# Asymmetry in Perceptions of Trustworthiness: It's not You; It's Me

Jacqueline Z. Bergman, <sup>1</sup> Erika E. Small, <sup>2</sup> Shawn M. Bergman, <sup>3</sup> and Joan R. Rentsch<sup>4</sup>

- 1 Department of Management, Appalachian State University, Boone, North Carolina
- 2 Department of Management, Coastal Carolina University, Conway, South Carolina
- 3 Department of Psychology, Appalachian State University, Boone, North Carolina
- 4 Department of Management, The University of Tennessee, Knoxville, Tennessee

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#### Correspondence

Jacqueline Z. Bergman
Department of
ManagementAppalachian State
UniversityRaley Hall, ASU Box
32089Boone, 28608-2089
North Carolina;
e-mail: bergmanjz@appstate.edu.

## **Abstract**

This study examined asymmetry in perceptions of trustworthiness among members of temporary teams. Participants completed a team decision-making exercise and rated the extent to which they perceived each teammate as trustworthy. Social relations modeling (Kenny, 1994) was used to analyze the ratings and results indicated significant asymmetry in perceptions. The majority of the variance in trustworthiness ratings was attributable to the trustor and to the unique relationship between trustor and trustee. Only a nonsignificant amount of variance was attributable to the trustee. These findings suggest asymmetry in perceptions, as trustors differed in the extent to which they perceived the same individuals as trustworthy. Analyses indicated that trustors high in propensity to trust, extraversion, and emotional stability perceived others as more trustworthy than did trustors low in these characteristics. Results further indicated that team-level asymmetry in trustworthiness perceptions was detrimental in terms of increased conflict and decreased team performance.

Recent research has begun to investigate the effect of asymmetry in team members' perceptions of team process and climate variables on team outcomes (e.g., Colquitt, Noe, & Jackson, 2002; Jehn, Rispens, & Thatcher, 2010); however, additional research is needed to examine team members' perceptions of *one another*, and how asymmetry in *interpersonal* perceptions, such as perceptions of trustworthiness, affects team functioning. Because trust provides the very foundation for cooperative behavior (Golembiewski

& McConkie, 1975; Kouzes & Posner, 2002) and is often cited as the hallmark of effective teams (Avolio, Jung, Murry, & Sivasubramaniam, 1996; Butler, 1991; Dirks, 1999; Fiore, Salas, & Cannon-Bowers, 2001; Salas, Sims, & Burke, 2005), it is critical that members see one another as trustworthy since trustworthiness perceptions are a precursor to trust itself (Mayer, Davis, & Schoorman, 1995; McKnight, Cummings, & Chervany, 1998). Teams whose members do not see one another similarly in this regard may find themselves dealing with miscommunications, exchanging too much or too little information, or spending valuable time resolving differences instead of focusing on the team's task. Thus, the purpose of this study was to examine asymmetry in team members' interpersonal perceptions of trustworthiness.

Theory suggests that trust develops gradually over time through repeated interaction (Jones & George, 1998; Lewicki & Bunker, 1996; Zand, 1972). However, in some types of teams, such as newly formed temporary teams, members do not have the benefit of time and repeated interaction to develop impressions of one another (Jarvenpaa, Knoll, & Leidner, 1998; McKnight et al., 1998; Meyerson, Weick, & Kramer, 1996). We propose that, in these conditions, team members' perceptions of one another's trustworthiness will be largely in the eye of the beholder. That is, perceptions of trustworthiness will be asymmetrical, as each individual, based on his/her own unique qualities, will differ in the extent to which he/she perceives others in the team as trustworthy. We further propose that this asymmetry in perceptions of trustworthiness will be detrimental to team functioning. To measure perceptual asymmetry, we used the social relations model (SRM; Kenny, 1994), which was specifically designed to examine interpersonal perceptions and offers a unique method for assessing asymmetry in perceptions.

# **Asymmetry in Perceptions**

Symmetry in perceptions exists when all team members perceive the same "target" similarly. Thus, symmetry with respect to perceptions of trustworthiness would occur when all members agree on who in the team is trustworthy (or not). Conversely, asymmetry in interpersonal perceptions exists when team members differ from one another in how they perceive their teammates; they disagree with respect to who in the team is trustworthy (or not).

Asymmetry can be conceptualized at both the individual and team levels (Jehn et al., 2010). Individual asymmetry refers to the direction of the effect; it indicates whether a member perceives his/her teammates to be more (or less) trustworthy than do others in the team. Team asymmetry exists when there is variance within the team with respect to perceptions and reflects the extent to which team members differ from one another in their perceptions of teammates' trustworthiness.

Much of the research on team trust aggregates individual perceptions of trust to the team level on the assumption that all members of a team have similar experiences and perceptions (e.g., Dirks, 1999; Porter & Lilly, 1996; Simons & Peterson, 2000). This masks any differences among members in their perceptions of each other and ignores the effects that these differences may have on team outcomes. However, research on other team processes has found that these differences do matter. For example, Colquitt

et al. (2002) found that variation in members' perceptions of justice climate was conceptually distinct from the aggregated level of perceived justice across team members and that these variables differentially related to antecedents and outcomes. More recently, Jehn et al. (2010) found that team asymmetry in perceptions of intragroup conflict was negatively related to group performance and creativity, and individual asymmetry predicted lower self-reported performance and satisfaction with the team.

