S_j)^2}{n} \right]^{\frac{1}{2}}$$

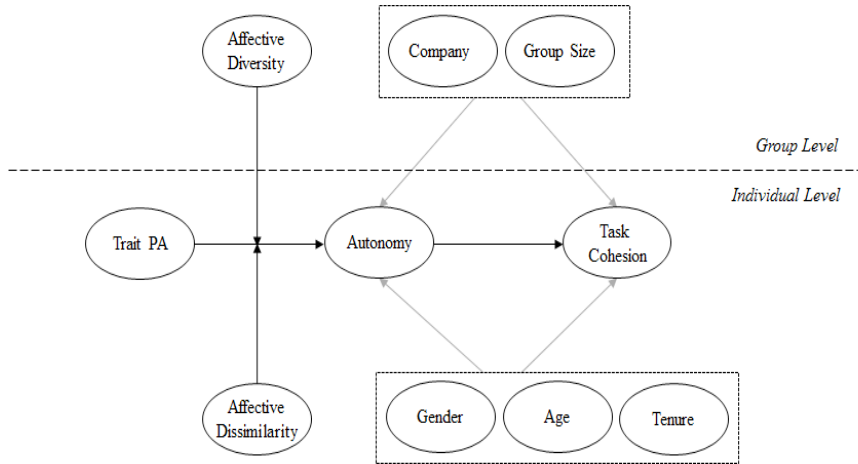


Figure 1. Research Model

Where S_i = the respondent's own score on the dimension being examined, S_j = each of the other team members' score on the dimension being examined, and n = the number of team members.

Affective diversity was measured through heterogeneity in trait affect at the group level. To measure group-level affective diversity, I used the standard deviation of members' trait affect.

Autonomy. Using a three-item measure ($\alpha = .87$) developed by Sheldon and Bettencourt (2002), I assessed the autonomy of group members. The scale included the following items: "How free and choiceful do you feel as you participate in this group?", "How much do you feel wholehearted (as opposed to feeling controlled or pressured) as you do things for this group?", and "To what extent does this group membership allow you to express your authentic self?"

Task cohesion. Carless and DePaola (2000)'s measure of Group cohesiveness has three subscales: Task cohesion, Social cohesion, and Individual attraction to the group. I used the first subscale, Task cohesion. The items ($\alpha = .81$) are: "This group is united in trying to reach its performance goals.", "I'm unhappy with my group's level of commitment to the task (R).", "Our group members

have conflicting aspirations for the group's performance (R).", and "This group does not give me enough opportunities to improve my personal performance (R)."

Control variables. In addition to the study variables described above, I included several control variables that might have significant influence on interpersonal and task-related processes (Amabile 1996; Mumford and Gustafson 1988) in the statistical analyses. Following other researchers, I controlled for gender, age, and tenure at the individual level, and company, team size, and mean level of TPA at the group level.

RESULTS

Preliminary Analyses

Confirmatory factor analysis

To examine the empirical distinctness of the study variables (i.e., trait positive affect, autonomy, task cohesion), a confirmatory factor analysis (CFA) was conducted with a maximum likelihood estimation. The results confirm the three-factor structure ($\chi^2 (df = 102) = 383.129, p < .001, \chi^2 / df = 3.756, CFI = .890, TLI = .853, RMSEA = .097$), which fits the data better than conceptually feasible alternative models do. For example, the results show that a two-factor model in which trait positive affect and autonomy are loaded onto a single factor produces a worse fit ($\chi^2 (df = 104) = 755.775, p < .001, \chi^2 / df = 7.267, CFI = .744, TLI = .665, RMSEA = .147$). Tables 1 and 2 present the descriptive statistics and intercorrelations among all study variables and control variables.

