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SEEING EYE TO EYE: CAN LEADERSHIP TRAINING ALIGN PERCEPTIONS OF LEADERSHIP?

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ABSTRACT

There is a huge gap between how employees see leaders' behavior and how leaders see themselves regardless of sector and functional area. Because this gap can be a serious problem in managing organizations, scholars have investigated how the gap can be reduced. This article focuses on leadership training and tests whether and under what conditions it narrows the gap. Using quantitative and qualitative data from a randomized field experiment with several hundred Danish leaders from public and private organizations, we find that a yearlong leadership training course decreases the differences between leader and employee perceptions of transformational and transactional leadership behaviors in public sector organizations but not in private organizations. The findings imply that leadership training can be one way for public organizations to align perceptions of leadership.

Keywords: Leadership Training, Self-Other Assessment, Experiment, Transformational and Transactional Leadership

INTRODUCTION

Leadership is only effective when employees understand their leaders; followers need to accurately perceive what the leader is seeking (Atwater and Yammarino 1997; Fleenor et al. 2010; Jacobsen and Andersen 2015). Leaders and employees, however, may have different perceptions of what leaders are saying and doing for several reasons: leaders may communicate poorly, take actions that are not congruent with their communications, or behave ambiguously. Employees may not receive their leaders' messages, or they may misinterpret them because they are equivocal and ambiguous (Daft and Lengel 1986). These factors may have negative effects on alignment between leaders and employees and affect organizational commitment and job satisfaction among employees (cf. Atwater et al. 1998; Černe et al. 2014; Jacobsen and Staniok 2018). Leaders who are aligned with employees are better able to create good work environments, promote group cohesion among employees, and ultimately improve performance (Felfe and Heinitz 2010).

Low self-awareness on the part of leaders is a major cause of discord between leader and employee perceptions and thus low self-other agreement (SOA). Leadership training that includes multi-source feedback assessment tools can be a key to achieving SOA accuracy (Rosti and Shipper 1998; Shipper and Dillard 2000; Hassan and Rohrbaugh 2009). Through (effective) training, leaders learn to receive feedback on their leadership behaviors, get a better sense of employees' perceptions, learn self-monitoring and increase self-awareness (e.g., Ashford and Tsui 1991; Kilduff and Day 1994). We argue that leadership training with extensive feedback can be expected to improve leaders' self-awareness and leadership effectiveness, which in turn can narrow the SOA gap.

While studying the effect of leadership training (on reducing the SOA gap) is important for any organization, it is critical in public organizations. They have more stakeholders than private organizations and, therefore, often vaguer, broader, and more

diverse organizational goals (Boyne 2002; also see Dahl and Lindblom 1953; Wilson 1989). These factors may make it more difficult to close the SOA gap in public organizations, which is an important objective. Public management scholars, however, have paid limited attention to the effect of leadership training on SOA accuracy, and the topic is mainly discussed in the generic leadership literature and/or business management studies (e.g., Atwater and Yammarino 1997; Braddy et al. 2014; for overviews see Day et al. 2014; Fleenor et al. 2010; Lee and Carpenter 2018). This can be problematic since we cannot necessarily generalize findings from private to public organizations. In this article, we make one of the first attempts to test whether and how leadership training can help achieve SOA accuracy in both public and private organizations.

To investigate whether leadership training may have such an effect, and whether the effect differs between private and public organizations and between different leadership strategies, we use data from a randomized field experiment. We offered leadership training to randomly assigned Danish leaders in public and private organizations over a year: The leaders and their employees were surveyed and interviewed before and after leadership training. We included only direct leaders of employees in organizations where characteristics of job tasks are similar between private and public organizations (schools, daycare, banks and tax organizations). This enables us to observe changes in the gap between leaders' and employees' assessments of leadership and, thereby, assess whether leadership training can narrow this gap in public and private organizations with similar functions.

In conducting the experiment, we focused on transactional and transformational leadership, well-established and frequently used concepts (e.g., Park and Rainey 2008; Trottier, Van Wart, and Wang 2008; Jacobsen and Andersen 2015; 2017). Transformational leaders aim to motivate employees and transcend their own interests in favor of organizational goals by developing a vision for their organization, sharing it with the

employees, and sustaining attention to the vision in the short and long run (Jacobsen and Andersen 2015), while transactional leaders focus on their employees' self-interest by offering contingent rewards (Moynihan, Pandey, and Wright 2012). We also distinguish between verbal and pecuniary rewards. It is worth noting that the two types of leadership behavior constitute relevant strategies in both private and public organizations¹ (Jensen et al. 2019), and they can be combined.