Asymmetry in perceptions of trustworthiness may also be detrimental to team performance, as trust provides the foundation for cooperative behavior (Golembiewski & McConkie, 1975; Kouzes & Posner, 2002). This issue, however, may be more salient for some types of teams than others. Temporary teams have a finite life span, a common task, little history of working together, and little anticipation of working together in the future (Markus, 1994). In this context, members do not have the time or ability to interact in ways that trust traditionally develops – over time through repeated interaction and communication (Jones & George, 1998; Lewicki & Bunker, 1996; Zand, 1972). Because they have no history or experience with each other that allows them to base their intention to trust on the characteristics of the trustee, nor do they have the time to gain this knowledge through interaction, trustors must use other information to make decisions about the trustworthiness of team members (Jarvenpaa & Leidner, 1999; Jarvenpaa et al., 1998; McKnight et al., 1998; Meyerson et al., 1996). This may make temporary teams especially susceptible to asymmetry in perceptions of trustworthiness.

Some researchers argue that when members lack in-depth knowledge about an individual's disposition, motives, or intentions, they may presume trustworthiness based on contextual factors such as an individual's role in an organization, or expectations of reciprocity inferred from group membership (Brewer, 2008; Kramer, 1999; Tanis & Postmes, 2005). However, there is also theory and empirical evidence to suggest that perceptions of trustworthiness in temporary teams will stem from the trustor's disposition. Mayer et al. (1995) argued that individuals' propensity to trust or "general willingness to trust others" (Mayer et al., 1995, p. 715) affects their perceptions of another's trustworthiness, and Colquitt, Scott, and LePine (2007) supported this proposition empirically. Additionally, McKnight et al. (1998) suggested that, because perceptions in new relationships must be formed without direct, interpersonal interaction, perceptions of trustworthiness in these conditions will stem primarily from the trustor (e.g., the trustor's personality, disposition, or perceptual biases).

Furthermore, substantial empirical evidence in social cognition and social perception (e.g., Fiske & Taylor, 1984; Higgins & Bargh, 1987; Jussim, 1991; Kelly, 1955; Kenny, 1994) reveals that people differ from one another in how they perceive others. Likewise, a large literature base on individual differences shows that there are significant differences in the way people attend to, process, and interpret information about others. For example, people differ in how they perceive and cognitively frame conflict episodes (Pinkley & Northcraft, 1994), how they perceive and react to organizational change (Goldstein, 2001), and how they perceive others as leaders (Lord, De Vader, & Alliger, 1986).

Thus, the preponderance of literature on trust development and social perception suggests that, in temporary teams of unfamiliar members, perceptions of trustworthiness

are likely to be asymmetrical, because such perceptions will likely be the result of characteristics of the trustor (perceiver) rather than the characteristics and behavior of the trustee (target).

# Interpersonal Perception and the Social Relations Model

As we interact with others, several factors simultaneously influence our perceptions, including our characteristics as the perceiver, the characteristics of the target (i.e., the person being perceived), and the unique relationship between the perceiver and the target. Our perceptions of another are not solely a function of that person's "objective" traits and behaviors.

Kenny's (1994) SRM provides a method for examining these different sources of variance in interpersonal perceptions by partitioning variance in ratings of others into perceiver, target, and relationship effects. The target effect indicates whether the target (trustee) is rated by others positively or negatively relative to the grand mean (Kwan, John, Kenny, Bond, & Robins, 2004). This effect reflects social consensus about the target individual (Kenny, 1994), thus describing the degree of agreement among observers in their perceptions of a certain other. The target effect is an individual-level measure that indicates the extent to which an individual is seen consistently by his/her teammates as trustworthy or not trustworthy. Target variance, on the other hand, is a teamlevel measure that indicates the extent to which the perceivers (trustors) on a team agree in their perceptions of the same targets (trustees). A significant amount of target variance indicates that there is consensus regarding each target and variance across targets each individual target is seen similarly by others, yet the targets are seen as different from one another. In other words, teammates see some members as trustworthy and some as not, and they agree on who those individuals are. Thus, significant target variance is an indication of symmetry in perceptions in and across teams, as it reflects consensus on which targets are trustworthy and which are not.

The perceiver effect may be understood as whether the perceiver (trustor) rated group members positively or negatively relative to the grand mean (Kwan et al., 2004). A high perceiver effect indicates that the perceiver had a general tendency to perceive others in a relatively positive fashion; a low perceiver effect indicates a general tendency to perceive others in a relatively negative fashion. The perceiver effect is an individual-level measure that indicates the extent to which an individual tends to see all others as trustworthy or not. Perceive variance is a team-level measure that assesses the extent to which perceivers (trustors) on a team differ from one another in how they see the same targets (trustees). Therefore, significant perceiver variance indicates asymmetry in perceptions.

The relationship effect captures the perceived uniqueness of each dyadic relationship and reflects the extent to which a perceiver's impression of a particular target cannot be explained by perceiver and target effects (Kenny, 1994). This indicates the extent to which an individual perceives another as trustworthy above and beyond how much he/ she generally trusts others and how trustworthy the other is generally seen by others. There are several reasons why perceptions of trustworthiness might uniquely develop

between two team members. First, trust (or distrust) may develop quickly as two team members discover that they have something in common (or not) (Levin, Whitener, & Cross, 2006). Second, two perceivers may receive different information about or observe different behaviors in a target. For instance, one team member may receive a smile from a teammate, which is often interpreted as an indication of trustworthiness (Krumhuber et al., 2007), while a second team member does not receive this cue. Third, humans are imperfect information processors and often rely on heuristics when evaluating others (Messick & Kramer, 2001); so, two perceivers may attach different meanings to the same behavior or characteristic.

