Perceived Trustworthiness Within the Organization: The Moderating Impact of Communication Frequency on Trustor and Trustee Effects

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Abstract

This paper investigates the antecedents of intraorganizational trust and, more specifically, how the frequency of communication between trustor and trustee moderates the impact of these factors on perceived trustworthiness. Data on 157 dyadic relationships among 50 senior managers within a multinational corporation confirm that the effect of both trustor, as well as trustee characteristics on the level of perceived trustworthiness, is moderated by the frequency of communication between the two parties. As communication frequency increases, the trustor’s general attitudinal predisposition towards peers becomes less important as a determinant of his/her evaluation of trustworthiness of other managers within the organization. In contrast, as communication frequency increases, the trustor’s and trustee’s contexts within the organization become more important determinants of perceived trustworthiness.

(Trust; Trustworthiness; Communication)

Introduction

In recent years, the concept of trust has gained an important place in management research (Kramer and Tyler 1996, Rousseau et al. 1998). Trust facilitates relationships between and within organizations reducing transaction costs (Chiles and McMackin 1996). The benefits of trust are widely accepted within the literature, though there is scarce empirical research about how trust can be built within organizations (Mayer and Davis 1999).

When the nature and antecedents of trust have been analyzed in the social sciences, the differences in approaches between disciplines are striking. For instance, psychologists have studied trust as a fundamentally chronic personality trait (Rotter 1971); economists have focused on the calculative process that captures the decision to trust others, and they have attempted to design organizational arrangements that will yield “trust-like” behavior (Dasgupta 1988, Williamson 1993); and sociologists have emphasized the importance of social relations beyond individual characteristics and formal organizational arrangements (Granovetter 1985). Thus, to analyze the antecedents of trust between managers, we need to draw from a combination of the different individual, organizational, and relational factors considered by these three approaches (Whitener et al. 1998).

In this paper, our goal is to investigate the antecedents of trust within an organizational setting, including the individual attitudes of managers, their specific contexts within the organization, and the frequency of communication in their relationships with their peers. We argue that, within a dyad, the perceived trustworthiness of one manager to another is driven by the individual characteristics of the two sides of the dyad, as well as by the nature of their linkages to the organization in which they are embedded. More important, we expect that the influence of these individual and contextual characteristics will be moderated by a critical element of the dyadic relationship: the extent of communication between the two managers. It is the moderating role of communication in the production of trustworthiness that constitutes the main focus of this paper. We investigate how the perceptions of peer trustworthiness arise in an intraorganizational context and, specifically, how communication frequency moderates the extent to which it is the trustor’s or the trustee’s individual and contextual characteristics that
drive these perceptions. We analyze why and how the trustee’s characteristics may be expected to gain salience relative to those of the trustor as communication between the two increases.

In the next section, we develop the theoretical arguments regarding the perceived trustworthiness of managers within an organization and present the hypotheses to be tested about trustor and trustee effects. The methodology section describes the organizational setting within which this study was conducted, as well as the data collection process, the measures, and the sample. The following section presents the results of our empirical analysis, based on a sample of 157 dyadic relationships among the top 50 managers of this multinational corporation. The paper concludes with a discussion of the results and their implications for research and practice.

The Antecedents of Perceived Trustworthiness

Research on trust has been characterized by a substantial diversity in disciplinary background, methodologies, and definitions (Bigley and Pearce 1998). Among other approaches, trust has been defined as a general disposition toward others (Rotter 1971), a rational decision about cooperative behavior (Dasgupta 1988), an effect-based evaluation about another person (McAllister 1995), and a characteristic of social systems (Barber 1983). Rousseau et al. (1998) argue that the differences among scholars in the definitions and levels of analysis are less divergent than may appear at first sight. Based on their analysis of the trust literature, these authors suggest that trust is a “psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another” (p. 395). In this section, we will analyze the factors that lie behind the extent to which managers believe that their peers are trustworthy, i.e., how the subjective expectations of the intentions and behaviors of their peers within the organization are generated. Thus, we will study the subjective evaluations of peer trustworthiness rather than the actual behavior of the trustor that may result from these evaluations.

Most definitions of trust, such as the one above, are based on the dyad as the underlying unit of reference (Whitener et al. 1998). Depending on the issue to be analyzed, it can be aggregated to the trustor’s perspective on one side (e.g., propensity to trust) and the trustee as a reference on the other side (e.g., his/her actual trustworthiness). A statement about trust, therefore, always concerns at least two parties—be they individuals, groups, organizations, institutions, or entire societies. The analysis of trust ultimately needs to build on how individuals (at a certain level of aggregation) trust and are trusted by other sets of individuals. From our perspective, this distinction between the trustor (who holds certain expectations about another party and, as a result, may or may not be willing to be vulnerable to the actions of the other party) and the trustee (who is assessed by the trustor) is critical to any analysis of the antecedents of trust.