The article proceeds as follows. First, we discuss the relevant types of leadership behavior and why self-rating and other-rating of leadership tend to differ. Second, we discuss *how* leadership training can align these perceptions for different types of leadership behavior and in different types of organizations. Next, we outline our experimental design and analytical approaches and present our key findings. Lastly, we discuss the implications of this study for scholarship and practice.

UNDERSTANDING WHY SELF- AND OTHER-RATINGS TEND TO DIFFER

The level of congruence between leaders' self-ratings and employees' ratings of transformational and transactional leadership is the focal point in this article. An important point in understanding the determinants of self-other agreement between leaders and employees is that leaders whose self-ratings and employee ratings disagree tend to be less self-aware than leaders whose self-ratings and employee ratings are congruent (Fleenor et al. 2010, 1006). Like many other individuals (e.g., Brown 1986; Brown 2012), leaders tend to be overly positive when judging their own character and competence (Carter and Dunning 2008; Bass and Yammarino 1991); a phenomenon linked to self-enhancement bias. Self-assessments of desirable leadership behaviors such as transformational leadership are especially likely to exceed employees' assessments (Bass and Yammarino 1991). In a sample of 79 Danish high school principals and their 1,621 teachers, Jacobsen and Andersen (2015,

834) found that leaders on average rated their own transformational leadership behaviors to be 80.1 on a 0-100 scale, while their employees on average rated them at 50.4.²

The SOA gap can also come from underestimated self-ratings. However, Hassan and Rohrbaugh (2009, 425) show that leaders who underestimate their own performance are more effective than leaders who inflate their self-ratings. Leadership training with multi-source feedback may thus improve performance through a better understanding of rating differences (Hassan and Rohrbaugh 2009, 425). Previous studies suggest that individual characteristics (e.g., gender, education, race, self-esteem, depression, job experience, etc.) and organizational context (e.g., gender proportion and individualism in organizations) play a key role in explaining the SOA gap (see Fleenor et al. 2010). Although full alignment between self- and other-ratings may not be possible, we argue that leadership training can reduce the SOA gap. We illustrate the relationship between leadership training and SOA accuracy further in the following section.

HOW CAN LEADERSHIP TRAINING AFFECT SOA ACCURACY?

To assess the theoretical potential for leadership training to reduce the gap between leaders' self-assessments of their leadership and employees' perceptions of that leadership (that is, enhancing SOA accuracy), this section first outlines three mechanisms explaining how leadership training can align perceptions of leadership through leaders' self-assessments and/or employees' other-assessments. Second, we nuance the argument to suggest that the alignment effect of leadership training is heterogeneous (1) across leadership behaviors and (2) between public and private organizations.

General Leadership Training Effects on SOA Accuracy

We introduce three mechanisms through which leadership training can align perceptions of leadership. The first two are tied to leaders' self-assessments, as training can increase leaders' meta-knowledge of leadership and their ability to accurately self-assess their leadership behavior. According to Kruger and Dunning, accurate self-assessments require meta-cognitive skills, that is, "the ability to know how well one is performing, when one is likely to be accurate in judgement, and when one is likely to be in error" (1999, 1121). In other words, to make accurate self-assessments, leaders must be able to collect, process and remember information about their own leadership behaviors, and assess correctly how these behaviors are perceived by the employees. Existing studies find that leadership training programs can foster such skills if they contain multi-source feedback because it increases self-awareness (Rosti and Shipper, 1998; Shipper and Dillard, 2000; Hassan and Rohrbaugh 2009). Empirically, positive associations between feedback and changes in self-assessment have been identified in a number of studies (Korsgaard 1996; Mayo et al. 2012). In a longitudinal study of MBA students, Mayo et al. (2012) find that self-ratings significantly decreased after participants received feedback as a part of a leadership training program. Caputo and Dunning (2005) also show that self-assessments become more accurate once people receive feedback about their errors of omission. In addition, Bailey and Fletcher's (2002) study of 104 leaders in the UK finds that feedback plays a significant role in increasing the agreement between self- and other-assessments of leader competence over a two-year period.

The content of the leadership training is important. Dierendonck et al. (2007) argue that feedback alone may not be sufficient to change the leaders' own perception. In a randomized experiment, they find that leadership training is only effective not when training provides feedback on leadership behaviors but when it offers feedback combined with a workshop (relative to the control group). Similarly, we use the concept "leadership training

program”, referring to a structured learning program that includes both feedback and an information push similar to the one in Dierendonck and his colleagues’ workshop. In these types of leadership training programs, participants receive information about leadership that they already know, information that complements their prior knowledge, *and/or* information that is completely new to them. Importantly, an integral part of our understanding of leadership training is that leadership training programs should encourage leaders to reflect on their own leadership behaviors in relation to information provided, and to exercise newly learned leadership skills.