Although the relationship effect exists at the dyadic level, it is an indicator of individual-level asymmetry, because it reflects perception that necessarily lies within the individual perceiver. A team member develops unique perceptions of a specific other that reflect an idiosyncratic view of that individual – a view that others do not necessarily share. In fact, one explanation provided for the existence of the relationship effect is that "the uniqueness in the perception is entirely in the mind of the perceiver" (Kenny, 1994, p. 91). The unique impressions that we form of others are aspects of perception that are perceiver based. Thus, the relationship effect indicates that a perceiver is seeing another differently than how he/she normally sees others and how that other is normally seen. Perceivers are differentiating among their teammates in a way that differs from how other members are differentiating among teammates, thus, indicating individual-level asymmetry in perceptions.

Research on interpersonal perception using the SRM finds that, on average, the relationship effect accounts for approximately as much of the variance in other-perception as does the perceiver effect (Kenny, 1994). Even during first encounters, relationship variance has been found to be a large and significant source of other perceptions (e.g., Dabbs & Ruback, 1987; Park & Flink, 1989).

Therefore, we expected to find substantial evidence of asymmetry in perceptions of trustworthiness in temporary, newly formed teams. In SRM terms, asymmetry is indicated by significant perceiver and relationship variance. Thus, we propose that nonsignificant target variance, combined with significant perceiver and relationship variance would indicate that team members are perceiving others and relating to one another uniquely, suggesting significant asymmetry in perceptions of trustworthiness.

Hypothesis 1: Perceiver effects will account for significantly more variance in perceptions of trustworthiness than will target effects.

Hypothesis 2: Relationship effects will account for significantly more variance in perceptions of trustworthiness than will target effects.

# **Antecedents of Individual Asymmetry**

Literature on trust propensity and the Big Five personality factors suggests some individual differences that would be expected to correlate with perceptions of trustworthiness. The SRM permits the correlation of individual-level perceiver and target effects with other individual-level data, but these correlations may only be performed if the social

relations analysis results in significant perceiver and target variance (Marcus, 1998). Because we expected a nonsignificant amount of target variance, we did not hypothesize about what might correlate with the target effect. Furthermore, because relationship effects are at the dyadic level of analysis, they cannot be correlated with individual-level data (Marcus, 1998). However, since we expected to find significant perceiver effects in trustworthiness perceptions, we examined predictors of this effect, i.e., whether certain types of people are predisposed to perceive others as trustworthy (or not).

In newly formed relationships, theory suggests that a trustor's disposition influences trust directly (Mayer et al., 1995) but also indirectly through its effect on his/her perceptions of the trustee's trustworthiness (McKnight et al., 1998). Recent evidence appears to support this proposition, suggesting that propensity to trust is related to trustworthiness perceptions (Yakovleva, Reilly, & Werko, 2010) and that trustworthiness mediates the relationship between propensity to trust and trust (Colquitt et al., 2007). Thus, theory and empirical evidence suggests that perceiver effects in trustworthiness perceptions are correlated with propensity to trust.

*Hypothesis 3*: There will be a significant positive correlation between propensity to trust and individual-level perceiver effects for trustworthiness.

Because trust is, by its very nature, an *interpersonal* construct (Schoorman, Mayer, & Davis, 2007), we also examined the dimensions of the "Big Five" model of personality that are most interpersonal in nature – i.e., agreeableness, extraversion, and emotional stability. Of the "Big Five" factors, agreeableness is arguably the most interpersonally oriented (Graziano, Jensen-Campbell, & Hair, 1996). Agreeable people are believed to have a strong motive to maintain positive interpersonal relationships, which suggests that individuals high in agreeableness will be more likely to have positive perceptions of others (Graziano & Eisenberg, 1997). Additionally, people low in agreeableness tend to be skeptical and predisposed to believe that others may be dishonest, whereas people high in agreeableness tend to be more cooperative and trusting (Barrick & Mount, 1991; Costa & McCrae, 1992). Thus, theory suggests that people high in agreeableness will be more likely to perceive others as trustworthy.

*Hypothesis 4:* There will be a significant positive correlation between agreeableness and individual-level perceiver effects for trustworthiness.

Extraversion refers more to the quantity and depth of interpersonal relationships as opposed to the behaviors used to maintain relationships (DeNeve & Cooper, 1998). Although there has been debate concerning the central feature of extraversion (e.g., Ashton, Lee, & Paunonen, 2002), most researchers agree that extraversion includes both a tendency to experienced positive affect and a strong motive to engage in social interactions (e.g., Ashton et al., 2002; Costa & McCrae, 1992; Lucas & Diener, 2001). Given these increased tendencies toward sociability and pleasant affect, extraverts are likely to perceive others as trustworthy to continue their engagement in and enjoyment of social activities.

*Hypothesis 5*: There will be a significant positive correlation between extraversion and individual-level perceiver effects for trustworthiness.