Tests of Hypotheses

I employed hierarchical linear modeling (Raudenbush and Bryk 1992) to test my hypotheses, the results of which are presented in table 3. In model 0 in table 3, I created a model that included all control variables. Among the control variables at the individual level, gender had a negatively significant relationship with autonomy ($\beta = -.58, p < .05$), suggesting that female employees had less autonomy

Table 1. Means, Standard Deviations, and Correlations: Individual Level (N=293)

Variables	M	SD	1	2	3	4	5	6	7
1. Gender	.13	.33	--						
2. Age	33.03	5.13	-.28**	--					
3. Tenure	55.65	44.41	-.05	.47**	--				
4. Trait Positive Affect	3.86	.80	-.01	.10	-.08	--			
5. Affective Dissimilarity	.89	.41	-.14*	-.01	-.20**	-.10	--		
6. Autonomy	3.53	1.10	-.19**	.07	-.06	.36**	.10	--	
7. Task Cohesion	3.84	.66	-.10	-.03	-.00	.30**	.04	.42**	--

Note. * $p < .05$; ** $p < .01$.

Table 2. Means, Standard Deviations, and Correlations: Group Level (N=66)

Variables	M	SD	1	2	3	4	5	6	7	8
1. Company 1	.63	.48	--							
2. Company 2	.09	.29	-.41**	--						
3. Company 3	.21	.41	-.66**	-.16	--					
4. Team Size	4.44	1.82	.07	-.02	-.00	--				
5. Group Affective Diversity	.70	.29	.06	.10	-.08	.02	--			
6. Aggregated Trait Positive Affect	3.87	.42	.08	-.14	.03	.17	-.22	--		
7. Aggregated Autonomy	3.53	.69	.09	.00	.02	-.01	-.09	.07	-.38**	
8. Aggregated Task Cohesion	3.84	.44	.14	-.12	-.24	.00	-.04	.01		--

Note. ** $p < .01$.

than their male team members. At the group level, group size had a negatively significant relationship with autonomy ($\beta = -.13$, $p < .01$). Famously known as 'Amazon's two pizza rule', which suggests that teams should not be larger than what two pizzas can feed, my results also support the notion that small teams make it easier to stay autonomous and decentralized by encouraging independent ideas rather than groupthink.

Hypothesis 1 suggests a direct, positive effect of TPA on autonomy. As expected, in model 1 in table 3, the analysis showed that TPA exerted a significant, positive effect on autonomy ($\beta = .45$, $p < .001$),

thus supporting hypothesis 1. Hypothesis 2 posits a mediating role of autonomy in the relationship between TPA and task cohesion. To test this hypothesis, I used the PROCESS procedure based on a bootstrapping procedure (Hayes 2013). The analysis indicated that autonomy was positively related to task cohesion ($b = .21$, 95% bias-corrected confidence interval [CI]: .1385 to .2755). Moreover, the indirect effect of TPA on task cohesion through autonomy was also significant ($b = .10$, 95% bias-corrected confidence interval [CI]: .0572 to .1613). Thus, hypothesis 2 was supported.

Hypothesis 3a proposes that individual affective dissimilarity negatively moderates the relationship between TPA and autonomy. In model 3 in table 3, the individual-level interaction between TPA and individual affective dissimilarity was found to be negatively significant ($\beta = -.55$, $p < .05$), confirming hypothesis 3a. I further probed into the significant individual-level interaction by comparing the slopes associated with high and low individual affective dissimilarity conditions (Aiken & West, 1991). Figure 2 shows that group members' TPA was positively related to autonomy when individual affective dissimilarity was low ($b = .23$, $p < .10$) but their TPA had a negative, nonsignificant relationship with autonomy when individual affective dissimilarity was high ($b = -.09$, *ns.*).

Hypothesis 3b suggests group affective diversity positively moderates the relationship between TPA and autonomy. I estimated a slope-as-outcome model in HLM to test this cross-level moderation hypothesis as shown in model 3 in table 3. The cross-level interaction between TPA and group affective diversity was strongly and positively significant ($\gamma = 1.40$, $p < .001$), supporting hypothesis 3b. I further probed into the significant cross-level interaction by comparing the slopes associated with high and low group affective diversity conditions (Aiken & West, 1991). As expected, Figure 3 shows that the relationship between group members' TPA and autonomy was positively higher when group affective diversity was high ($b = 1.77$, $p < .001$) than when it was low ($b = 1.18$, $p < .001$).