Based on this fundamental trustor-trustee dyad, the trustor’s expectations about the trustee’s trustworthiness may arise from three basic sets of variables: (1) the trustor, (2) the trustee, and (3) their dyadic relationship. In an intraorganizational context, the trustor and trustee effects can be further disaggregated into the individual characteristics of the two managers as well as their specific linkages to the organizational network. The hypothesized relationships are summarized in Figure 1 and developed below in greater detail.

The core idea in the model is that the relative effect of the trustor and the trustee on the former’s expectations regarding the latter’s trustworthiness depends on one critical characteristic of their dyadic relationship: the frequency of communication between them. This argument is consistent with Rotter’s (1971) claim that an individual’s propensity to trust should influence his/her level of trust in specific others, but mainly when the trustor has little knowledge about them. Thus, if there is little contact between two managers within an organization, perceived trustworthiness can be expected to depend largely on the trustee’s own characteristics and position within the organization. Similarly, the effect of the individual characteristics and the organizational context of the trustee would be expected to be smaller, because limited contact would make these characteristics barely observable to the trustor.

In contrast, with greater frequency of communication the trustee’s individual characteristics as well as context within the organization would become more visible to the trustor and can be expected to play a greater influence in his/her evaluation of the trustee’s trustworthiness. In this case, the trustor can be expected to rely more heavily on the larger amount of information directly available to him/her about the trustee’s intentions and behavior in their relationship. Thus, when the frequency of communication between them increases, we would anticipate a transfer in the extent of influence from trustor-related to trustee-related variables, i.e., individual characteristics and position within the organizational network.

This moderating effect of communication frequency on
Figure 1: The Hypothesized Moderating Effect of Communication Frequency on Trustor and Trustee Effects

<table>
<thead>
<tr>
<th>TRUSTOR</th>
<th>INDIVIDUAL CHARACTERISTICS</th>
<th>LINKAGES TO THE ORGANIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Attitudinal Predisposition Towards Peers (+)</td>
<td>* Organizational Tenure (+)</td>
<td>* Decision-Making Autonomy (+)</td>
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</tbody>
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<tr>
<th>DYADIC RELATIONSHIP</th>
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<tr>
<td>* Communication Frequency</td>
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<table>
<thead>
<tr>
<th>TRUSTEE</th>
<th>INDIVIDUAL CHARACTERISTICS</th>
<th>LINKAGES TO THE ORGANIZATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>* Attitudinal Predisposition Towards Peers (+)</td>
<td>* Organizational Tenure (+)</td>
<td>* Decision-Making Autonomy (+)</td>
</tr>
</tbody>
</table>

The influence of the trustor's and trustee's individual characteristics, as well as organizational contexts on perceived trustworthiness, is developed further in the hypotheses below. To investigate the effect of different variables on the trustor's perceived trustworthiness of the trustee, we focus separately on the characteristics of the trustors as well as the characteristics of the trustees.

Attitudinal Predisposition Towards Peers
Research in psychology has shown that individuals differ in their propensities to trust others and that these propensities result from their early childhood, their personalities, and their experiences in life (Erikson 1953, Rotter 1967, Wrightsman 1974). In our study, we are particularly interested in how relationships within the organizational network and managers' individual attitudes toward peers may affect perceptions of trustworthiness within the organization.

Consistent with Olson and Zanna (1993) and other attitude researchers, psychologists Eagly and Chaiken (1992) define attitude as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor." A positive attitudinal predisposition towards peers basically means that the manager sees his/her peers from a more positive standpoint in terms of positive affect, cognition, and behavioral intentions toward them. It appears reasonable to expect that a general positive predisposition toward peers is likely to be associated with the manager's positive evaluations of the trustworthiness of specific peers within the organization, particularly in a low-communication context. Once the trustor has more communication with the trustee, this general attitude towards peers can be expected to become less significant and the specific attributes of the trustee and the history of the relationship with him/her can be expected to become more significant.

Hypothesis 1. (a) In low-communication contexts, there will be a positive association between the trustor's attitudinal predisposition towards peers and his/her perception of the trustee's trustworthiness. (b) In high-communication contexts, this association will be significantly less strong.

On the other hand, a trustee with a positive attitudinal predisposition towards peers should also be perceived as more trustworthy, at least when high communication allows the trustor to observe such a positive attitude and the associated trustworthy behavior. In this case, we would expect that the trustor may feel more comfortable with, and thus have a more positive evaluation of, his/her peer's trustworthiness when such a peer has positive affect, cognition, and behavioral intentions toward others, including the trustor. This argument is fully consistent with Whitener et al. (1998), who argued that managers with a high propensity to trust expect their managers to
reciprocate, and that, based on social exchange theory, such reciprocity should influence their motivation to engage in trustworthy behavior. Thus, in the case of high communication when the trustee’s behavior is more clearly observable, a positive attitudinal disposition on the part of the trustee can be expected to induce more positive evaluations by the trustor.

**HYPOTHESIS 2.** (a) In high-communication contexts, there will be a positive association between the trustee’s attitudinal predisposition towards peers and the trustor’s perception of the trustee’s trustworthiness. (b) In low-communication contexts, this association will be significantly less strong.