Emotional stability refers to the extent to which people are differentially prepared to respond to situations with negative emotions, including stress reactions, alienation, anxiety, feeling victimized, and resentfulness (Larsen & Ketelaar, 1991). Emotionally stable individuals tend to be calm, self-confident, and patient, while those low in emotional stability tend to be tense, insecure, and irritable (Antonioni, 1998). Individuals with low emotional stability may be less willing to make themselves vulnerable to others (Evans & Revelle, 2008) and therefore, less likely to see others as worthy of their trust. Furthermore, those low in emotional stability may be inclined to focus on unpleasant aspects of a situation and to perceive neutral events as threatening (Calvo & Eysenck, 2000; Derryberry & Reed, 1998). This bias may predispose those low in emotional stability to perceive others as less trustworthy than their high emotional stability counterparts, and previous research has found a significant relationship between propensity to trust and emotional stability (Evans & Revelle, 2008).

*Hypothesis 6:* There will be a significant positive correlation between emotional stability and individual-level perceiver effects for trustworthiness.

# **Team Asymmetry and Team Functioning**

Although intragroup trust has been shown to be critical to team effectiveness (e.g., Avolio et al., 1996; Dirks, 1999), the effects of asymmetry in perceptions of trustworthiness have not been examined. Recent research suggests that perceptual asymmetry has a harmful effect on team functioning (Jehn et al., 2010). Thus, we investigated the impact of team asymmetry in perceptions of trustworthiness on intragroup conflict and team performance.

Socio-emotional conflict consists of interpersonal disagreements and incompatibilities among team members (Jehn, 1994), characterized by personal attacks and personality clashes that result in anger, frustration, annoyance, tension, suspicion, and animosity (Amason & Sapienza, 1997; Jehn, 1995; Pelled, Eisenhardt, & Xin, 1999). A commonly cited reason for the occurrence of socio-emotional conflict is that team members misinterpret disagreements about task or process issues as personal attacks; they perceive malevolent intent in others' disagreement, whether or not it exists (Simons & Peterson, 2000). When team members trust one another, they are more likely to accept others' disagreements at face value rather than attributing maliciousness or hidden agendas (Simons & Peterson, 2000). Consequently, if team members disagree about who in the team is trustworthy (or not), their interpretations of team member behavior will vary, increasing the likelihood that miscommunications and misattributions will occur. Thus, we expected to find that teams in which there is more variance in members' perceptions of others' trustworthiness (i.e., teams with more perceiver and relationship variance) will experience more socio-emotional conflict than teams with less variance in these perceptions.

Hypothesis 7a: There will be a significant positive correlation between a team's perceiver variance in perceptions of trustworthiness and socio-emotional conflict.

*Hypothesis 7b*: There will be a significant positive correlation between a team's relationship variance in perceptions of trustworthiness and socio-emotional conflict.

There are numerous reasons that asymmetry in perceptions of team members' trust-worthiness may be harmful to team performance. Literature on team cognition suggests that convergence (i.e., symmetry) in members' perceptions of team-related information can facilitate group interaction and performance (e.g., Hinsz, Tindale, & Vollrath, 1997; Mathieu, Heffner, Goodwin, Salas, & Cannon-Bowers, 2000). Although research has suggested that congruence (i.e., symmetry) in mental models about teamwork (i.e., how teams interact, communicate, and behave; Cannon-Bowers, Salas, & Converse, 1993) aids in cooperation and performance, shared mental models about team members (i.e., symmetry in perceptions about the knowledge, skills, abilities, preferences, and tendencies of other team members) have been largely neglected in empirical research. Nonetheless, asymmetry in perceptions of team members may also lead to ineffective coordination and miscommunication. If team members disagree about the trustworthiness of other team members, this may lead to ineffective communication as members have different perspectives on how much information to share and with whom to cooperate.

Additionally, previous research has found that asymmetry with regard to perceptions of the team is detrimental to group performance (Jehn et al., 2010). We propose that asymmetry with regard to perceptions of *team members* is also detrimental to team performance.

*Hypothesis 8a:* There will be a significant negative correlation between a team's perceiver variance in perceptions of trustworthiness and team performance.

*Hypothesis 8b*: There will be a significant negative correlation between a team's relationship variance in perceptions of trustworthiness and team performance.

## Method

#### **Participants**

Participants were 120 undergraduate students at a large university in the southeastern United States, who participated in exchange for course credit via their departmental subject pools. The sample was 60.8% men and 88.3% Caucasian, with an average age of 21.6 (SD = 2.79).

## **Experimental Task**

The experimental task was a multiparty role-play negotiation called the "Porsche Exercise" (Greenhalgh, 1984). During the exercise, each team simulated a company task force consisting of four vice presidents from four different departments within Porsche of America. The simulation materials were fairly extensive, containing both general and role-specific information, and they were structured so that there were natural conflicts among the participants regarding the desired outcomes. The task force was responsible for

recommending a product strategy for the following year, which involved making decisions about production quotas, body styles, and performance options for several lines of Porsche cars. Each team's primary goal was to reach consensus on each of the three strategy issues.

## **Procedure and Design**

In a laboratory setting, participants were randomly assigned to teams of four, for a total of 30 teams, and were then randomly assigned to their "role" in the decision-making task (i.e., Sales, Marketing, Production, or R&D). To assess participants' familiarity with one another prior to the study, participants were asked to indicate on a 5-point scale ( $1 = not \ at \ all$ ;  $5 = very \ well$ ), how well they knew each of their teammates prior to the session. Results indicated that participants were unfamiliar with one another prior to the study, M = 1.43, SD = 0.72. Furthermore, participants had no interactions with one another during the session prior to performing the experimental task.