Hypotheses 4a and 4b suggest distinct conditional indirect effects of TPA on task cohesion through autonomy at different levels of affective conditions. To test these hypotheses, I used the PROCESS procedure (Hayes 2013) which provides a test for the entire moderated mediation model in an integrated analysis instead of testing it in a piecemeal fashion. More specifically, hypothesis 4a suggests that individual affective dissimilarity negatively moderates

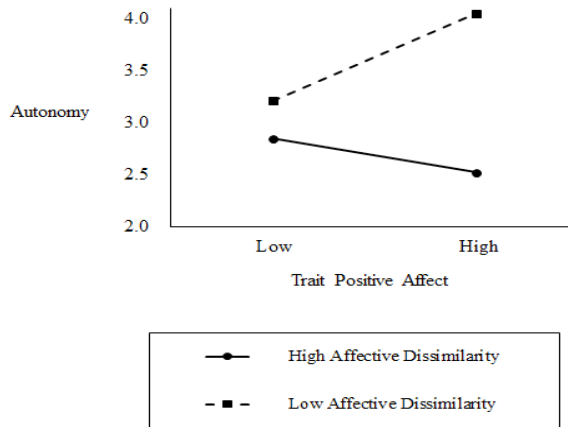


Figure 2. Individual-level Moderation by Affective Dissimilarity

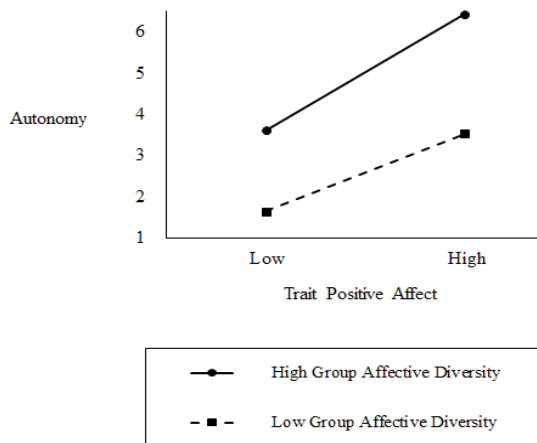


Figure 3. Cross-level Moderation by Group Affective Diversity

the indirect effect of TPA on task cohesion through autonomy, such that the indirect effect will be less positive when individual affective dissimilarity is high than when it is low. As shown in table 4, the indirect effect of TPA on task cohesion through autonomy was significantly smaller when individual affective dissimilarity was high ($b = .11$, 95% bias-corrected confidence interval [CI]: .060 to .165), supporting hypothesis 4a.

Hypothesis 4b suggests that group affective diversity positively

Table 3. Hierarchical Linear Models Predicting Autonomy

Variables	M0	M1	M2	M3
<i>Individual-level Process</i>				
Gender	-.58*	-.59*	-.57*	-.59*
Age	.00	.02	.01	.01
Tenure	-.00	.00	.00	.00
Trait Positive Affect (TPA)		.45***	.46**	-.52+
Affective Dissimilarity (AD)			.24	-.30
TPA * AD			-.06	-.55*
<i>Group-level Process</i>				
Company 1	.84+	.85+	.87*	.93*
Company 2	.44	.44	.46	.60
Company 3	.62	.66	.67	.74
Group Size	-.13**	-.13**	-.14**	-.15**
Aggregated TPA	-.08	-.07	-.06	-.06
Group Affective Diversity (GAD)				-.09
<i>Cross-level Moderation</i>				
TPA * GAD				1.40***
AD * GAD				.52
σ^2	.96	.86	.86	.82
τ	.12	.16	.15	.17
$\Delta\sigma^2$.10	.10	.15
Pseudo R ²		.06	.06	.08

Note. + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 4. Moderated Indirect Effects of Trait PA on Task Cohesion

Independent Variable	Mediator	Dependent Variable	Moderator Level	Effect	Boot SE	95% bias-corrected CI
Trait PA	Autonomy	Task Cohesion	Individual Affective Dissimilarity			
			Low	.1540	.0456	(.0763 .2584)
			High	.1056	.0266	(.0600 .1645)
			Group Affective Diversity			
			Low	.0847	.0688	(.0000 .2650)
			High	.1066	.0470	(.0362 .2302)

Note. Bootstrap sample = 10,000

moderates the indirect effect of TPA on task cohesion through autonomy. The current analytic procedure for testing conditional indirect effects cannot accommodate the nested, multi-level data structure; thus, I computed the indirect effects for three subgroups by dividing the entire sample of 66 teams into groups with low-, medium-, and high-group affective diversity. Each of the three subgroups included 22 teams. Table 4 indicates that the indirect effect of TPA on task cohesion through autonomy was significantly larger when group affective diversity was high ($b = .11$, 95% bias-corrected confidence interval [CI]: .036 to .230) than when it was low ($b = .08$, 95% bias-corrected confidence interval [CI]: .000 to .265), providing support for Hypothesis 4b.

