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The Dynamic Interplay Between Merger Process Justice and Cognitive Trust in Top Management: A Longitudinal Study

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ABSTRACT

This study examines two fundamental concerns in the context of organizational change: employees' perceptions of merger process justice and cognitive trust in the top management team. Our main purpose is to better understand the nature of reciprocal relations between these important constructs through a significant change event. Previous research, building mainly on social exchange theory, has framed trust as a consequence of justice perceptions. More recently, scholars have suggested that this view may be overly simplistic and that trust-related cognitions may also represent an important antecedent of justice perceptions. Using three-wave longitudinal survey data ($N = 622$) gathered during a merger process, we tested reciprocal relations over time between cognitive trust in the top management team and perceptions of the merger process justice. In contrast to the conventional unidirectional notion of trust or trust-related cognitions as outcomes of perceived justice, our results show positive reciprocal relations over time between cognitive trust and justice. Our findings also revealed that the positive influence of cognitive trust on subsequent justice perceptions was slightly more robust than the opposite direction. By examining cross-lagged longitudinal relations between these critical psychological reactions, this study contributes across multiple domains of the management literature including trust, justice, and organizational mergers.

Keywords: Mergers & acquisitions; justice/fairness; trust; leadership; longitudinal study

Scholars have accumulated considerable evidence regarding the benefits of fostering favorable perceptions of justice and trust in organizations. For instance, meta-analytic evidence indicates that trust and justice constructs are significantly associated with a similar set of outcomes including job satisfaction, task performance, citizenship behavior, and turnover (e.g., Colquitt et al., 2013; Dirks & Ferrin, 2002; Rupp, Shao, Jones, & Liao, 2014). Despite the wealth of research focused on issues of organizational justice and trust, the nature of relations between these constructs “remains poorly understood” and the extant literature has been “marked by the deceptively uncontroversial notion that justice leads to trust” (Colquitt & Rodell, 2011, p. 1202). With this in mind, recent conceptual advances suggest that these constructs should have positive reciprocal relations over time (Holtz, 2013). That is, trust cognitions at one point in time may shape subsequent justice perceptions and those justice perceptions may, in turn, impact later trust cognitions (and vice versa). Empirically, however, the possibility of feedback loops, or reciprocity, between justice and trust variables remains largely untested.

The primary goal of the current study is to help elucidate the reciprocal relations between justice and trust variables over time. We examine these relations in a three-wave, cross-lagged, longitudinal study of employees experiencing an organizational merger. The study context is important because the effective management of employee perceptions of trust and fairness is vital to the success of organizational mergers (Giessner, Ullrich, & van Dick, 2012; Stahl, Larsson, Kremershof, & Sitkin, 2011) and questions of trust and fairness are particularly salient during change events (Dirks & Ferrin, 2002; Li, 2012; Lind, 2001).

Establishing a more complete understanding concerning the dynamic relations between trust and justice is important if the research literature is to provide sound guidance for the effective management of employee reactions to significant organizational events (Holtz, 2015). This study provides the first empirical test of reciprocal relations between

justice and trust variables assessed across more than two time points (i.e., justice→ trust→ justice; trust→ justice→ trust). Furthermore, to strengthen our inference regarding the over time relations and causality, we control for the effect of prior level of the dependent variable in our analyses (Cole & Maxwell, 2003; Holtz, 2013; Little, 2013). In addition, this study answers calls for more longitudinal research into the temporal dynamics of justice perceptions (e.g., Fortin, Cojuharenco, Patient, & German, 2016; Rupp et al., 2014) and for research to consider the role of trust cognitions in shaping justice perceptions (e.g., Colquitt & Rodell, 2011; Lewicki, Wiethoff, & Tomlinson, 2005). Finally, we address calls for research to better understand how employees' psychological reactions unfold throughout a merger process (e.g., Monin, Noorderhaven, Vaara, & Kroon, 2013; Nemanich & Keller, 2007).

Organizational Justice and Trust Cognitions

The organizational justice literature delineates several key justice facets including perceptions of outcome allocations (distributive justice), procedures (procedural justice), explanations (informational justice), and interpersonal treatment associated with the implementation of procedures and outcomes (interpersonal justice; Colquitt & Shaw, 2005). However, because employees naturally consider fairness issues in a more holistic sense (Ambrose & Schminke, 2009; Greenberg, 2001; Shapiro & Kirkman, 2001), and facet measures are often highly correlated, it is often prudent to combine facets into a composite justice construct, unless there are strong theoretical grounds to expect unique effects across justice facets (Ambrose & Arnaud, 2005; Colquitt & Rodell, 2015; Holtz, 2013). Currently, there is no theoretical basis to expect differential relations between specific facets of justice constructs and cognitive trust (Holtz, 2013). Therefore, we focus on aggregate perceptions of the formal procedures, explanations, and interpersonal treatment, or perceived “process

fairness” of an organizational merger in this study (e.g., Bobocel & Gosse, 2015; Brockner, Wiesenfeld, & Diekmann, 2009; Lind & Tyler, 1988).¹

Organizational scholars have also conceptualized trust variables in different ways (McEvily & Tortoriello, 2011). For instance, McAllister (1995) described that trust may focus on emotional connections (affective trust) or determinations of an entity’s competence and responsibility (cognitive trust). We focus on cognitive trust evaluations in this study for two reasons. First, building on organizational change research (e.g., Lines, Selart, Espedal, & Johansen, 2005; Tyler & De Cremer, 2005), we reasoned that the complexity involved in planning and implementing a large-scale merger should make concerns regarding the competence of the relevant decision-makers (i.e., the top management team) particularly salient in the minds of affected employees. Second, rank and file employees would not likely have the opportunity to develop close interpersonal relationships (affective trust) with the top management team overseeing the merger process. Furthermore, it is important to clarify that cognitive trust is conceptually distinct from the psychological state of trust, which reflects a general willingness to be vulnerable to the actions of another party (Mayer, Davis, & Schoorman, 1995; Rousseau, Sitkin, Burt, & Camerer, 1998). Given that the relevant research literature has not consistently distinguished between different trust concepts (Colquitt, Scott, & LePine, 2007), we use the term *trust-related cognitions* to encompass research involving trust concepts generally.