After assignment to roles, participants were given some time to familiarize themselves with the materials, and then performed the experimental task with their teammates. Teams were instructed to discuss the task until they had reached final decisions on each of the strategy issues. The mean time-to-completion was  $41.22 \, \text{min} \, (SD=14.40)$ . After completing the experimental task, the team recorded its final decisions, and members independently completed a measure of perceptions of trustworthiness for each teammate. A round-robin design was employed such that each team member rated each of his/her teammates on all four trustworthiness items, as described below. At the end of the session, participants also completed self-report measures of propensity to trust, personality, and intragroup conflict.

#### Measures

## Perceptions of Trustworthiness

To measure trustworthiness perceptions, participants were asked how accurately each of four phrases described the behavior of each teammate during the course of completing the experimental task, using a scale of 1 (*very inaccurate*) to 7 (*very accurate*). The four phrases were as follows: "showed competence," "showed integrity," "was trustworthy," and "was honest." These items reflect the general notion underlying the Mayer et al. (1995) definition of trustworthiness as capturing both the competence and character of the other party (Colquitt et al., 2007). The internal consistency estimate for the present sample was .85.

#### Propensity to Trust

Participants responded to seven items assessing their general propensity to trust others (adapted from Jarvenpaa et al., 1998), using a 5-point scale (1 = disagree strongly; 5 = agree strongly). The internal consistency estimate for the present sample was .71.

#### Personality

Agreeableness, Extraversion, and Emotional Stability were each measured using eight items from Saucier's (1994) shortened version of Goldberg's (1992) adjective measure of

the Big Five personality factors. Participants indicated on a 7-point scale (1 = strongly disagree; 7 = strongly agree) the extent to which each item described them. The internal consistency estimates were .87 for Agreeableness, .78 for Extraversion, and .78 for Emotional Stability.

#### Socio-Emotional Conflict

Socio-emotional conflict was measured using four items from Jehn's (1994) Intragroup Conflict Scale. Participants were asked to respond to each item (e.g., "How much friction was present in your work group?") on a 5-point scale (1 = none; 5 = a great deal). The referent of the items was the team, and individual responses were aggregated to the team level. The internal consistency estimate was .85.

#### Team Performance

A scoring system was created for the experimental task based on the assessments of expert raters. Experts were instructors in a college of business who independently read all exercise materials and recommended a product strategy. The experts indicated what strategy would be chosen by a team that was able to effectively communicate and integrate the information presented while still considering the constraints placed upon each participant's role. The average inter-rater agreement among these experts across the three strategy issues was 89%. The maximum score for the task was 15 (i.e., the team's decisions on the three strategy issues perfectly matched the expert solutions).

## Results

The analyses were conducted using the SOREMO program (Kenny, 1998). When multiple measures or items are used, SOREMO calculates the amount of stable variance versus unstable variance. Stable variance is that which replicates across measures or items, and unstable variance is that which is unique to each measure or item. Although unstable variance is not necessarily error (meaningful differences in perception may exist across time or items), such variance is treated as error in the SRM (Kenny, 1994); thus, the amount of unstable variance is considered to be the amount of error variance. The stable variance is then partitioned into perceiver, target, and relationship components, and the relative variance of each component (the average for each effect across all groups) is provided. We used between-groups *t*-tests to determine whether the SRM parameter estimates were significantly different from zero (Kenny & La Voie, 1984), and dependent groups' *t*-tests to test differences between the variance components (see Kenny, 1998).

The results of the social relations analysis indicated that 60% of the variance in the ratings was stable variance, and 40% of the variance was unstable. In other words, 60% of the variance was consistent across the multiple items, and 40% of the variance was unique to each item. The results then indicated that 30% of the variance in ratings of trustworthiness was attributable to the perceiver, 7% of the variance was attributable to the target, and 23% was attributable to the unique relationship between individuals (see Table 1).

Table 1
Results of Variance Partitioning

Perceiver	Target	Relationship	Error
.30*	.07	.23*	.40

n = 120, \*p < .05.

Significance tests indicated that the variance attributable to the target (or trustee) was quite small and was not significantly different from zero, t(29) = 1.39, p = .09, one-tailed. The amounts of variance attributable to the perceiver and to dyadic relationships were both significant, t(29) = 3.87, p < .01, one-tailed, and t(29) = 2.92, p < .01, one-tailed, respectively.

Furthermore, as hypothesized, the variance attributable to the perceiver was significantly larger than that attributable to the target, t(29) = 2.33, p < .05, one-tailed; and the variance attributable to dyadic relationships was significantly larger than that attributable to the target, t(29) = 1.82, p < .05, one-tailed. As expected, there was no significant difference between the amounts of perceiver variance and relationship variance, t(29) = 0.64, p = .52. Overall, Hypotheses 1 and 2 were fully supported.

In Hypotheses 3 through 6, we examined antecedents of asymmetry in trustworthiness perceptions. See Table 2 for descriptive statistics and correlations among these individual-level variables.

Hypothesis 3 was supported, as there was a significant positive correlation between propensity to trust and individual-level perceiver effects, r = .38, p < .01, indicating that individuals with a greater propensity to trust were more likely to perceive their teammates as trustworthy than those lower in propensity to trust.