**Linkages to the Organization**
In addition to attitudinal predisposition towards peers as a key individual characteristic of the trustor and the trustee, the organizational context in which managers perform their activities can also be expected to affect the level of trust present in their relations with other managers. For instance, the design of organizational arrangements to monitor and motivate managers suggested by transaction-cost economics and agency theory can be expected to have an important impact on the managers’ behaviors and intentions toward peers (Ghoshal and Moran 1996, Shapiro 1987). The variables that reveal the type and strength of the linkages of a manager to the organization can be expected to have important consequences on the perceptions of trustworthiness of the managers within an organization because they reflect the manager’s interests and socialization within the organization. We will focus on three variables that broadly characterize the context for individuals as players within a social structure: organizational tenure, decision-making autonomy, and bonus intensity.

**Organizational Tenure.** We expect that organizational tenure is likely to affect a manager’s expectations about others within the organization because tenure is well recognized as a good gauge of the richness and strength of a manager’s “embeddedness” within an organization (Granovetter 1985). From a purely cognitive perspective, managers with longer tenure within the organizational network are presumably more socialized and familiar with the written and unwritten rules (Finkelstein and Hambrick 1996) because they have had more time to learn them. This greater knowledge of how individuals within the company behave is likely to facilitate more positive evaluations of the trustworthiness of colleagues. In addition, from an affect-based perspective, longer tenure should also increase the trustor’s affect and positive inclination with regard to the organization and its managers, thus resulting in more positive perceptions about peers. This tendency of managers with longer tenure to have more positive perceptions of the trustworthiness of their peers should be particularly salient if the trustor does not have direct information about the trustees—that is, when they have low communication with the trustees.

**HYPOTHESIS 3.** (a) In low-communication contexts, there will be a positive association between the trustee’s own organizational tenure and his/her perception of the trustee’s trustworthiness. (b) In high-communication contexts, this association will be significantly less strong.

We now focus on the organizational tenure of the trustee. It is widely accepted in research on top-management teams (Finkelstein and Hambrick 1996) that managers with longer tenures tend to be more embedded within the organizational network and more committed to the organization and its status quo (Wiersema and Bantel 1992). This greater commitment to the organization can be expected to result in the establishment of a trustworthy reputation. Because we posit that the trustee characteristics will matter more when communication between trustor and trustee is high, these arguments yield the following hypothesis.

**HYPOTHESIS 4.** (a) In high-communication contexts, there will be a positive association between the trustee’s organizational tenure and the trustor’s perception of the trustee’s trustworthiness. (b) In low-communication contexts, this association will be significantly less strong.

**Decision-Making Autonomy.** By definition, managers with greater autonomy have greater control over their own actions and are less affected by others’ actions (Deci and Ryan 1987). Given that greater autonomy makes managers less exposed and vulnerable to the actions of their superiors and peers, managers with greater autonomy can be expected to be more willing to trust other individuals within the organizational network (Frost 1978). Researchers have already suggested that managers with a more internal locus of control (Deci and Ryan 1987) and greater self-efficacy (Whitener et al. 1998) are more predisposed to trust others. Thus, we expect that the trustor’s organizational autonomy would also be positively associated with the evaluations of the trustworthiness of peers, and that this relationship would be moderated by the frequency of communication between the trustor and the trustee.

**HYPOTHESIS 5.** (a) In low-communication contexts, there will be a positive association between the trustor’s own decision-making autonomy and his/her perception of the trustee’s trustworthiness. (b) In high-communication contexts, this association will be significantly less strong.
We now focus on the decision-making autonomy of the trustee. It is arguably harder to rely on peers who do not have control over their actions. If they have low autonomy, their positive intentions and promises can be overturned by a superior, thereby limiting their trustworthiness. Taking into account the moderating effect of communication frequency, these arguments yield the following hypothesis.

**HYPOTHESIS 6.** (a) In high-communication contexts, there will be a positive association between the trustee's decision-making autonomy and the trustor's perception of the trustee's trustworthiness. (b) In low-communication contexts, this association will be significantly less strong.

**Bonus Intensity.** Managers with larger individually based bonuses can be expected to behave in their own self-interest to a greater extent than if their compensation was fixed or based on group-level goals (Finkelstein and Hambrick 1996). The achievement of individually based goals is likely to affect their relationships with other individuals within the organization. The self-interest of managers with competitive rewards can be expected to make them less trusting of their peers (Ferrin and Dirks 2001). These arguments coupled with the moderating effect of communication frequency result in the following hypothesis.

**HYPOTHESIS 7.** (a) In low-communication contexts, there will be a negative association between the trustor's own bonus intensity and his/her perception of the trustee's trustworthiness. (b) In high-communication contexts, this association will be significantly less strong.