Kruger and Dunning (1999) claim that leadership training can improve leaders’ ability to evaluate themselves accurately. In their study, participants who finished a short training session performed significantly better than others in estimating their own performance with comparison to the actual test score. This suggests that increased self-awareness of strengths and weaknesses makes self-assessment more accurate. Similarly, highlighting errors of omission or helping leaders to anticipate how employees would perceive their leadership behaviors can thus encourage them to make more accurate self-assessments. In this respect, leadership training programs represent “interventions that bring people the information they lack, so that they can make more accurate self-judgements” (Carter and Dunning 2008, 358). On this basis, we argue that leadership training programs through competence development and feedback can help correct erroneous self-assessments of leadership by providing leaders information that can increase their meta-cognitive skills to collect, process, and remember knowledge about their own leadership behaviors. The reflection process should have a positive effect on reducing erroneous self-assessments.

Leadership training can also align perceptions of leadership through other-assessments by their followers. To illustrate, employees can reflect changes in leadership behaviors in their assessments. Leadership training programs are typically designed

specifically to build leaders' capacity to practice specific types of leadership behaviors. The results from Seidle, Fernandez, and Perry's study (2016) indicate that leadership training can trigger real changes in leadership behaviors. For example, participants in a leadership training program on transactional leadership are afterwards expected to use more contingent rewards than non-participants. They are also expected to be more transparent and self-aware about their use of the relevant behavior. Leadership training can both correct perceptual biases among leaders (and employees) and modify leaders' behavior towards more consistency and clarity in interactions with subordinates. When employees observe this, SOA accuracy increases. As leadership training can change leaders' self-assessments, employees' other-assessments, or both, we hypothesize that:

***H1** Leadership training will align leaders' self-assessment and employees' other-assessment of leadership behavior, which will reduce the SOA gap.*

Heterogeneous Training Effects on SOA Accuracy for Different Leadership Behaviors?

The effects of leadership training are not necessarily similar for all types of leadership behaviors. While the plausible contextual variables connected to the training principles are held constant in this study (e.g., content, quality and length combined with the type of feedback mechanism, see Holten, Bøllingtoft, and Wilms (2015) for an overview and appendix D), it is plausible that leadership training programs (e.g. transformational vs. transformational leadership training) may have different effects on SOA accuracy. Carter and Dunning (2008) note that self-assessments are less accurate when individuals rate themselves on ambiguous tasks or traits. Different leadership behaviors can thus be more or less well-defined. As noted, transactional leadership centers on the use of contingent rewards based on effort and/or results (Antonakis, Avolio, and Sivasubramaniam 2003; Bass 1985). The use of

such rewards may represent easily retrievable information for the leaders, while transformational leadership might be more elusive: Have I formulated a clear vision and communicated it to my employees using the right media? How do I sustain my employees' attention to the vision? These and more questions form the basis when leaders assess their own transformational leadership behaviors, while the use of especially pecuniary rewards is more tangible. In other words, the transparency of the yardsticks that the leader uses to judge different types of leadership behavior may differ significantly. This is important because "when excellence along a trait is ambiguous or can be defined in many ways, people tend to think of themselves as rather good to an unrealistic degree. When success at a trait is more clearly defined, people provide more realistic judgments" (Carter and Dunning 2008, 351).

As such, we expect that leadership training can not only stimulate leaders' self-awareness by fostering meta-cognitive skills but also provide more well-defined yardsticks for ambiguous types of leadership behaviors. For transformational leadership, this could be specific knowledge about developing, sharing and sustaining a vision. Hence, we expect that the relative convergence effect of leadership training programs may be heterogeneous across leadership behaviors, especially if they have different levels of ambiguity. We therefore hypothesize that:

***H2** The effectiveness of leadership training in reducing the self-other rating gap will vary across types of leadership training.*

Heterogeneous Training Effects on SOA Accuracy for Private and Public Organizations?

The effect of leadership training on SOA accuracy might also differ between public and private organizations. Goal ambiguity is one central feature of an organizational context

(Wilson 1989; Dixit 2002; Chun and Rainey 2005; Rainey 2014). In public organizations, where more stakeholders are involved in decision-making or goal-setting processes than in private organizations (e.g., political principals and more diverse stakeholders from the public), goals tend to be more vague, broad and diverse (Boyne 2002; also see Dahl and Lindblom 1953; Wilson 1989). If public organizations have more (and vaguer) goals – some perhaps conflicting – it can be more difficult for public leaders to formulate clear objectives to guide employee behavior. The challenges and opportunities of private and public leaders may thus differ, and this affects the conditions for obtaining SOA accuracy. Given the emphasis on vision in transformational leadership, for example, transformational leadership training may be particularly effective in public organizations because they have strong service- and community-oriented missions (Wright, Moynihan, and Pandey 2012, 207). We argue that it is easier to learn to practice transformational leadership in public organizations because the visions (on average) contain a stronger inherent elements of social value and benefitting society at large.