Hypothesis 4 was not supported. The correlation between Agreeableness and individual-level perceiver effects was not significant. Individuals high in Agreeableness were not more likely to perceive their teammates as trustworthy compared to those low in Agreeableness.

Hypothesis 5 was supported. The correlation between Extraversion and individual-level perceiver effects was positive and significant, r = .29, p < .01. Individuals high in Extraversion were more likely than those low in Extraversion to perceive teammates as trustworthy.

Hypothesis 6 was also supported. The correlation between Emotional Stability and individual-level perceiver effects was positive and significant, r = .20, p < .05, indicating that individuals higher in Emotional Stability were more likely to perceive their teammates as trustworthy compared to those lower in Emotional Stability.

Hypotheses 7 and 8 addressed the effects of team-level asymmetry on socio-emotional conflict and team performance. Descriptive statistics for and the correlations among these team-level variables are presented in Table 3.

Hypothesis 7a was supported. The amount of variance in the team attributable to the perceiver was significantly correlated with the amount of socio-emotional conflict experienced by the team, r = .36, p < .05. Hypothesis 7b, however, was not supported, in

Table 2 Individual-Level Correlations and Descriptive Statistics

Variable	1	2	3	4	5
1. Perceiver effect	_				
2. Propensity to trust	.38**	_			
3. Agreeableness	.03	.26**	_		
4. Extraversion	.29**	.07	.07	_	
5. Emotional stability	.20*	.16	.46**	.14	_
M	5.75 <sup>a</sup>	3.72	5.46	5.04	4.68
SD	.88ª	.45	.98	.94	1.07

<sup>&</sup>lt;sup>a</sup>These values represent the mean and standard deviation for the raw score of trustworthiness. n = 120. \*p < .05; \*\*p < .01.

Table 3
Team-Level Correlations and Descriptive Statistics

Variable	1	2	3	4
Perceiver variance	=			
2. Relationship variance	.11	_		
3. Socio-emotional conflict	.36*	01	_	
4. Performance	17	51**	02	_
M	.35	.26	2.15	10.27
SD	.45	.48	.65	3.49

n = 30; \*p < .05; \*\*p < .01.

that the amount of relationship variance in the team was not significantly related to socio-emotional conflict.

Hypothesis 8a was also not supported. Although the correlation was in the hypothesized direction, r = -.17, it was not significant, p = .38. However, Hypothesis 8b was supported. The amount of relationship variance in the team was significantly correlated with the team's performance, r = -.51, p < .05.

## Discussion

Because most research on teams aggregates across individual perceptions to focus on shared team properties, differences in team members' perceptions of the team and its members are masked. This study directly examined such differences in perceptions and found significant asymmetry in team members' trustworthiness perceptions. Furthermore, we found that this perceptual asymmetry negatively relates to team conflict and performance.

Specifically, our results indicated that only 7% of the variance in ratings of trustworthiness was attributable to the target, while 30%, (more than four times this amount) was attributable to the perceiver. This suggests that trustors (i.e., perceivers) in

temporary teams see the same trustees (i.e., targets) differently. An individual's personal characteristics play a significantly larger role in his/her perceptions of another person's trustworthiness than does the inherent trustworthiness of that other person. Results also indicated that 23% of the variance in ratings of trustworthiness was attributable to the unique relationships between the trustor and trustee, indicating that trustworthiness perceptions were idiosyncratic. Altogether, these results demonstrate the existence of asymmetry in interpersonal perceptions; specifically, perceptions of trustworthiness in temporary teams appear to lie significantly in the eye of the beholder.

The results further indicated that such asymmetry may be detrimental to team functioning. Teams with greater perceiver variance experienced a significantly more socio-emotional conflict than did teams with less perceiver variance; teams with greater relationship variance performed significantly worse than teams with less relationship variance. The relationship between perceiver variance and performance was also in the hypothesized direction, though it was not significant.

However, although relationship variance negatively impacted performance, it was unrelated to socio-emotional conflict. This was surprising because both perceiver and relationship variance indicate asymmetry in perceptions. However, these measures represent different manifestations of asymmetry; high perceiver variance means that members are not differentiating among teammates, whereas high relationship variance indicates that members are differentiating among teammates, but in a way that differs from how others are differentiating among teammates. Our findings suggested that when relationship variance is high, team members behave in ways that harm performance but that is not seen by the team as conflict. To fully understand this effect, it may be beneficial to link research on perceptual asymmetry with that in other areas of teamwork. For example, information sharing appears to be critical to effective teamwork and decision quality (Fiore et al., 2001; Stasser, Taylor, & Hanna, 1989), particularly in its impact on the development of team cognition (Rentsch & Hall, 1994). Because contributing information during team discussion makes a person vulnerable (i.e., the information sharer risks that others will not reciprocate), trust is necessary for the disclosure of information (Ferrin & Dirks, 2003; Zand, 1972). Thus, if team members disagree about who in the team is trustworthy (or not), they may disclose information differentially to team members. Thus, asymmetric information sharing caused by asymmetric perceptions of trustworthiness would likely be detrimental to performance, but would not necessarily be seen by others as overt conflict.