Justice as an Antecedent of Trust-Related Cognitions

Among the various theoretical frameworks that can be utilized to investigate justice phenomena, social exchange theory (Blau, 1964) has been the most dominant perspective for explaining how justice influences trust-related cognitions in employment relationships (Colquitt & Rodell, 2011). The relevance of social exchange theory for understanding justice-trust relations has been detailed extensively in previous reviews (Cropanzano & Mitchell,

2005; Cropanzano & Rupp, 2008). Social exchange theory is based on the idea of reciprocity: being treated in a favorable way by an exchange partner creates an obligation to reciprocate in a similarly positive manner (Blau, 1964). Successfully reciprocated exchanges help to demonstrate that one is trustworthy and gradually build trust between exchange partners over time (Blau, 1964; Cook, 2005; Molm, Takahashi, & Peterson, 2000). While there are myriad possible social exchange considerations, authors have suggested that fairness is particularly important for cultivating positive exchange relationships (e.g., Blader & Tyler, 2005; Colquitt & Zipay, 2015; Dirks & Ferrin, 2002; Moorman & Byrne, 2005). Therefore, when the leaders of an organization treat employees fairly, employees tend to reciprocate with positive attitudes and believe their leaders are trustworthy.

A large empirical literature, including several meta-analytic studies (Cohen-Charash & Spector, 2001; Colquitt et al., 2013; Dirks & Ferrin, 2002; Rupp et al., 2014), supports the notion that employee perceptions of justice are positively related to trust-related cognitions. Consistent with social exchange theory (Blau, 1964) and relevant research findings (e.g., Colquitt et al., 2013), we expect that a top management team's use of fair treatment and procedures when planning and implementing an organizational merger will be related to employees' beliefs that the team is competent and reliable (cognitive trust).

Hypothesis 1. Process justice perceptions will have a positive relationship with subsequent cognitive trust, controlling prior cognitive trust.

Justice as an Outcome of Trust-Related Cognitions

Although conventional wisdom suggests that justice perceptions influence trust-related cognitions, historically, this relationship has not received sufficient scrutiny and there is reason to suspect that trust-related cognitions play an important role in shaping perceptions of justice (Colquitt & Rodell, 2011; Lewicki et al., 2005). For instance, the trust primacy model (Holtz, 2013) argues that trust-related cognitions inevitably exert significant influence

on employee perceptions of justice. More specifically, the psychological phenomenon of confirmation bias is key to understanding why trust-related cognitions may impact employee perceptions (Dirks & Ferrin, 2001; Kramer, 2009; Robinson, 1996).

Confirmation bias represents the fundamental tendency for people to perceive and interpret information in a manner that reinforces their preconceived expectations or beliefs (e.g., Evans, 1989; Fiske & Taylor, 1991; Nickerson, 1998; Snyder & Swann, 1978). Simply stated, people generally see what they expect to see (Shapiro & Kirkman, 2001). A person who believes a trustee is incompetent (low cognition-based trust) will likely to perceive a lack of process fairness (e.g., capricious decisions, inadequate explanations, etc.) permeating through actions of the trustee because such perceptions would validate the trustor's expectations of incompetence. Conversely, expectations that a trustee is highly competent (high cognition-based trust) may predispose one towards seeing signs of favorable process fairness (e.g., judicious decisions, reasonable explanations, etc.) in the actions of the trustee. Thus, trust-related expectations may color justice perceptions in a manner consistent with principles of confirmation bias (Holtz, 2013; Shapiro & Kirkman, 2001). In this manner, "distrust may become the source of its own evidence" (Gambetta, 1988, p. 234).

As presented earlier, meta-analytic research suggests that trust-related cognitions are positively correlated with justice perceptions (e.g., Colquitt et al., 2013). However, past estimates are largely derived from cross-sectional studies that preclude causal inferences (Holtz, 2013). In recent years, some multi-wave studies have sought to test the effect of trust-related cognitions on justice perceptions. For instance, a longitudinal survey study by Holtz and Harold (2009) found that organization-focused and supervisor-focused trust predicted overall justice perceptions over time. Similarly, a series of experimental studies by Holtz (2015) suggested that pre-event trustworthiness evaluations had positive effects on post-event justice perceptions. Taken together, we expect that higher levels of cognitive trust in the top

management team will predispose employees towards perceiving the actions of the top management team in a more favorable light.

Hypothesis 2. Cognitive trust will have a positive relationship with subsequent perceptions of process justice, controlling prior process justice perceptions.

Reciprocal Relations Over Time

Scholars have suggested that trust and other psychological constructs tend to have reciprocal relations over time (Andersson & Pearson, 1999; Chan & McAllister, 2014; Ferguson & Peterson, 2015). For instance, Holtz's (2013) trust primacy model describes a reciprocal relationship such that evaluations of trustworthiness will shape how one perceives subsequent justice-related events and then those event justice perceptions, in turn, will affect subsequent trustworthiness evaluations. Likewise, Lewicki et al. (2005) proposed trust and justice as co-developing constructs that influence each other over time.

While there are theoretical reasons to expect reciprocal relations between trust-related cognitions and justice constructs, research has not fully examined this proposition. Research by Colquitt and Rodell (2011) represents the only test of reciprocal relations between justice and trust constructs. Their results suggested that employee evaluations of their supervisor's integrity and interpersonal justice were positively, reciprocally, related across two time points. However, cross-lagged estimates between procedural, informational and interpersonal justice perceptions (i.e., process fairness) and evaluations of supervisors' competence and reliability (i.e., cognitive trust) were not significant in their sample. Though this study provides important insights, there is still need for further investigation. For instance, the use of more than two time points can allow for stronger inferences regarding the possibility of reciprocal causality between variables (Farrell, 1994; Little, 2013; Ployhart & Vandenberg, 2010). Additionally, Colquitt and Rodell's study was not tied to any particular event or context. An organizational merger provides an ideal context to study reciprocal relations

between trust and justice constructs because mergers represent dynamic events that are associated with high uncertainty (Dirks & Ferrin, 2002; van den Bos, 2001). Consistent with extant theoretical arguments (Holtz, 2013; Lewicki et al., 2005) we hypothesize:

Hypothesis 3. Process justice perceptions and cognitive trust have positive reciprocal relations over time. Specifically, planning stage (Time 1) process justice (cognitive trust) perceptions will have a positive relationship with subsequent post-merger (Time 2) cognitive trust (process justice) perceptions, which in turn will have a positive relationship with later post-merger (Time 3) process justice (cognitive trust) perceptions.