Focusing now on the trustee, performance-contingent compensation plans can be expected to increase "political behavior" and self-interested attempts even to manipulate accounting systems or personal reputations (Finkelstein and Hambrick 1996). The behavior of managers whose large individually based incentives are more highly powered is, thus, likely to be less trustworthy than the behavior of managers whose incentives are less high-powered. However, this behavior can be expected to become far more apparent when the communication between trustor and trustee is high.

**HYPOTHESIS 8.** (a) In high-communication contexts, there will be a negative association between the trustee’s bonus intensity and the trustee’s perception of the trustor's trustworthiness. (b) In low-communication contexts, this association will be significantly less strong.
questionnaires were sent out. A letter explaining the objectives of the research project and guaranteeing full confidentiality accompanied the questionnaire. After two reminders, 59 questionnaires were received (87% response rate), including the six division presidents and three additional members of the top-management team. These nine top managers were excluded from the analysis. Given the importance of power and politics for managerial work at the top-management-team level (Finkelstein and Hambrick 1996), it was anticipated that the dynamics of trust between them would be different than at lower levels within the corporation.

The survey contained questions about the individual respondents and their dyadic relations with other managers across the organizational network. Each manager was asked a set of questions about himself, including individual characteristics and his own position and role within the organization. In addition, they were asked about their relationships with specific managers (named) from other divisions. A total of 31 top managers from the GPCs provided evaluations of the presidents of the 10 largest subsidiaries and other key MA managers, while 19 top managers from the MAs evaluated the 9 product managers and senior GPC staff.

Data were collected on a total of 243 dyads. However, after randomly discarding one of the reciprocal evaluations in dyads where both parties evaluated each other (to avoid autocorrelation of observations) and excluding dyads where both managers were from the same division, the sample was reduced to 157 unique dyads between managers with direct contact from different divisions. The directionality of observations (GPC to MA vs. MA to GPC) was statistically controlled by a dummy variable, because the relationship at the division level could affect the amount of trust between the individual managers. Most of the instruments for these variables have previously been validated in the literature. The exact wording of the items is provided in the Appendix at the end of the paper. Each measure and its reliability (Cronbach’s alpha) are presented below when appropriate.

**Measures**

Basic data were gathered for each manager, including organizational tenure (number of years since they joined the firm). The respondents also indicated whether they worked for either a production unit (GPC) or a marketing unit (MA), which was dummy coded as one in the case of GPC and used as a control variable in the dyadic evaluations between GPC and MA managers.

Attitudinal predisposition towards peers was measured by the Least Preferred Coworker (LPC) instrument developed by Fiedler (1971). Though initially intended to assess a relationship-oriented versus a task-oriented leadership style (Fiedler 1971), Stogdill (1974) has argued that the LPC really measures a general attitudinal predisposition towards peers, which is exactly what we want to assess in this study. Rice (1978), in his comprehensive analysis of the psychometric properties of the scale, supports this value-attitude interpretation and reports an average reliability coefficient of 0.88 and a median test-retest reliability of 0.67. Peters et al. (1985) and Schreisheim et al. (1994) have obtained support in their meta-analyses for the use and validity of the LPC scale, which is currently interpreted as “an attitude measure with a strong emphasis on the affective component” (Ayman et al. 1998, p. 79). The instrument consists of 18 items anchored by two contrary adjectives (e.g., cooperative-uncooperative) at the end of a seven-point scale along which the respondents need to assess their least-preferred peer. A higher score indicates a more positive attitude with regard to peers in a work environment.

**Autonomy** (\(\alpha = 0.79\)) was measured using four items from Griffin et al. (1980) based on the autonomy dimension of the Job Diagnostic Survey (Hackman and Oldham 1975). For this question, the manager was asked to assess the degree to which there were specific autonomy-related characteristics in his/her job.

**Bonus** was measured as a percentage of maximum possible bonus to total compensation, if they were to actually receive the maximum possible bonus amount for the year. It should be noted that all bonuses referred only to the manager’s individual performance based on a set of specific goals for the manager, including in some cases the performance of his/her own division, but not other divisions or corporate-level goals.

**Frequency of communication** (\(\alpha = 0.94\)). Each manager assessed the frequency of communication with a set of managers from other divisions within the organizational network. Five items obtained from Gupta and Govindarajan (2000) were used to measure how often the managers communicated through different modes of communication in a five-level, Likert-type scale (from “very rarely” to “most days”).

**Perceived trustworthiness** (\(\alpha = 0.94\)). From the many different existing operationalizations of trust-based concepts, the instrument developed by Mayer and Davis (1999) was chosen because it was specifically designed to measure perceived trustworthiness along its three main dimensions (benevolence, integrity, and competence), and it has obtained excellent psychometric properties. Though many different dimensions of trustworthiness have been proposed in the past, this scale parsimoniously captures the key aspects of the expectations about others’ intentions and behaviors (Mayer et al. 1995). All variables...
are assessed from the trustor’s point of view with regard to the trustee. Twelve items measured the three key dimensions of trustworthiness based on a seven-point, Likert-type scale from “strongly disagree” to “strongly agree.” The 12 items were aggregated to compute an overall measure of trustworthiness. The analysis was also conducted for each dimension of perceived trustworthiness separately, and similar results were obtained regarding the moderating impact of communication frequency on the effects of trustor and trustee, though they are not presented here due to space constraints.