Additionally, we were successful in identifying some specific characteristics that may lead to asymmetry by predisposing individuals to perceive others as trustworthy (or not). Consistent with theory (Mayer et al., 1995; McKnight et al., 1998) and recent empirical results (Colquitt et al., 2007; McKnight et al., 1998; Yakovleva et al., 2010), we found a positive relationship between individual-level perceiver effects and propensity to trust, a context- and referent-independent individual difference variable characterized as a general willingness to trust others. This suggests that individuals who are generally more willing to trust are more likely to perceive their current teammates as being trustworthy despite the fact that their teammates have not demonstrated whether they are worthy of trust. Because trust is often cited as being necessary for proper team

functioning (e.g., Avolio et al., 1996; Dirks, 1999), individuals who are high in propensity to trust may be considered good candidates for working on temporary teams, given their natural inclination to see others as trustworthy.

Results also indicated that extraversion was positively related to individual-level perceiver effects, suggesting that people who tend to be gregarious and experience positive affect also have a tendency to perceive others as trustworthy. Because perceptions of distrust would likely harm social relationships and bring about negative affect, extraverts may display a tendency to see others as trustworthy to allow for continued enjoyable social interaction. Likewise, emotional stability was positively related to individuals' tendencies to perceive others as trustworthy. Individuals who are low in emotional stability, those who experience more negative affect, may be more likely to perceive others as potentially threatening (Derryberry & Reed, 1998) and, thus, less trustworthy. Together, these results support prior research findings that both positive and negative affect impact perceptions of trustworthiness and trust development (Dunn & Schweitzer, 2005; Lount, 2010).

# **Implications and Contributions**

Evidence suggests that in temporary teams in which members are unfamiliar with one another, a high level of trust may exist at the outset of the team's process (e.g., Jarvenpaa & Leidner, 1999; Jarvenpaa et al., 1998; Kramer, 1994). The model of "swift trust" (Jarvenpaa et al., 1998; Meyerson et al., 1996) proposed to explain this finding suggests that members of these types of teams behave as if trust is present from the beginning as a means of dealing with the uncertainty caused by working with strangers (Jarvenpaa & Leidner, 1999). Our finding of asymmetry in trustworthiness perceptions in newly formed teams suggests a distinction between perceiving others as trustworthy and behaving as if trust exists. Members may behave as if trust is present to allow the team to act in situations where time pressure does not allow them to develop trust in the conventional, gradual manner; however, our findings suggest that this trusting behavior does not necessarily mean that all members perceive everyone as trustworthy. Members may ignore their perceptions of untrustworthiness and behave as if trust exists, to facilitate successful task completion. Future research should further examine the impact of perceptions of trustworthiness on behavioral indicators of trust, such as information exchange.

The finding that initial perceptions of trustworthiness among team members are largely because of the characteristics of the perceiver (as opposed to the behaviors and characteristics of the target) has practical implications for team training and leadership interventions. For example, awareness of members' propensities to trust can help team leaders facilitate trust building to minimize instances when a member's propensity to distrust would impede the group's work. The knowledge that a person's perceptions of a teammate as untrustworthy may not be the result of any actual misbehavior on the part of the teammate, may allow a leader to better manage any ensuing conflict and "re-build" lost trust. Furthermore, because members are likely to, at least initially, differ in their perceptions of one another, team training should focus on increasing perceptual

symmetry before the team's functioning is harmed, perhaps during the "forming" stage (Tuckman, 1965).

Our findings also have implications for teams in situations in which social information about members is scarce, such as in virtual or geographically distributed teams. For such teams, many of the factors that contribute to perceptions of trustworthiness are often absent (e.g., facial expressions, body language, etc.). Therefore, members may exhibit very strong perceiver effects, because of a nearly complete lack of information about the target, making these teams especially vulnerable to asymmetry in perceptions, and the detrimental effects that follow.

Additionally, the current study demonstrates how the SRM may be used to partition the variance in ratings of others to assess asymmetry in perceptions. Interpersonal perception is a complex phenomenon, and SRM provides a unique way to examine the various sources contributing to one's perceptions of another by indicating the extent to which different sources of variance contribute to perceptions while controlling for other sources of variance. For example, our finding of significant perceiver variance indicated that team members differed significantly in the extent to which they saw others as trustworthy, controlling for both how those others were behaving (target effects) and their unique relationships with those others (relationship effects). Thus, our round-robin design and use of SRM provided information beyond that given by traditional self-reports of perceptions of trustworthiness.

#### **Future Research**

There are questions that remain, however. First, although teams with greater perceiver variance experienced significantly more conflict, the mean level of trustworthiness must also be considered. It is certainly possible that a team could have low perceiver variance and a low mean level of trustworthiness, which would indicate that all team members see all others members as untrustworthy. Such a situation would likely result in conflict. Future research should examine the interaction between variance in perceptions and mean levels of perceptions.

Also, agreeableness was not related to perceiver effects in trustworthiness perceptions. This was particularly surprising since propensity to trust is considered one facet of agreeableness (Barrick & Mount, 1991; Costa & McCrae, 1992). One explanation for this non-significant correlation could be that agreeableness is a broad, high-level domain of personality, encompassing numerous specific traits, while propensity to trust is a narrower, lower-level facet of personality (Mooradian, Renzl, & Matzler, 2006). Making the finer features of personality explicit likely provides greater accuracy and precision, as combining numerous traits into one broad dimension results in a loss of specific variance and, thus, predictive accuracy (Saucier & Goldberg, 2003). This may then help to explain our findings that, although, agreeableness and propensity to trust were significantly correlated, propensity to trust was related to perceiver effects, and agreeableness was not. However, we suggest that future research examines this relationship more closely.