Method

Sample and Procedure

This study took place in the context of a merger between two civil service organizations in Finland. In total, approximately 15,000 employees were affected by this merger. Three online surveys were administered at successive one-year intervals (see Figure 1) to provide sufficient time to capture the psychological experiences of employees through the full merger process. The three surveys were completed by 3,679, 1,181, and 623 respondents, respectively.² One respondent was on the top management team and was excluded from the dataset. Thus, the final sample included 622 employees matched across three time points. At Time 1, the average participant was 47.5 years old with between 13 to 15 years of organizational tenure. The majority of participants were female (88%) and had the equivalent of a bachelor's degree or higher (57%). This the first use of the data collected as part of a larger organizational study which had been granted research permissions by the participating organizations.

It is important to note that unlike most private sector mergers, this change was mandated by a municipal council. The organizations' top management team did not control

the initial merger decision, but they were explicitly responsible for planning and implementing the organizational merger. At the time of the first survey, employees knew that the merger was going to occur but did not have specific information concerning the outcomes of the merger for them personally. The principle changes associated with the merger, which took approximately six months, were carried shortly after the first survey and they were finished several months before the second survey (see Figure 1 for description of the merger phases involved in this study).

Measures

Descriptive statistics for the study's constructs are presented in Table 1. Unless stated otherwise, items were assessed on a 5-point scale (1 = *completely disagree*; 5 = *completely agree*). A full list of items is presented in Appendix.

Merger process justice. We measured the perceived merger process justice using six items modified from Moorman (1991) and Mansour-Cole and Scott (1998). Items focused on the fairness of the decision-making process and implementation of the procedures during the merger. Thus, the measurement referent was the merger process event. The measurement consisted of items tapping into procedural (fairness of procedures), informational (accuracy and quality of explanations), and interpersonal (given respect and concern) justice dimensions.

Cognitive trust in top management team. We measured cognitive trust in the top management team by using four items adapted from Mayer and Davis (1999) that tapped into the competence and reliability evaluation of the top management team, which included the head of the organization and head of divisions.³ At each measurement time point, the referent of the cognitive trust measurement was the current top management team. In between the one-year intervals of the data collection, changes occurred in the top management team. Between Time 1 and Time 2, eleven out of the twelve members of the top management were

replaced or discharged. Between Time 2 and Time 3, two out of the seven managers in the top management team changed.

Control variables. Previous studies have shown that in addition to justice perceptions, outcome favorability can affect the level of trust towards authorities (e.g., Brockner, Siegel, Daly, Tyler, & Martin, 1997). Therefore, we controlled for the effect of post-merger perceptions of outcome favorability in our analyses. Outcome favorability was measured on a 7-point scale (1 = *mostly negative*; 7 = *mostly positive*). Furthermore, we controlled for three time-invariant variables. Pre-merger organization (0 = *organization A*, 1 = *organization B*) was controlled for as a merger process can be experienced and perceived differently depending to which merging organization an employee belongs to (e.g., Giessner et al., 2012). In addition, we controlled for the participant's position in the organization (0 = *employee*, 1 = *supervisor or middle manager*) as the higher-level employees can have a different viewpoint on the merger process and the top management team, and as prior research has shown that justice perceptions vary as a function of hierarchical level in the organization (Schminke, Cropanzano, & Rupp, 2002). Finally, age was controlled for as prior studies have shown that trustworthiness (Sutter & Kocher, 2007) and justice perceptions (Janssen, 2004) may vary as a function of age.

Data Analysis

We used structural equation modeling in Mplus 7.2 (Muthén & Muthén, 2012) to estimate models with latent factors. Covariances among the items' residuals over time were estimated as recommended for longitudinal structural equation modeling (e.g., Little, 2013; Ployhart & Vandenberg, 2010). Models were estimated using the maximum likelihood estimation with robust standard errors due to non-normality in the indicators. All the model comparisons were conducted by using Satorra-Bentler scale corrected chi-square difference test (Satorra & Bentler, 2001).

First, we conducted confirmatory factor analyses to determine if merger process justice was empirically distinct from our measure of cognitive trust in the top management team at all the three time points. A single-factor model, where all ten items loaded onto one factor at each of the three time points, resulted in a poor fitting model, $\chi^2(372) = 2511.62, p < .001$, Comparative Fit Index (CFI) = .81, Tucker-Lewis Fit Index (TLI) = .78, Root Mean Square Error of Approximation (RMSEA) = .10, Standardized Root Mean Square Residual (SRMR) = .11. A two-factor model, where process justice and cognitive trust items loaded onto two separate factors, as shown in Table 2, provided improved and excellent fit to our data, $\chi^2(360) = 535.70, p < .001$, CFI = .98, TLI = .98, RMSEA = .03, SRMR = .03. In addition, the difference between these two models was statistically significant, $\Delta\chi^2(12) = 1351.41, p < .001$. To conclude, the excellent model fit of the proposed two-factor structure indicates that the two factors—process justice and cognitive trust—exist in the data, and the same items load onto the two distinct factors at all the three measurement time points.⁴

Next, to verify that the possible changes in the latent factors are not due to changes in the nature of the construct (e.g., membership in the top management), we tested for measurement invariance over time to verify that the same construct was operationalized by using the same set of measures at each of the three time points (Little, 2013; Vandenberg & Lance, 2000). First, a configural invariance model of the two-factor structure, as described above and without placing any constraints, was assessed (Table 3). In the second step, a test of weak invariance was carried out by constraining factor loadings equal over time. As the decrease in model fit in comparison to configural model was not statistically significant, the weak invariance was established. As the final step, we estimated strong invariance by constraining also the item intercepts equal across time. A significant chi-square difference in comparison to a model with weak invariance, $\Delta\chi^2(16) = 108.42, p < .001$, indicated some level of noninvariance among items' intercepts. We established partial strong invariance by

not constraining the five item intercepts (item 4 of process justice at Time 1, Time 2 and Time 3; item 5 of process justice at Time 3; item 4 of cognitive trust at Time 3; see Table 2) equal over time. As the partial strong invariant model is in accordance with the recommended criteria (Byrne, 2012; Little, 2013), we concluded that the model indicated sufficient measurement invariance over time and proceeded to investigate over time relations between the variables.