**Results**

Descriptive statistics for the variables and their zero-order correlations are shown in Table 1. There is wide variation across the managers in the sample for the measured variables, so that range restriction does not constitute a problem in the analysis. Perceived trustworthiness varies substantially across the dyadic relations within the sample, being close to zero in some dyads. Note also the positive and significant correlation between communication frequency and perceived trustworthiness. In this study, we are interested in the moderating role of communication frequency and not in its direct effect on the perceptions of trustworthiness, but we can see that more positive evaluations of trustworthiness take place in relationships where there is more frequent communication, as claimed by earlier research (O’Reilly and Roberts 1976, Whitener et al. 1998).

The moderating effect of communication frequency on the association between two other variables (e.g., trustor’s tenure and trustworthiness) can be tested through one of two approaches: moderated hierarchical regression with an interaction term or subgroup analysis. In this study we have chosen to utilize the subgroup analysis approach for the following two reasons:

1. The hierarchical regression approach would have required the entry of eight interaction terms in addition to the main effect variables. This would have introduced severe multicollinearity problems among the interaction terms and, thus, made the interpretation of the results quite difficult.
2. The moderator variable, communication frequency, has a distribution that is quite different from a normal

<table>
<thead>
<tr>
<th>Table 1 Summary Statistics and Zero-Order Correlations</th>
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<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>GPC</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Trustor Variables</td>
</tr>
<tr>
<td>- Attitude Predisposition</td>
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<tr>
<td>- Autonomy</td>
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<td>- Bonus</td>
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<td>- Tenure</td>
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<tr>
<td>Trustee Variables</td>
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<td>- Attitude Predisposition</td>
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<td>- Autonomy</td>
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<td>- Bonus</td>
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<tr>
<td>- Tenure</td>
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<tr>
<td>Trust Variables</td>
</tr>
<tr>
<td>- Perceived Trustworthiness</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Individual Variables (50 managers)</th>
<th>Mean</th>
<th>St. Dev.</th>
<th>Dyadic Variables (157 Dyads GPC ↔ MA)</th>
<th>Mean</th>
<th>St. Dev.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Attitudinal Predisposition</td>
<td>60.77</td>
<td>18.92</td>
<td>- Frequency of Communication</td>
<td>2.71</td>
<td>3.41</td>
</tr>
<tr>
<td>- Tenure</td>
<td>12.40</td>
<td>8.08</td>
<td>- Perceived Trustworthiness</td>
<td>14.03</td>
<td>4.10</td>
</tr>
<tr>
<td>- Autonomy</td>
<td>19.38</td>
<td>4.13</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Bonus</td>
<td>23.22</td>
<td>10.25</td>
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</tbody>
</table>

N = 157 dyads; * p < 0.05; ** p < 0.0.
distribution. Data on this variable ranged from 0 to 15 with an average of 2.71, suggesting that there was very little communication in many dyads. More detailed examination indicated that the observed amount of communication was actually zero (i.e., "very rare") in the case of 64 dyads. The distribution is thus highly skewed to the right, with a decreasing number of observations as communication frequency increases (skewedness of 1.39), which would make the interaction analysis based on this variable very unreliable.

To conduct the subgroup analysis, we broke the sample into three groups based on the frequency of communication, discarded the group in the middle, and tested the hypotheses through regression analysis in the high- and the low-communication subsamples separately. To make the two subsamples approximately comparable in size, the low-communication group included the 64 dyads with very rare communication frequency and the high-communication group included the 55 dyads with communication frequency equal to or greater than four, thus discarding for the analysis the 38 dyads with communication frequency from one to three.

The results from the regression analyses are presented in Table 2. The table shows the standardized coefficients for both the high and the low subsamples as well as a test of significance of the difference between the coefficients based on Fisher Z transformations. This method is explained, for instance, in Cohen and Cohen (1984) and used in Arthur (1994). Bivariate subsample analysis of each independent variable and perceived trustworthiness showed virtually identical results (not shown).

The results show clear support for Hypothesis 1 regarding the effect of the trustor’s attitude towards peers on perceived trustworthiness and the moderating effect of communication frequency. The regression coefficient for the trustor’s attitude towards peers is significant and positive for the low-communication subgroup, and it is significantly smaller for the high-communication subgroup. Thus, there is clear evidence that the trustor’s attitude towards peers is an important determinant of perceived trustworthiness and that this relationship is moderated by communication frequency in the expected direction.

In contrast, the trustee’s attitude towards peers is not a significant predictor for either subgroup; thus, Hypothesis 2 is not supported. This unexpected result may be due to the focus of the trustor not so much on the trustee’s general attitude towards peers, but more specifically on his/her attitude with respect to the trustor specifically.