DISCUSSION

As the workplace has become increasingly diverse, managing differences and maintaining cohesion remain a significant organizational challenge. In an effort to identify an effective mechanism for bringing together diverse groups, researchers have paid increasingly more attention to task cohesion (Knouse 2006). Unlike social cohesion, task cohesion can be facilitated in diverse groups that often suffer from a lack of social bonds. By moving beyond the social aspects of group functioning and examining task cohesion as a significant outcome of affective dynamics in groups, I attempt to identify positive effects of affective dissimilarity in a group setting. Confirming my theoretical expectations, my analysis demonstrated that TPA exerted a significant positive effect on task cohesion by increasing the autonomy of individuals. However, autonomy became a meaningful intervening process for the relationship between TPA and task cohesion when distinct types of affective contexts were fully considered. The moderated mediation analysis showed that TPA exerted a significant, positive indirect effect on task cohesion through autonomy when individual affective dissimilarity was low and group affective diversity was high. I discuss the theoretical contributions and practical implications of this study and identify the limitations that can guide future investigations.

Theoretical Contributions

By examining trait affect as a valid and defining feature of an individual member's personal characteristics by which people identify differences, I extend prior research in the relational demography and group diversity literature that has mainly focused on surface-level, demographic differences. In addition, I depart from previous research that draws heavily on the social aspects of group processes, and instead open the possibility for positive effects of affective diversity through integrating different types of mediating processes and outcomes.

Although previous studies have identified affective homogeneity, particularly the mean level of positive affect (often labeled as positive group affective tone), as a significant group affective context that positively influences various outcomes in terms of cooperation, coordination, and collective efficacy (George 1990, 1995), I focus on the possible beneficial effects of affective heterogeneity or diversity on individual performance. The reason I focus on affective diversity is that affective homogeneity has been reported to yield negative outcomes when the task requires creative problem solving and innovation (Barsade et al. 2000). In other words, affective homogeneity might help individuals develop smooth interpersonal relationships, but it may not be much help for going the extra mile or being proactive with their tasks. In examining task cohesion, that is, a going-above-and-beyond behavior in terms of tasks, group affective diversity may be more important than group affective tone even though the former has been often overlooked. While positive group affective tone (mean level of PTA) is not the focus of my study, I did control for it in my analyses to better capture the effect of group affective diversity. As I expected, the results demonstrated that positive group affective tone was not a significant factor for autonomy ($\beta = -.06, ns$) as shown in table 3.

Furthermore, I extend previous studies that have focused on the single-level effects of group composition on group processes and outcomes (Choi 2007), and incorporate multilevel perspectives (Kozlowski and Klein 2000). Through examining both individual- and cross-level dynamics involving affective group composition, I highlight the importance of investigating contingencies that encourage or impede task cohesion across levels. By theorizing and empirically validating, mediating, as well as moderating

mechanisms that explain how TPA may translate into task cohesion, I demonstrated that an individual's TPA had positive effects on the autonomy and task cohesion of the individual when individual affective dissimilarity was low and group affective diversity was high. Taken together, my findings contribute to the knowledge of "how" and "when" task cohesion could be enhanced in group settings.

Practical Implications

The present study provides valuable practical implications for team leaders and managers. Recent developments in group dynamics literature suggest that group composition is likely to be a critical input variable that has a significant impact on group effectiveness. In this study, I have suggested that the affective composition of a work group influences task cohesion through affecting the autonomy of individual members. At the relational level, individual affective dissimilarity activated a relational self and undermined the autonomous motivation of individuals. At the group level, however, affective diversity activated a personal self and facilitated autonomous motivation of individuals. These findings might be significant for effective staffing practices in that managers may staff teams with similar or dissimilar members in terms of particular trait affect for better emotional balance within groups.