Results

As an analysis method, we estimated a longitudinal cross-lagged panel model with latent factors. The time-invariant control variables (pre-merger organization, position in the organization, age) were regressed on justice and cognitive trust factors at all three time points to achieve full control of covariate influences (Little, 2013). Outcome favorability (a time-variant covariate) was regressed on the concurrent cognitive trust and process justice factors. We present results for nested models in Table 4. The resulting fit indices indicated that the models estimating over time relations either from process justice to subsequent cognitive trust (Model 2), or the opposite direction (Model 3), provided a better fit to the data than a model that only estimated autoregressive paths among cognitive trust and process justice (Model 1). However, the reciprocal model (Model 4) provided the best fit to our data as indicated by the chi-square difference tests.

As shown in Figure 2, the results of the reciprocal model indicated that planning stage process justice perceptions (T1) was positively related to subsequent post-merger cognitive trust (T2). However, the relationship between post-merger process justice (T2) and subsequent cognitive trust (T3) was not statistically significant. Accordingly, Hypothesis 1 was partially supported. The results also indicated that cognitive trust was positively related to subsequent process justice perceptions in both of the study's time intervals (T1→T2, & T2→T3).⁵ Thus, Hypothesis 2 was fully supported. Furthermore, the results provided partial

support for Hypothesis 3. Specifically, the justice→ trust→ justice reciprocal relationship was supported but the trust→ justice→ trust relationship was not supported as the relationship between justice at Time 2 and cognitive trust at Time 3 was not statistically significant.

Discussion

We investigated the dynamic interplay between two psychological constructs with noted significance in the context of organizational mergers: employees' perceptions of merger process justice and cognitive trust in the top management team. Prior research involving justice and trust-related constructs has overwhelmingly used cross-sectional designs that preclude conclusions regarding dynamic relations, including the direction of causal effects, between these constructs (Holtz, 2013). In order to improve upon extant research, this study used a cross-lagged longitudinal design spanning a two-year period before and after an organizational merger. Our findings have several important implications for management research and practice.

Theoretical and Practical Implications

This study answers calls for research directed at better understanding temporal relations between trust and justice constructs (e.g., Colquitt & Rodell, 2011; Holtz, 2013). Our results suggest that merger process justice and cognitive trust have positive reciprocal relations over time. In particular, the cross-lagged analyses suggested that planning stage (T1) process justice perceptions were positively related to post-merger (T2) cognitive trust, which in turn influenced subsequent post-merger (T3) process justice perceptions, resulting in positive reciprocal relations. Similarly, planning stage (T1) cognitive trust was positively related to post-merger (T2) process justice perceptions. However, the influence of post-merger (T2) process justice perceptions on subsequent (T3) cognitive trust was not statistically significant. In terms of the relative strength of the observed relations, the

cognitive trust-justice directional relationships were slightly (not significantly) stronger than the justice-cognitive trust relationships across the time points in this study.

These findings highlight the need for research to advance beyond focusing on unidirectional effects between justice and trust constructs because simple bivariate relations paint an incomplete and potentially erroneous picture of relationships between these constructs. For instance, meta-analytic estimates (derived predominantly from cross-sectional research studies) reveal strong correlations (in the .50-70 range) between justice and trust constructs (Colquitt et al., 2013; Rupp et al., 2014). Typically, such findings are viewed through the lens of social exchange theory and interpreted as evidence that perceived justice exerts a robust impact on trust-related cognitions. Consistent with past research, we found robust bivariate correlations between process justice perceptions and cognitive trust when assessed contemporaneously and even when assessed about one and two years apart, respectively (Table 1). However, the results of the cross-lagged longitudinal analyses revealed more modest effects (Figure 2). Failing to account for prior levels of the focal outcomes in this study would have overestimated the impact of justice perceptions on cognitive trust, and vice versa. Thus, our results illustrate the importance of accounting for prior levels of the focal dependent variable when a study is focused on justice-trust relations or trust-justice relations. Further, our findings also underscore prior warnings that it is an oversimplification for researchers to assume that justice is an antecedent, rather than a consequence, of trust-related cognitions (Colquitt & Rodell, 2011; Lewicki et al., 2005).

This warning extends to management practitioners as well. For instance, in light of extant meta-analytic estimates, a practitioner of evidence-based management might conclude that an intervention designed to enhance justice perceptions will dramatically improve employee trust (Holtz, 2015). However, our study suggests that expectations for such robust effects are overly optimistic. For instance, we found that cognitive trust can exert just as

strong (or stronger) effects on perceptions of justice, than the other way around. Thus, an existing belief that management is incompetent and unreliable, for example, will negatively color one's perceptions of managerial actions and reduce the potency of fairness interventions. Moreover, as we mentioned above, prior estimates involving justice-trust relations have largely been based on cross-sectional research. Our results illustrate that failing to control for prior trust-related cognitions when investigating the impact of justice on trust-related cognitions will produce overly inflated results. To be clear, fostering favorable perceptions of justice is unquestionably important. However, in practice, the actual impact of any particular justice intervention on trust-related cognitions is likely to be less robust than is typically conveyed in the extant literature.