The empirical results for the effect of the trustor’s and the trustee’s organizational contexts (Hypotheses 3 through 8) provided mixed results. With regard to the trustor variables, Hypothesis 5, concerning the trustor’s autonomy, was not supported because the coefficient was nonsignificant for both subsamples. Hypotheses 3 and 7, concerning the trustor’s bonus intensity and tenure, were only partially supported. The effect of these variables was in the expected direction, positive for organizational tenure and negative for bonus intensity. There was also a significant moderating effect of communication frequency. However, the direction of this effect was contrary to our expectations. The change in the coefficient from the low-communication to the high-communication subgroup was in the opposite direction for the trustor’s bonus intensity and organizational tenure. The coefficient for tenure is more positive and that of bonus intensity more negative when communication between trustor and trustee is more frequent. Thus, contrary to our expectations, the trustor’s linkages to the organization become more, rather than less, important as antecedents of perceived trustworthiness in a high-communication dyadic context.

On the other hand, the results generally confirm our expectations for the trustee-related contextual variables. All the coefficients have the expected sign, and they change in the expected direction between the low- and high-communication subgroups. However, while the coefficient for bonus intensity and tenure are significant in the high-communication subgroup, the coefficient for autonomy is not significant. Thus, as Hypotheses 4 and 8 predicted, the trustee’s bonus intensity and tenure become more relevant when communication with the trustor is high; however, contrary to our predictions in Hypothesis 6, the change was not significant for the trustor’s autonomy.

These results merit further discussion. When communication with peers is low, general attitude towards peers captures a large portion of the extent to which managers perceive others within the organization as trustworthy. In this case, the assessment of trustworthiness basically reflects the trustor’s predisposition to trust his/her colleagues, regardless of the specific organizational context of the trustor and the trustee. In contrast, when communication is high, the linkages that both managers have to the organizational network absorb part of the explanatory power that the general attitude towards peers loses. Thus, when there is frequent communication, the context within the organization of both members of the dyad (rather than just that of the trustee) becomes more relevant. Why do trustor-related contextual variables also become more significant when communication is high? It is likely that, with little communication between the two managers, the trustor may not know how his/her own interests and context within the organization contrast with those of the
Table 2  Antecedents of Perceived Trustworthiness in Low- vs. High-Communication Contexts

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Hypotheses</th>
<th>Low-Communication Subsample</th>
<th>High-Communication Subsample</th>
<th>Test of Coefficient Differencea</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Variable:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Product Division (GPC dummy)</td>
<td>0.165</td>
<td>0.558*</td>
<td>0.20</td>
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<tr>
<td>Trustor Variables:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Attitude Predisposition</td>
<td>1</td>
<td>0.668**</td>
<td>0.402*</td>
<td>-0.33*</td>
</tr>
<tr>
<td>– Tenure</td>
<td>3</td>
<td>0.081</td>
<td>0.419*</td>
<td>0.33*</td>
</tr>
<tr>
<td>– Autonomy</td>
<td>5</td>
<td>0.098</td>
<td>0.218</td>
<td>0.10</td>
</tr>
<tr>
<td>– Bonus Intensity</td>
<td>7</td>
<td>-0.085</td>
<td>-0.505*</td>
<td>-0.38*</td>
</tr>
<tr>
<td>Trustee Variables:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Attitude Predisposition</td>
<td>2</td>
<td>0.154</td>
<td>0.194</td>
<td>0.05</td>
</tr>
<tr>
<td>– Tenure</td>
<td>4</td>
<td>-0.062</td>
<td>0.408</td>
<td>0.44*</td>
</tr>
<tr>
<td>– Autonomy</td>
<td>6</td>
<td>0.063</td>
<td>0.510</td>
<td>0.24</td>
</tr>
<tr>
<td>– Bonus Intensity</td>
<td>8</td>
<td>-0.057</td>
<td>-1.044*</td>
<td>-0.40*</td>
</tr>
<tr>
<td>R²</td>
<td>0.616**</td>
<td>0.454</td>
<td></td>
<td></td>
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<tr>
<td>Adj. R²</td>
<td>0.509</td>
<td>0.241</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

aN = 64. Subsample with Frequency of Communication valued as zero (= very rare).

bN = 55. Subsample with Frequency of Communication valued as four or greater.

cTest of difference between coefficients computed after transformation of partial correlations into Fisher Z scores: High-Communication score minus Low-Communication score.

*p < 0.05.

**p < 0.01.

Note. Following standard practice, we conducted the tests of significance for each of the two subsamples using two-tailed tests. In contrast, the tests for the difference between the two coefficients were conducted using a one-tailed test of significance because we formulated the second part of the hypotheses with the expectation of a specific sign in the difference between the two coefficients. The hypotheses argue that the coefficients will be smaller in one of the two subsamples specifically, and this direction is essential.