Furthermore, my findings on contextual moderators may offer insight into how affective diversity may induce individuals to fully commit to their task. Group affective diversity may reduce the innate fear of appraisal and the social risk of losing face among group members, and instead encourage group members to express their individuality and to have the courage to be different (Janssen and Huang 2008; Rink and Ellemers 2007) since behavioral differentials between affectively similar and dissimilar members would be less pronounced in groups with high affective diversity. Furthermore, as suggested by trait activation theory (Tett and Burnett 2003), which states that trait expression is also determined by the strength of the situation, group affective diversity may serve as a weak situation under which the tendencies toward autonomous functioning of TPA can be freely expressed. By considering group affective composition, managers can effectively manage emotions in groups and guide group effective processes in a favorable direction (Sy et al. 2005).

Study Limitations

The present findings should be interpreted with caution considering the following limitations of the study. First, data was collected at a single point in time and the direction of causation remains ambiguous. A future study may attempt to test alternative theoretical possibilities related to the potential reciprocal influence between variables. Second, the current data was collected from a manufacturing industry that is heavily populated with males. Thus, this industry may have distinct norms that differ from those in other industrial settings. Moreover, the cultural values of Korean firms may affect the current pattern of results. Korean society is often called “collectivist,” meaning that the group takes precedence over the individual. The collectivist tendency of the participants may influence the patterns of my results, which raises the issue of the limited generalizability of the findings. Further empirical studies on diverse industrial and national settings should bolster our understanding of the current multilevel dynamics.

Third, my hypotheses involve the same source data. I collected individuals’ self-reports of TPA, autonomy, and task cohesion. Thus, there is a possibility of correlated errors and common method bias. However, I used the objective measure of relational demography that requires the calculation of some index along with a standard deviation index as moderators. Thus, it is unlikely that such bias could explain the pattern of my results.

Despite these limitations, the present study offers meaningful theoretical and empirical contributions to affect research and diversity literature. First, the main theoretical contribution of this study is its endeavor to identify an intervening mechanism underlying the relation between TPA and task cohesion of individuals in a group setting. In particular, I examined autonomy as my key mediator, building upon self-determination theory. My research findings demonstrate that TPA leads to autonomy and in turn task cohesion in the individual.

Moreover, my research findings suggest that contextual influences in groups could either facilitate or constrain autonomy and task cohesion of individual group members. The present study calls for more investigation of the contextual factors that influence individual performance in organizations. Although it is often assumed that individual group members get distracted by social factors and feel

controlled, thus being disengaged from their tasks especially in diverse groups, group affective diversity is found to individuate members and motivate them to be themselves, thus intrinsically engaging them to task.

REFERENCES

- Aiken, L. S., and S. G. West (1991), *Multiple Regression: Testing and Interpreting Interactions*, Newbury Park, CA: Sage.
- Amabile, T. M. (1996), *Creativity in Context*, New York: Westview.
- Barsade, S. G., and D. E. Gibson (1998), *Group Emotion: A View from Top and Bottom*, edited by D. Gruenfeld, E. A. Mannix and M. A. Neale, Vol. 1, Research on Managing Groups and Teams, Stamford, CT: JAI Press.
- Barsade, S., A. J. Ward, J. D. F. Turner, and J. A. Sonnenfeld (2000), "To Your Heart's Content: A Model of Affective Diversity in Top Management Teams," *Administrative Science Quarterly* 45, 802-36.
- Bernthal, P., and C. Insko (1993), "Cohesiveness without Groupthink: The Interactive Effects of Social and Task Cohesion," *Group & Organization Management* 18, 66-87.
- Berscheid, E., and H. T. Reis (1998), "Attraction and Close Relationships," In *The Handbook of Social Psychology* edited by D. T. Gilbert, S. T. Fiske and G. Lindzey, 193-281, New York: McGraw-Hill.
- Boyd, danah (2001), "Sexing the Internet: Reflections on the Role of Identification in Online Communities," In *Sexualities, Medias and Technologies Conference*, University of Surrey.
- Bryk, A. S., and S. W. Raudenbush (1992), *Hierarchical Linear Models*, Newbury Park, CA: Sage.
- Byrne, D. (1971), *The Attraction Paradigm*, New York: Academic Press.
- Carless, Sally A., and Caroline de Paola (2000), "The Measurement of Cohesion in Work Teams," *Small Group Research* 31, no. 1, 71.
- Carver, C. S., and T. L. White (1994), "Behavioral Inhibition, Behavioral Activation, and Affective Responses to Impending Reward and Punishment: The Bis/Bas Scales," *Journal of Personality and Social Psychology* 67, no. 2, 319-33.
- Chattopadhyay, Prithviraj (2003), "Can Dissimilarity Lead to Positive Outcomes? The Influence of Open Versus Closed Minds," *Journal of Organizational Behavior* 24, no. 3, 295-312.
- Choi, J. N. (2007), "Change-Oriented Organizational Citizenship Behavior: Effects of Work Environment Characteristics and Intervening Psychological Processes," *Journal of Organizational Behavior* 28, no. 4, 467-84.
- Damen, F., B. Van Knippenberg, and D. Van Knippenberg (2008), "Affective Match in Leadership: Leader Emotional Displays, Follower Positive Affect, and Follower Performance," *Journal of Applied Social Psychology* 38, 868-902.
- Deci, E. L., and R. M. Ryan (1985), *Intrinsic Motivation and Self-Determination in Human Behavior*, New York: Plenum.
- (1991), "A Motivational Approach to Self: Integration in Personality."