It is also interesting to note that, while the cognitive trust-process justice effects were relatively consistent across the duration of the study, the reverse relationship (process justice-cognitive trust) was significant between Time 1 and Time 2 then did not reach conventional levels of significance between Time 2 and Time 3. Supplemental analyses suggested that this result was not due to the temporal stability of the constructs.⁶ Interestingly, uncertainty management theory (van den Bos, 2001) suggests that justice perceptions are especially salient during periods of major change and uncertainty in one's environment. Thus, the attenuated (Time 2-3) effect of process justice may be attributable to the fact that the changes were relatively minor by the second year of the merger and, consequently, process justice information as a signal of top management team's trust-related characteristics (i.e., cognitive trust) was no longer as salient to employees. Similarly, other researchers have noted that process justice perceptions may have stronger effects prior to, or soon after, one knows the outcome of a decision process and that the impact of procedural justice fades after the outcome is known (e.g., Ambrose & Cropanzano, 2003; Maertz, Mosley, Bauer, Posthuma, & Campion, 2004).

This study also adds to our limited understanding of how psychological reactions unfold throughout a merger process (Monin et al., 2013; Nemanich & Keller, 2007). On one hand, our results suggest that failing to adhere to principles of process justice (e.g., timely communication, consistent application of procedures) when planning and implementing significant change events, such as an organizational merger, may do significant damage to management's reputation for trustworthiness. On the other hand, our results suggest that failing to cultivate a reputation for being competent and reliable, can negatively bias employee perceptions of justice as a change event unfolds. Thus, it is important that organizational leaders work to instill favorable impressions of their competence and perceptions of justice throughout the duration of an important change event. These issues are particularly important as justice and trust constructs have been linked to a variety of outcomes critical to the success of change initiatives including greater decision acceptance, increased performance, less deviance, and reduced turnover intentions (e.g., Colquitt et al., 2013; Dirks & Ferrin, 2002; Melkonian, Monin, & Noorderhaven, 2011).

Limitations

Of course, our study is not without limitations. For instance, our data were collected using a self-report survey. As such, common method variance is a potential source of measurement error in this study (e.g., Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). That being said, we used a longitudinal design to minimize the risk of common method variance (Ostroff, Kinicki, & Clark, 2002; Podsakoff et al., 2003) and the focal constructs of our study (trust and justice perceptions) necessitate the use of self-report measures.

Furthermore, in our longitudinal study design we were restricted to three measurement time points with one-year time lags. Shorter measurement time lags could produce stronger relations, be less vulnerable to interim effects, and capture potential fluctuations in the relations between trust-related cognitions and justice perceptions (e.g.,

Dormann & van de Ven, 2014; Fortin et al., 2016; Little, 2013). Thus, future research with different longitudinal designs, such as more frequent measurement time points and longer time spans, are needed to further elucidate the relations between trust and justice.

Additionally, two contextual issues might have impacted the generalization of our results. First, as is typical during mergers and acquisitions, there were personnel changes in the top management team during our study (see Measures section). Thus, the focal entity associated with our cognitive trust measurement (i.e., the top management team) experienced changes across different time points. However, the established over time measurement invariance (Table 3) suggest that employees did not view the top management team as a fundamentally different entity at different time points. Furthermore, this conclusion is supported by the relative strong relations within the cognitive trust construct across time (Table 1 & Figure 2). Second, the top management team in an organization is typically responsible for deciding whether a major organizational change should be executed or not. However, in the current study, the top management team was in charge of the planning and implementation of the merger but they were not actually responsible for the original merger decision made by politicians in a municipal council. In a context where the top management is also responsible for the initial merger decision, it is quite likely that employees' assessments on the soundness of the original merger decision shape their subsequent evaluations of top management team's competence and reliability (i.e., cognitive trust) and justice perceptions of the process. This contextual feature is unlikely to affect our main results, but it should be kept in mind when considering the generalization of our study's results over different organizational change contexts.

Suggestions for Future Research

First, future studies could investigate longitudinal relations between different trust-related cognitions and justice perceptions. For example, in this study we chose not to measure

affective trust as it is “grounded in reciprocated interpersonal care and concern” (McAllister, 1995, p. 25). Therefore, the referent of affective trust measurement should be an entity whom employees have direct contact with and with whom they are able to create close emotional and interpersonal relationships, such as an immediate supervisor, instead of the top management team of a large organization. Accordingly, future studies that incorporate alternative operationalizations of trust-related characteristics (e.g., integrity and benevolence evaluations), affective trust, and the psychological state of trust, may help to further clarify relations between trust-related cognitions and justice constructs.

Second, we tested aspects of the trust primacy model (Holtz, 2013), yet several key propositions remain untested. For instance, this model suggests that trustworthiness evaluations held with greater certainty should exert stronger effects on subsequent justice perceptions and may be more resistant to change over time. Long-tenured employees may often feel more certain about their evaluations concerning an entity’s trust-related characteristics, but we suspect that certainty may also depend on the focus and type of these evaluations and the degree that an employee has direct first-hand observations. In our sample, and in most large organizations, evaluations of top management team’s characteristics were likely inferred through secondhand information (e.g., word of mouth, formal policy announcements, etc.) as direct contact with the top management team is quite rare for most employees. Compared to characteristic evaluations of an employees’ immediate supervisor, evaluations of the top management team are probably held with less certainty, and thus may be less impactful and less resistant to change over time. We recommend that research incorporating measures of both trust-related evaluation certainty and justice perception certainty may yield important insights into the dynamic relations between trust-related cognitions and justice constructs.

Conclusions

Trust-related cognitions and justice constructs have been widely studied in the management literature, yet important questions regarding the reciprocal and causal relations between these variables remain unanswered (e.g., Colquitt & Rodell, 2011; Holtz, 2013; Lewicki et al., 2005). In this study, we found evidence for reciprocal relationships between justice perceptions of a merger process and cognitive trust in the top management over time. Consistent with conventional wisdom, justice emerged as a significant antecedent of cognitive trust. On the other hand, cognitive trust was significantly associated with employees' subsequent perceptions of justice. In fact, the perspective that cognitive trust is an antecedent of process justice perceptions received somewhat stronger support than the view that cognitive trust represents an outcome of perceived justice. Therefore, the relations between cognitive trust and justice perceptions are more dynamic than has traditionally been conveyed in the management literature.