Longitudinal research would offer better information about trust development and allow for the investigation of where in this process team members' perceptions of

trustworthiness become more about the trustee and less about the trustor. It would also be fruitful to examine differences in trust development between newly formed and ongoing teams. For example, we argue that newly formed teams are faced with unique circumstances in which the trustor's disposition will be a primary antecedent of trustworthiness perceptions. However, it is possible that the trustor's disposition may even more strongly predict levels of trust in ongoing teams through a process of behavioral reciprocation. Similarly, situation strength may also impact symmetry in perceptions (e.g., Cooper & Withey, 2009; Mischel, 1977). For example, an individual's personality has a greater impact on his/her perceptions of others than do cues from the target in weak situations, leading to asymmetry. Conversely, in strong situations, we might find greater symmetry, as individuals base their perceptions on the environment or target.

More broadly, research should examine various types of asymmetry in interpersonal perceptions and any differential effects on team functioning. It remains unknown whether all types of asymmetry in perceptions of others are harmful. Having shown that asymmetry exists in trustworthiness perceptions and is detrimental to teams, we believe future research should examine whether the same would hold true for other types of interpersonal perceptions, such as perceptions of teammates' personalities, skills, frames of reference, needs, and values.

## Limitations

This study has some important limitations that should be noted. Specifically, there were some logistic constraints that influenced the methodology and that limit our ability to make causal inferences.

First, perceptions of trustworthiness and personality measures were administered at the completion of the team's task. Thus, the conclusions that can be drawn concerning *initial* perceptions of trustworthiness are somewhat limited. The amount of trustworthiness perceived at the end of the team's task may have certainly been influenced by the interactions among members. Similarly, it is possible that responses on the personality scales were also influenced by the team's interactions. For example, members who experienced positive interactions may have responded to the propensity to trust measure more positively than members who experienced negative interactions. However, given that the teams, on average, spent only 41 min on the experimental task, these interactions were relatively minimal, and the personality measures (including propensity to trust) are designed to assess stable dispositions and traits.

Additionally, data were collected at the same point in time via self-report. This raises the possibility that intercorrelations among these variables are at least partially because of common method variance. However, this limitation may be mitigated by our use of objective performance scores and the construction of individual- and team-level asymmetry scores using the SRM.

Finally, our sample consisted of student teams working in a controlled environment. This allowed for the round-robin collection of data on perceptions, which would have been difficult to do in a field study. We believe that the teams in this sample were typical of the kind of relationship of interest in the current study – newly formed temporary

teams – and that the laboratory environment allowed for a conservative approach to examining asymmetry in perceptions of trustworthiness. Nonetheless, the sample and methodology may limit the generalizability of the results. Thus, future research should extend this study by examining asymmetry in perceptions of trustworthiness in teams in organizational settings.

# Conclusion

This study utilized a social relations analysis to examine asymmetry in perceptions of trustworthiness among members in temporary, newly formed teams. Our findings support the notion that perceptions of trustworthiness in these teams are asymmetrical and stem primarily from the disposition of the trustor and his/her idiosyncratic views of others, rather than from "objective" or behavioral indicators of trustworthiness from the trustee. Moreover, this asymmetry appears to have detrimental effects on team outcomes.

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Jacqueline Z. Bergman is an Assistant Professor of Management at Appalachian State University in Boone, North Carolina. She received her Ph.D. in Industrial-Organizational Psychology from The University of Tennessee, Knoxville, and her M.S. in Industrial-Organizational Psychology from The University of Tennessee, Chattanooga. Jacqui teaches courses in organizational behavior, leadership, and human resource management. Her research focuses on teamwork, group dynamics, and personality.

**Shawn M. Bergman**, Assistant Professor of Psychology at Appalachian State University, earned his Ph.D. in Industrial/Organizational Psychology from the University of Tennessee, Knoxville. His research interests include person-environment fit, narcissism, academic and classroom engagement, and quantitative methods. He teaches undergraduate courses in research methods and industrial psychology and graduate courses in quantitative methods and statistics.

Joan R. Rentsch, Professor of Management at The University of Tennessee, earned her Ph.D. in Industrial/Organizational Psychology from the University of Maryland. Her research interests include psychological and cognitive processes in teams and in organizations and the measurement of cognition. Her published research appears in such journals as Journal of Applied Psychology, Personnel Psychology, Journal of Organizational Behavior, Academy of Management Journal, and Organizational Research Methods. She is on the editorial boards of Journal of Organizational Behavior and Human Resource Management Review. The Office of Naval Research and the Air Force Research Laboratory have funded Dr. Rentsch's research.

Erika E. Small is an Assistant Professor of Management in the E. Craig Wall Jr. College of Business Administration at Coastal Carolina University, where she teaches courses in Human Resource Management, Organizational Behavior, and Leadership. She received her Ph.D. in Industrial and Organizational Psychology from the University of Tennessee. Her research interests include team leadership and team processes such as conflict and trust, and her research has appeared in journals and books, including the *Journal of Applied Social Psychology, Business Education and Accreditation*, and *Research in Multilevel Issues: Vol. 6.*