From the eight hypotheses, there was clear support for three of them. In two others, regarding the trustor’s linkages to the organization, there was only partial support because the moderating effect of communication frequency was contrary to what we expected. However, the underlying premise in all hypotheses that more frequent communication shifts the relative weight from the trustor to the trustee has not been directly tested yet, and it needs additional analysis. Now we are not interested in the specific characteristics of the trustor and the trustee, and how their impact changes when communication increases, but in the overall weight that each party has in the perceived level of trustworthiness. Basically, we need to estimate how much of the variance in the level of perceived trustworthiness is attributable to the trustor and how much to the trustee for the two subgroups, high and low communication.

This type of analysis can be done with a components-of-variance analysis, as we explain below. The sample
consists of 157 dyads among 50 managers within the organizational network. Each observation has one trustor and one trustee, which are the two effects that we want to assess. To estimate the relative weight of the trustor and the trustee, we could assign one dummy variable to each trustor and another to each trustee and conduct the analysis as a fixed-effects ANOVA (equivalent to classical hierarchical regression analysis). This methodology requires a very large number of dummies, and thus becomes inappropriate for this study. A more efficient method with regard to degrees of freedom is a random-effects ANOVA (components of variance), which is considered more suitable than fixed-effects ANOVA when the levels of each effect (the dummies for trustee and trustor) are supposed to be randomly drawn from a larger population, rather than exhausting all of their possible values. The analysis was done for perceived trustworthiness as the dependent variable. Further discussion of this technique versus classical hierarchical regression analysis can be seen in Rumelt (1991).

The empirical results from the full sample \((n = 157\) dyads) showed that because perceived trustworthiness is a cognitive evaluation performed by the trustor, the personal biases and surroundings of the trustor have a substantial effect on his/her evaluations of other managers’ trustworthiness within the organization (33.02% of the variance), while the trustee captured only 7.25% of the variance, leaving the rest as unexplained variance (59.73%). These results control for the frequency of communication between trustor and trustee.

The same components-of-variance analysis was performed for the two subsamples: low- vs. high-communication frequency. The results from the low-communication subsample \((n = 64\) dyads) show that, when communication is rare, only the trustor’s own propensity to trust matters (66.55% of variance vs. only 6.87% for the trustee) and the trustee’s own characteristics and context become virtually irrelevant because the trustor’s intentions and actual behavior cannot be sufficiently noticed and interpreted by the trustor. This is fully consistent with the results from the earlier regression analysis, where, in the low-communication subsample, the trustor’s attitude towards peers was the only important predictor of perceived trustworthiness and none of the trustee variables was significant.

In contrast, in the high-communication subsample \((n = 55\) dyads) the effect of the trustor is much smaller than in the other subsample (20.17%), and the effect of the trustee even becomes greater (38.15%) than that of the trustor. However, even in the case of high communication, the trustor’s unique context within the organization still has an important impact on how much he/she trusts his/her peers. This is also consistent with the regression results presented earlier, where we found that both the trustor’s and trustee’s linkages to the organization are significant when communication is high, though the trustor’s general attitude towards peers becomes significantly less relevant. In this analysis, however, we have the additional insight that greater communication indeed shifts a substantial part of the relative variance in explaining perceived trustworthiness from the trustor to the trustee.

Discussion

Overall, the empirical analysis provides support for several of the expected antecedents of perceived trustworthiness and the presence of a significant moderating effect by communication frequency. The extent to which managers believe that their peers are trustworthy results from a combination of the managers’ attitudes toward their peers and the place within the organizational network of the two parties in a dyad. The effect of these antecedents of trust is clearly moderated by frequency of communication. These results lend support to an eclectic view of how trust can be created, based on individual attitudes, organizational factors, and relational variables (Whitener at al. 1998), where relational factors moderate the impact of the other variables. Thus, it does not seem correct to negate the effect of individuals and their own characteristics in the perceived trustworthiness of their peers within business relationships (Williamson 1993), nor disregard the impact of organizational instruments such as incentives to build trust (Sitkin and Roth 1993). Their final effect may depend on the presence of moderating relational variables that represent the intensity of interaction, like communication frequency.

The individual attitudes of managers toward their peers are the critical determinant of intraorganizational trust in a context of low communication. As communication increases, the general predisposition towards peers loses relevance and instead the specific linkages of the trustor and the trustee to the organizational network become more important as drivers of perceived trustworthiness. Thus, we did not find support for the expected decrease in the importance of all the trustor-related variables as communication increases. However, the components-of-variance analysis showed that indeed the trustee becomes more salient in the evaluations of trustworthiness in high-communication contexts, but the trustor characteristics do not lose all impact. Basically, the trustor’s general attitude towards peers decreases in significance, but his/her specific linkages to the organization gain part of it in exchange. When communication frequency is high, it is the
relative interests and organizational contexts of both trustor and trustee that are behind the evaluations of trustworthiness within the organization.