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Footnotes

¹ Distributive justice was not included in the study because employees did not have requisite information regarding the eventual outcomes of the merger process before the merger came into effect. Thus, as we focused on the time-lagged effects of fairness perceptions throughout a merger, at three time points including the planning stage (Time 1), investigation of distributive justice perceptions would have been unsuitable for this purpose.

² To investigate whether subject attrition led to non-random sampling, we tested whether the probability of remaining in the sample at the later time points could be predicted by the variables from prior time points following the guidelines presented by Goodman and Blum (1996). The results indicated the possible non-random sampling did not affect the main results of this study.

³ In the choice of measurement for cognitive trust in the top management team, we preferred the measurement by Mayer and Davis (1999) over the measurement developed by McAllister (1995). This was due to the latter being designed and worded to measure trust between managers (peers), and the former was designed to measure employees' assessment of top management. Thus, we found the measurement by Mayer and Davis to be more suitable for the context of our study. As the referent of the measurement, we chose to use the head of the organization and heads of divisions as they were the people who formed the top management team where the major decisions concerning the planning and implementation of the merger were made. Before the merger, the top management team for the two merging organizations consisted 8 and 6 persons respectively. The top management team of the merged organization consisted 7 persons.

⁴ We also tested an alternative confirmatory factor analysis model that loaded interactional (i.e., interpersonal and informational) justice items, procedural justice items, and cognitive trust items on to three separate factors. The results indicated that the three-factor

model provided a slightly better fit to the data, $\chi^2(339) = 450.10$, $p < .001$, CFA = .99, TLI = .99, RMSEA = .02, SRMR = .02, relative to the two-factor model. Notwithstanding the potential improvement in fit statistics, we elected to focus on a single process justice factor because a) there is currently no theoretical reason to expect differential relations between cognitive trust and procedural and interactional justice facets (Holtz, 2013), and b) empirical guidelines suggest that it is prudent to combine justice facets when facet correlations exceed .70 (Colquitt & Shaw, 2005). In the current study, if we create separate factors for procedural and interactional justice, the within-time correlation between these factors range from .93 to .95 at different the time points. Additionally, we conducted all our analyses with separating the procedural and interactional justice facets and the results of our hypothesis tests are nearly identical whether, or not, the justice constructs are aggregated (the results can be obtained from the first author).

⁵ As the results in Figure 2 indicated difference in over time cross-lagged effects between process justice and cognitive trust, we conducted further analyses to test whether these differences were statistically significant. Model comparison results indicated that the path coefficients over the first time interval, process justice (T1) to cognitive trust (T2) and cognitive trust (T1) to process justice (T2), were not statistically significantly different from each other, $\Delta\chi^2(1) = 0.80$, $p = .778$. The difference between the cross-lagged path estimates over the second time interval (T2→T3) was marginally statistically significant, $\Delta\chi^2(1) = 3.23$, $p = .072$. Taken together with the results in Table 4, which indicated slightly better model fit for cognitive trust to process justice (Model 3) than for process justice to cognitive trust (Model 2), we conclude that our results indicated slightly, however not statistically significantly, stronger support for Hypothesis 2 of cognitive trust being positively related to subsequent process justice than for Hypothesis 1 of the opposite relation.

⁶ In longitudinal cross-lagged models the more stable variable (i.e., a variable with less change over time) is more likely to predict the less stable variable due to a larger residual of the less stable variable (e.g., Farrell, 1994; Little, 2013). To examine whether our findings were affected by the difference in the over time stability of merger process justice or cognitive trust factors, we compared the autoregressive paths among both variables. The results show that when we set the autoregressive paths equal between consequent points of time among process justice and cognitive trust, the model was not statically significantly different in comparison to a model where these paths were freely estimated, $\Delta\chi^2(2) = 3.25, p = .197$. This result indicates that the stabilities of the process justice and cognitive trust did not differ statistically significantly. Thus, there was no indication that the main results of our study would have been affected by the differing amounts of over time stability between the focal constructs.

⁷ When referring to the merger process in the process justice and outcome favorability measurements' instructions, we used the wording of "founding" of the new organization. This decision was based upon our discussions with the organizations' representatives when planning and piloting the questionnaire. The representatives suggested to use wording which is common in the organization(s) and which would be perceived as neutral among the participants to minimize negative reactions, feelings or misgivings towards the survey.

Table 1

Means, Standard Deviations, and Zero-Order Correlations

Variable	Scale	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1. Cognitive trust (T1)	1–5	3.00	0.91	(.93)										
2. Cognitive trust (T2)	1–5	2.80	0.84	.68***	(.91)									
3. Cognitive trust (T3)	1–5	2.58	0.88	.57***	.73***	(.92)								
4. Process justice (T1)	1–5	2.30	0.83	.47***	.48***	.41***	(.87)							
5. Process justice (T2)	1–5	2.33	0.79	.51***	.69***	.56***	.70***	(.87)						
6. Process justice (T3)	1–5	2.47	0.80	.50***	.63***	.75***	.55***	.71***	(.88)					
7. Outcome favorability (T2)	1–7	3.42	1.52	.26***	.32***	.23***	.28***	.43***	.32***	—				
8. Outcome favorability (T3)	1–7	3.53	1.41	.27***	.32***	.41***	.24***	.33***	.47***	.32***	—			
9. Pre-merger organization ^a	0/1	0.43	0.50	.28***	.19***	.09*	.31***	.26***	.12**	.03	.00	—		
10. Position in the organization ^b	0/1	0.24	0.43	.21***	.14**	.13**	.03	.02	.09*	.06	.06	-.04	—	
11. Age	20–69	47.5	19.4	.14***	.08	.01	.04	-.01	.04	.01	-.03	.01	.16***	—

Note. *N* = 622. T1 = Time 1; T2 = Time 2; T3 = Time 3. Cognitive trust = Cognitive trust in the top management. Process justice = Process justice of the merger. Alpha coefficients are reported in parentheses on the diagonal. ^aPre-merger organization coded as 0 = organization A, 1 = organization B. ^bPosition in the organization coded as 0 = employee, 1 = supervisor or middle management. **p* < .05. ***p* < .01. ****p* < .001.