- In *Nebraska Symposium on Motivation*, edited by R. Dienstbier. Perspectives on Motivation, 237-88. Lincoln, NE: University of Nebraska Press.
- (2000), "The "What" and "Why" of Goal Pursuits: Human Needs and the Self-Determination of Behavior." *Psychological Inquiry* 11, 227-68.
- Diehl, Manfred, and Sherry L. Willis (2003), "Everyday Competence and Everyday Problem Solving in Aging Adults: The Role of Physical and Social Context," *Annual Review of Gerontology and Geriatrics* 23, 130-66.
- Erdheim, Jesse (2007), "Positive and Negative Affect: How Do They Impact Hackman's (1987) Model of Group Effectiveness," Graduate College of Bowling Green State University.
- Gagne, Marylene, and E. L. Deci (2005), "Self-Determination Theory and Work Motivation," *Journal of Organizational Behavior* 26, 331-62.
- George, J. M. (1995), "Leader Positive Mood and Group Performance: The Case of Customer Service," *Journal of Applied Social Psychology* 25, no. 9, 778-94.
- (1990), "Personality, Affect, and Behavior in Groups," *Journal of Applied Psychology* 75, 107-16.
- Greguras, Gary. J., James M. Difendorff, Jacqueline. Carpenter, and Christian Troster (2014), "Person-Environment Fit and Self-Determination Theory," In *The Oxford Handbook of Work Engagement, Motivation, and Self-Determination Theory*, edited by Marylene Gagne. New York: Oxford University Press.
- Hackman, J. R. (1992), "Group Influences on Individuals in Organizations," In *Handbook of Industrial and Organizational Psychology*, edited by M. D. Dunette and L. M. Hough, 199-267, Palo Alto, CA: Consulting Psychologists Press, Inc.
- Harrison, D. A., K. H. Price, J. H. Gavin, and A. T. Florey (2002), "Time, Teams, Adn Task Performance: Changing Effects of Diversity on Group Functioning," *Academy of Management Journal* 45, 1029-45.
- Harrison, David A., and Katherine J. Klein (2007), "What's the Difference? Diversity Constructs as Separation, Variety, or Disparity in Organizations," *Academy of Management Review* 32, no. 4, 1199-228.
- Hayes, A. F. (2013), *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, New York, NY: The Guilford Press.
- Huang, M. K. (2009), "A Conceptual Framework of the Effects of Positive Affect and Affective Relationships on Group Knowledge Networks," *Small Group Research* 40, no. 3, 323-46.
- Isen, A. M. (2000), "Positive Affect and Decision Making," In *Handbook of Emotions*, edited by M. Lewis and J. M. Haviland-Jones, 417-35. New York: Guilford Press.