These results have several contributions for organizational research on trust. First, the study explores the subjective nature of trust as a "psychological state" that takes place in the minds of managers (Rousseau et al. 1998) and how the perceptions of trustworthiness arise within the organization (Mayer et al. 1995). The paper allows us to disentangle the trustor's own circumstances within the organizational network from the trustee's characteristics and their effects on the trustor's evaluations about the trustworthiness of his/her peers. Second, we found clear empirical evidence of the important role of communication in explaining perceived trustworthiness. Though the role of this variable in creating trust had been identified by other scholars (O'Reilly and Roberts 1976, Butler 1991, Whitener et al. 1998), its moderating effect on other variables had not yet been studied.

We did not formulate any specific hypotheses about the relative impact of individual characteristics versus context-related variables and the moderating effect of communication frequency on them. However, it is interesting to notice that as communication grows, individual internal dispositions lose relevance in favor of the organizational context in which trustor and trustee are immersed. Perceived trustworthiness is initially in the eye of the beholder, but, as the frequency of communication increases, the specific interests and linkages to the organization of both trustor and trustee become more important. Thus, we found clear evidence for the claim of Rousseau et al. (1998) that "context is critical to understanding trust" (p. 402). In particular, we found empirical evidence of how the interests of the managers inside the organization (as reflected by bonus intensity) and the history of the managers' connections to the organizational network (measured by tenure within the organization) drive perceptions of trustworthiness. The reason why individual characteristics give way to context as communication increases is probably related to the nature of human beings as social animals. Relationships among managers within an organization are obviously embedded in the organizational context to which the managers are more or less closely linked. As we discussed earlier, with frequent contact and communication, the effect of this context becomes more noticeable in the behavior of managers and in the attitudes they may develop regarding their peers.

The results also have implications for how trust can be created within organizations. To increase trust within a network of managers, it may be more effective to attempt to change managers' attitudes about others, particularly in a low-communication context. In contrast, if communication is high, it may be more appropriate to try and change the context within the organization, so that their behavior will be observed by their colleagues for trust to grow. In other words, when communication is low, a "push" strategy to build trust by intervening in the attitudes of managers as trustors may be more effective than an indirect "pull" strategy. In contrast, when communication is high, an indirect "pull" strategy to increase trustworthy behavior as an initiator of trust may be more effective.

In this study, we focused on the impact of several individual, organizational, and relational factors on the level of intraorganizational trust. There are at least two limitations that need to be acknowledged. First, we have studied only a limited number of variables across lateral relationships. Many other variables may also be important antecedents of perceived trustworthiness within organizations, particularly dyadic variables, such as power asymmetry, degree of homophily, and quality or type of communication. Future research may address how these other variables may drive the emergence of trust between the managers of an organization, including other levels (e.g., trust at the top-management-team level) and types of relationships (e.g., vertical relationships within boss-subordinate dyads). Second, this study was conducted on a sample of dyadic relationships within one organization. Though there is no reason to believe that the antecedents of trust in this company are different from those within any other company, generalizations based on data from one company need to be taken with the customary precaution.

Appendix. Questionnaire Items

1. Individual information about the managers, including the year in which they joined the company (to compute the tenure variable) and the unit in which they worked (dummy-coded one for the production unit or GPC variable, and zero for the marketing unit).

2. Perceived Trustworthiness (Mayer and Davis 1999)

Please indicate the extent to which you agree with the following statements using the scale from one to seven below (Scale: strongly disagree—neutral—strongly agree):

(a) Integrity dimension items: This manager has a strong sense of justice; I never have to worry about whether this manager will stick to his word; this manager tries hard to be fair in dealings with others, and sound principles seem to guide this manager's behavior.

(b) Benevolence dimension items: This manager really looks out for what is important for me; this manager is very concerned about my welfare; my needs and desires are very important to this manager, and this manager will go out of his way to help me.

(c) Competence dimension items: This manager is very capable of performing his job; I feel very confident about this manager's skills; this manager has much knowledge about the work that he needs to do, and this manager is known to be successful at the things he tries to do.
(3) Attitudinal Predisposition Toward Peers (Fiedler 1971)
To answer this question, think of everyone that you have worked with in the past and then describe the one person with whom you worked least well. Please mark with an X the location between the two extremes that describe this individual. (Example: Short :: X :: Tall.)


(4) Autonomy (Griffin et al. 1980)
Listed below are several elements pertaining to your job’s autonomy. Please indicate how much they are mutually present in your job, using this one to seven scale (Scale: A minimum amount—An average/normal amount—A maximum amount):

Items: The freedom to do pretty much what I want, the control I have over the pace of my work, the opportunity for independent thought and action, and the overall degree of autonomy.

(5) Bonus
Please indicate the amount of your bonus for 1997. If you obtained the maximum possible bonus, what percentage of your total compensation would it be?

(6) Frequency of Communication (Gupta and Govindarajan 2000)
Please rate the frequency of communication with this person using the following scale (1 = very rarely; 2 = most months within a year; 3 = several times within a month; 4 = every week; 5 = most days):

Items: Face-to-face meetings, through e-mail; over the telephone, through ad hoc written memos, and through periodic formal written memos.

References
Rice, W. R. 1978. Psychometric properties of the esteem for the least