Table 2

Confirmatory Factor Analysis of Measurement Model

Item	Item loadings (T1/T2/T3)
<i>Process justice of the merger</i>	
1. The rules of procedures have been applied consistently across people and situations.	.68 / .61 / .69
2. All parties that are affected by the decisions have had opportunities to express their concerns.	.72 / .72 / .74
3. The decisions have been based on accurate information.	.82 / .80 / .83
4. Feedback and information have been provided regarding the impacts of decisions.	.69 / .71 / .67
5. Employees have been treated with dignity during the founding process.	.81 / .81 / .80
6. Honest explanations have been given for the decisions made concerning the founding of (the new organization).	.72 / .72 / .74
<i>Cognitive trust in the top management</i>	
1. Top management is very capable of performing its job.	.85 / .86 / .86
2. Top management is known to be successful at the things it tries to do.	.81 / .81 / .81
3. I feel very confident about top management's skills.	.93 / .90 / .91
4. Top management is well qualified.	.92 / .84 / .87

Note. $N = 622$. T1 = Time 1; T2 = Time 2; T3 = Time 3. Completely standardized maximum likelihood robust parameter estimates. All estimates are $p < .001$.

Table 3

Tests of Measurement Invariance Over Time

Model	χ^2	<i>df</i>	CFI	TLI	RMSEA	SRMR	$\Delta\chi^2$	<i>p</i>
Configural ^a	535.70***	360	.98	.98	.03	.03		
Weak invariance ^b	560.13***	376	.98	.98	.03	.04	24.52	.079
Partial strong invariance ^c	573.87***	388	.98	.98	.03	.04	13.50	.334

Note. $N = 622$. CFI = comparative fit index, TLI= Tucker-Lewis fit index, RMSEA= Root mean square error of approximation, SRMR= standardized root mean square residual. Model comparisons computed with the Satorra-Bentler scaled chi-square difference test. ^aA model without constraints. ^bA model with items' factor loadings set equal over time. ^cA model with items' factor loadings and intercepts set equal over time.

*** $p < .001$

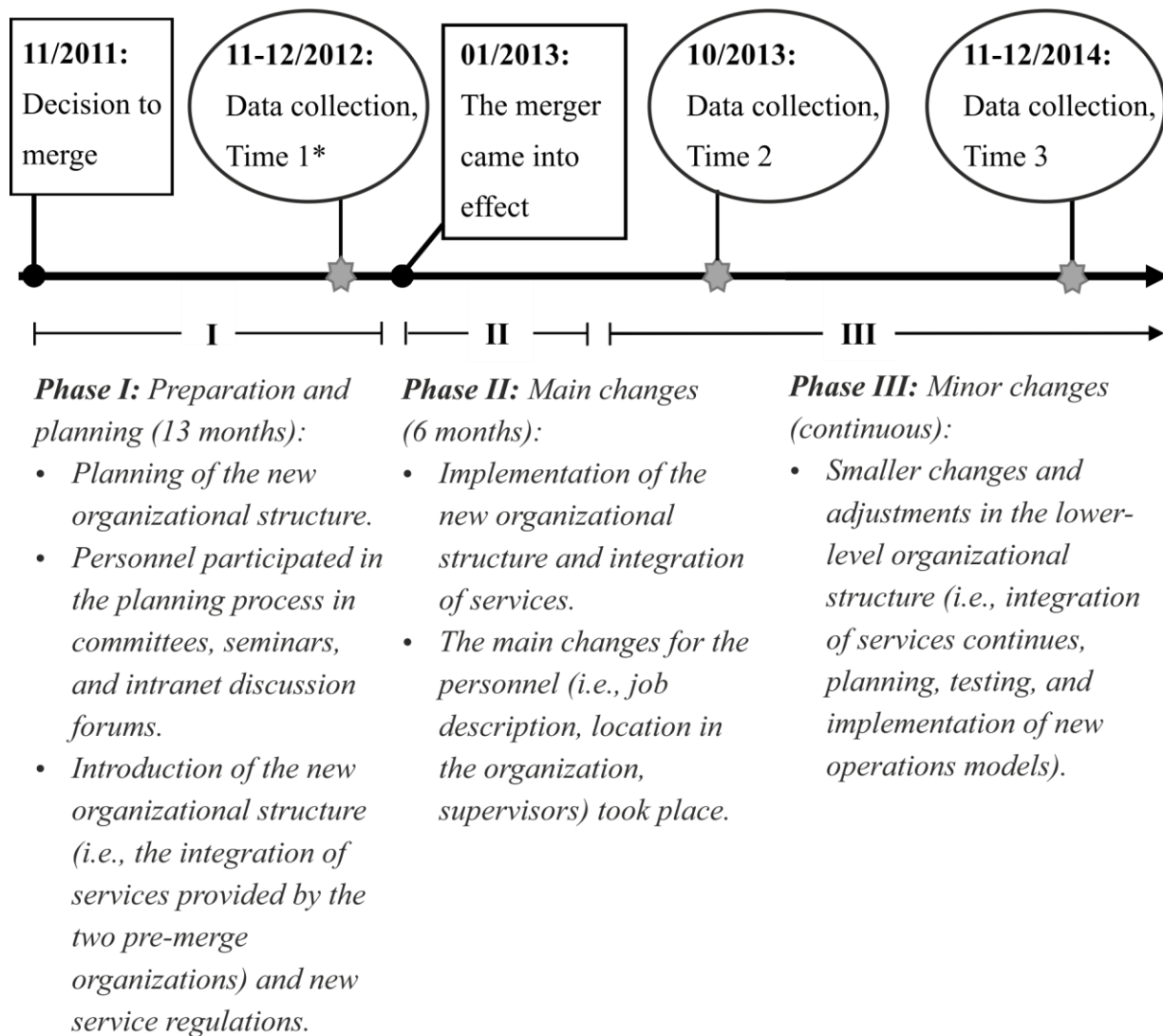
Table 4

Fit Statistics for Nested Over Time Models

Model	χ^2	<i>df</i>	CFI	TLI	RMSEA	SRMR	Comparison	$\Delta\chi^2$	Preference
M1. Autoregressive paths only ^a	944.99***	531	.97	.96	.04	.11			
M2. Process Justice → Cognitive trust ^b	902.77***	529	.97	.97	.03	.09	M2–M1	43.55***	M2
M3. Cognitive trust → Process justice ^c	877.64***	529	.97	.97	.03	.09	M3–M1	60.31***	M3
M4. Reciprocal (cross-lagged) ^d	852.43***	527	.97	.97	.03	.08	M4–M1	86.64***	M4
							M4–M2	43.14***	M4
							M4–M3	24.69***	M4