- Janssen, O., and X. Huang (2008), "Us and Me: Team Identification and Individual Differentiation as Complementary Drivers of Citizenship and Creative Behaviors of Members of Middle Management Teams," *Journal of Management* 34, 69-88.
- Johnson, J. W., and R. J. Schneider (2013), "Advancing Our Understanding of Processes in Personality-Performance Relationships," Chap. 3 In *Handbook of Personality at Work*, edited by Neil Christian and Robert Tett, 30-52, New York, NY: Taylor & Francis.
- Judge, Timothy A., and Cindy P. Zapata (2015), "The Person--Situation Debate Revisited: Effect of Situation Strength and Trait Activation on the Validity of the Big Five Personality Traits in Predicting Job Performance," *Academy of Management Journal* 58, no. 4, 1149-79.
- Kaplan, Seth, Jill C. Bradley, Joseph N. Luchman, and Douglas Haynes (2009), "On the Role of Positive and Negative Affectivity in Job Performance: A Meta-Analytic Investigation," *Journal of Applied Psychology* 94, no. 1, 162-76.
- Kearney, E., D. Gebert, and S. C. Voelpel (2009), "When and How Diversity Benefits Teams: The Importance of Team Members' Need for Cognition," *Academy of Management Journal* 52, 581-98.
- Kim, Sun Young, Yuhyung Shin, and Min Soo Kim (2013), "Cross-Level Interactions of Individual Trait Positive Affect, Group Trait Positive Affect, and Group Positive Affect Diversity," *Asian Journal of Social Psychology* 16, 197-206.
- Knouse, S. B. (2006), "Task Cohesion: A Mechanism for Bringing Together Diverse Teams," *International Journal of Management* 23, no. 4, 588-96.
- Kozlowski, S. W. J., and K. J. Klein (2000), "A Multilevel Approach to Theory and Research in Organizations: Contextual, Temporal, and Emergent Processes," In *Multilevel Theory, Research, and Methods in Organizations: Foundations, Extensions, and New Directions*, edited by K. J. Klein and W. J. Kozlowski, 3-90. San Francisco, CA: Jossey-Bass.
- Lievens, F. (2010), "How to Use Trait Activation Theory in Assessment Center Practice," Ghent University, Belgium.
- Liu, Dong, Xiao-Ping Chen, and Xin Yao (2011), "From Autonomy to Creativity: A Multilevel Investigation of the Mediating Role of Harmonious Passion," *Journal of Applied Psychology* 96, no. 2, 294-309.
- McIntyre, C. W., D. Watson, L. A. Clark, and S. A. Cross (1991), "The Effect of Induced Social Interaction on Positive and Negative Affect," *Bulletin of Psychonomic Society* 29, 67-70.
- Meyer, Rustin D., Reeshad S. Dalal, and Silvia Bonaccio (2009), "A Meta-Analytic Investigation into the Moderating Effects of Situational Strength on the Conscientiousness-Performance Relationship," *Journal*