Note. $N = 622$. Process justice = Process justice of the merger. Cognitive trust = Cognitive trust in top management. CFI = comparative fit index, TLI = Tucker-Lewis fit index, RMSEA = Root mean square error of approximation, SRMR = standardized root mean square residual. Model comparisons computed with the Satorra-Bentler scaled chi-square difference test. ^aEstimated autoregressive paths between process justice variables and autoregressive paths between cognitive trust variables across the three time points. ^bEstimated autoregressive paths and paths between justice at Time 1 and cognitive trust at Time 2 and between justice at Time 2 and cognitive trust at Time 3. ^cEstimated autoregressive paths and paths between cognitive trust at Time 1 and justice at Time 2 and between cognitive trust at Time 2 and justice at Time 3. ^dCombined all the paths estimated in the previous models.

*** $p < .001$



* At Time 1, data collection ended at 12th of December, 2012.

Figure 1. Timeline of the merger process.

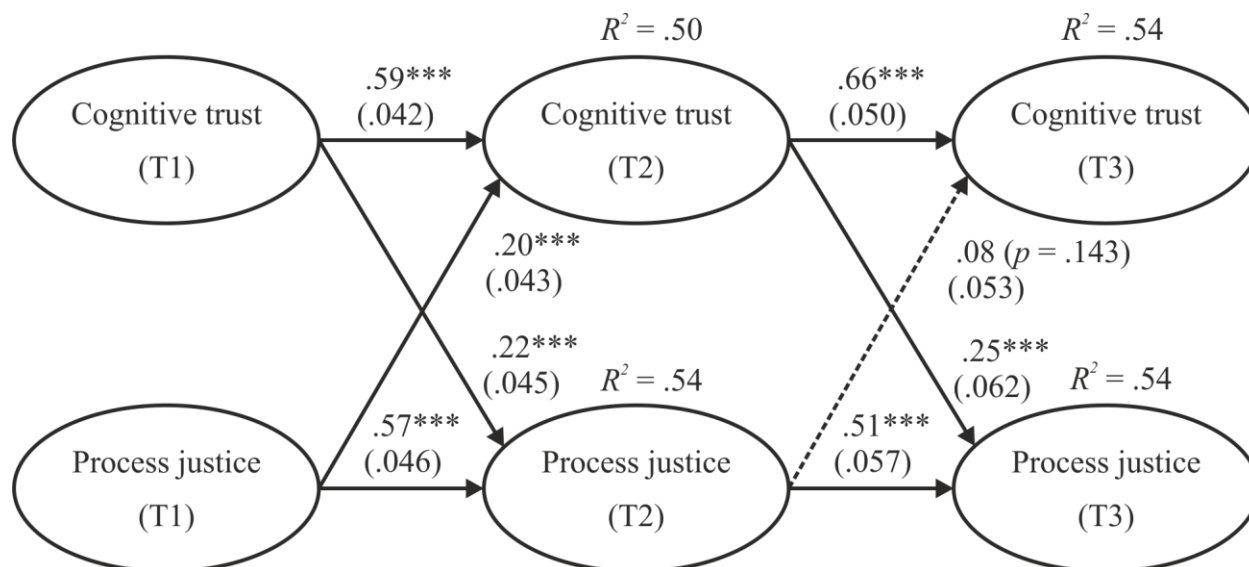


Figure 2. Cross-lagged structural equation modeling results testing the reciprocal over time relationships between cognitive trust in the top management and perceptions of merger process justice. T1 = Time 1; T2 = Time 2; T3 = Time 3. Completely standardized maximum likelihood robust parameter estimates are reported. Standard deviations are presented in parentheses. Excluded from the figure for clarity are paths from covariates (pre-merger organization, position in the organization, age, outcome favorability), latent factors' items, and within-time covariances among latent variables.

*** $p < .001$

Appendix

Construct items and instructions

Process justice. Items adapted from Mansour-Cole and Scott (1998) and Moorman (1991).

Participants were given the following instructions preceding the set of items: “The following statements address your views on the procedures and decision-making in general [during the past year] related to the foundation process of (the new organization).”⁷ The temporal reference in brackets was included at T2 and T3 time points. The items were assessed on a 5-point scale (1 = completely disagree; 5 = completely agree).

1. The rules of procedures have been applied consistently across people and situations.
2. All parties that are affected by the decisions have had opportunities to express their concerns.
3. The decisions have been based on accurate information.
4. Feedback and information have been provided regarding the impacts of decisions.
5. Employees have been treated with dignity during the founding process.
6. Honest explanations have been given for the decisions made concerning the founding of (the new organization).

Cognitive trust in the top management. Adapted from Mayer and Davis (1999).

Participants were given the following instructions preceding the set of items: “The following statements concern the top management of (the organization). By top management we refer to the head of (the organization) and heads of divisions”. The items were assessed on a 5-point scale (1 = completely disagree; 5 = completely agree).

1. Top management is very capable of performing its job.
2. Top management is known to be successful at the things it tries to do.

3. I feel very confident about top management's skills.
4. Top management is well qualified.

Outcome favorability. The following item was used to assess outcome favorability: "When you think about all the changes that the founding of (the new organization) ⁷ has brought about, how would you characterize the changes which have taken place thus far *in your own work*? Choose the alternative that best describes your opinion. The changes have been 1 = mostly negative, ..., 7 = mostly positive."