- of *Organizational Behavior* 30, no. 8, 1077-102.
- Mumford, Michael D., and Sigrid B. Gustafson (1988), "Creativity Syndrome: Integration, Application, and Innovation," *Psychological Bulletin* 103, no. 1, 27-43.
- Ng, Thomas W. H., and Kelly L. Sorensen (2012), "Dispositional Affectivity and Work-Related Outcomes: A Meta-Analysis," *Journal of Applied Social Psychology*.
- Rink, F., and N. Ellemers (2007), "Diversity as a Basis for Shared Organizational Identity: The Norm Congruity Principle," *British Journal of Management* 18, 17-27.
- Ryan, R. M., and E. L. Deci (2006), "Self-Regulation and the Problem of Human Autonomy: Does Psychology Need Choice, Self-Determination, and Will?," *Journal of Personality & Social Psychology* 74, no. 6, 1557-86.
- Salas, E. E., C. A. Bowers, and J. A. Cannon-Bowers (1995), "Military Team Research: 10 Years of Progress," *Military Psychology* 7, 55-75.
- Searle, B. J., and Sharon K. Parker (2013), "Work Design and Happiness: An Active, Reciprocal Perspective," In *The Oxford Handbook of Happiness*, edited by Susan A. David, Ilona Boniwell and Amanda Conley Ayers, Oxford, UK: Oxford University Press, 2013.
- Sheldon, K. M., and B. A. Bettencourt (2002), "Psychological Needs and Subjective Well-Being in Social Groups," *British Journal of Social Psychology* 41, 25-38.
- Stapel, Diederik A., and Karen I. van der Zee (2006), "The Self Salience Model of Other-to-Self Effects: Integrating Principles of Self-Enhancement, Complementarity, and Imitation," *Journal of Personality & Social Psychology* 90, no. 2, 258-71.
- Sy, Thomas, Stephane Cote, and R. Saavedra (2005), "The Contagious Leader: Impact of the Leader's Mood on the Mood of Group Members, Group Affective Tone, and Group Processes," *Journal of Applied Psychology* 90, no. 2, 295-305.
- Tellegen, A. (1985), "Structures of Mood and Personality and Their Relevance to Assessing Anxiety, with an Emphasis on Self-Report," In *Anxiety and the Anxiety Disorders*, edited by T. A. Hussain and J. D. Maser, 681-706. Hillsdale, NJ: Erlbaum.
- Tett, R. P., and H. A. Guterman (2000), "Situation Trait Relevance, Trait Expression, and Cross-Situational Consistency: Testing a Principle of Trait Activation," *Journal of Research in Personality* 34, no. 3, 397-423.
- Tett, Robert P., and Dawn D. Burnett (2003), "A Personality Trait-Based Interactionist Model of Job Performance," *Journal of Applied Psychology* 88, no. 3, 500-17.
- Tett, Robert P., Daniel V. Simonet, Benjamin Walser, and Cameron Brown (2013), "Trait Activation Theory: Applications, Developments, and

- Implications for Person-Workplace Fit,” Chap. 5 In *Handbook of Personality at Work*, edited by Neil D. Christian and Robert P. Tett, New York, NY: Routledge.
- Thorensen, C. J., S. A. Kaplan, A. P. Barsky, C. R. Warren, and K. de Chermont (2003), “The Affective Underpinnings of Job Perceptions and Attitudes: A Meta-Analytic Review and Integration,” *Psychological Bulletin* 129, 914-45.
- Tiedens, Larissa Z., and Maria C. Jimenez (2003), “Assimilation for Affiliation and Contrast for Control: Complementary Self-Construals,” *Journal of Personality & Social Psychology* 85, no. 6, 1049-61.
- Tsui, A. S., and C. A. O’Reilly (1989), “Beyond Simple Demographic Effects: The Importance of Relational Demography in Superior-Subordinate Dyads,” *Academy of Management Journal* 32, 402-23.
- van Vianen, Annelies E. M., and Carsten K. W. De Dreu (2001), “Personality in Teams: Its Relationship to Social Cohesion, Task Cohesion, and Team Performance,” *European Journal of Work and Organizational Psychology* 10, no. 2, 97-120.
- Watson, D. (2000), “Mood and Temperament,” New York: Guilford Press.
- Watson, D., and L. A. Clark (1992), “On Traits and Temperament: General and Specific Factors of Emotional Experience and Their Relation to the Five-Factor Model,” *Journal of personality* 60, 441-76.
- Watson, D., D. Wiese, J. Vaidya, and A. E. Tellegen (1999), “The Two General Activation Systems of Affect: Structural Findings, Evolutionary Considerations, and Psychobiological Evidence,” *Journal of Personality and Social Psychology* 76, 820-38.
- Watson, David, Lee A. Clark, and Auke Tellegen (1988), “Development and Validation of Brief Measures of Positive and Negative Affect: The Panas Scales,” *Journal of Personality and Social Psychology* 54, no. 6, 1063-70.
- Williams, Helen M., Sharon K. Parker, and Nick Turner (2007), “Perceived Dissimilarity and Perspective Taking within Work Teams,” *Group & Organization Management* 32, no. 5, 569-97.
- Zaccaro, S. J. (1992), “Nonequivalent Associations between Forms of Cohesiveness and Group-Related Outcomes,” *Journal of Social Psychology* 131, 387-99.
- Zaccaro, S. J., J. Gualtieri, and D. Minionis (1995), “Task Cohesion as a Facilitator of Team Decision Making under Temporal Urgency,” *Military Psychology* 7, 77-93.

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