Another relevant factor is the availability of and access to resources, such as money for pecuniary rewards, in public and private organizations (for more details, see An et al. 2019). Since public organizations have fewer material resources, transactional training might be less effective in reducing the gap in perceived used of pecuniary rewards. In general, we expect that sectoral differences between public and private organizations moderate the effect of leadership training on SOA accuracy.

***H3** The effectiveness of leadership training in reducing the self-other rating gap will vary between private and public sector organizations.*

Finally, it is relevant to analyze relative convergence effects of leadership training because any absolute reduction in the self-other agreement will be easier (or harder) to achieve depending on the absolute size of initial disagreement. Organizational behavior literature suggests that feedback is more useful when recipients have low self-awareness of their behaviors (see Anseel et al. 2015; Fletcher and Baldry 2000; Herold, Parsons, Rensvold 1996). For instance, public managers may have better access to leadership training because it is state-subsidized (e.g. Danish Government 2007). Accordingly, they may be able to improve their leadership skills less due to a ceiling effect (see An et al. 2019); it is easier to improve if you start at a low level. All in all, it is important to control for initial levels of SOA, especially when examining the effects of leadership training between public and private organizations. The next three sections explain how we do this in an experiment with both quantitative and qualitative data.

THE EXPERIMENT

To test our hypotheses, we induce changes in leadership behavior in a randomized experimental study and observe subsequent changes in SOA. In our experimental settings, we provide leadership training and feedback to leaders so that they can assess information and use their skills properly. The experimental setting also allows us to investigate the causal link between leadership training and the perception gap of leadership behaviors between employees and leaders. In spring 2014, a total of 672 Danish public and private leaders agreed to participate in our study and were randomly assigned to three treatment groups – transformational, transactional, and combined (transformational and transactional) leadership programs – and a control group. Leaders in the control group received no training, but our interaction with the leaders and their employees (interviews, surveys distribution etc.) was the same as we did with the training groups.

A total of 504 leaders remained in the project until the post-treatment survey in August 2015 (attrition was mainly due to job changes). The only identified difference between organizations that dropped out and stayed in the experiment is a slightly lower level of initial transformational leadership among the remaining organizations in the transformational leadership training group. Leaders with an initial high level of transformational leadership may have experienced that they benefitted less from the training and therefore were slightly more likely to drop out. Since the analyses control for the initial level of the leadership strategies, this should not be a concern.

This study includes leaders in public and private organizations from three functional areas: (1) primary and lower secondary schools, (2) daycare centers and (3) finance organizations, i.e., tax collection offices and banks.⁴ Within the three functional areas, the organizations have similar or identical functions and missions, which enhances comparability across sectors. Although banks and tax offices offer somewhat different services, they are both financial services (rather than social welfare services) and employ many of the same types of occupations. All the organizations are highly regulated and subject to substantial social control. We use ownership to categorize the organizations as public or private.

The training courses were equivalent to an executive master-level course in Denmark (the instructors were randomly assigned to classes of 20 leaders and remained with the class during the training sessions). The treatment groups received four seven-hour sessions covering a 600-page curriculum with leadership activities and discussions, as well as assigned course work between the sessions over a year. The participating leaders received feedback from the teachers and the other participants during and between training sessions. More specifically, each participant developed an action plan and received feedback after each of the four training sessions, first from a network group consisting of other participating leaders and then from the instructor. The training is described in detail in appendix D; only

the substantive content (transformational, transactional and combined) varied between three different interventions.

A total of 18 leaders and 18 of their employees were interviewed before the training, and interviews with the same individuals were conducted after the training (except three persons who were unavailable, see the qualitative data section below). All employees who reported directly to a participating leader received surveys before and after the leadership training programs. In our quantitative analysis (see the relevant section below), we only include employees who responded to the survey before and after the treatment to avoid potential individual characteristics that might influence their assessment of the leadership behaviors.⁵ All 8,330 employees from the participating organizations received the pre- and post-treatment surveys (asking them to evaluate their leaders' leadership behaviors), and 3,002 completed both. We also asked participating leaders to evaluate their own leadership behaviors before and after the training programs. We did not allow the leaders to see the employee ratings until after their own second survey. We gave the same amount of coaching regardless of ratings as differences in training due to pre-training ratings would have prohibited us from making causal conclusions based on the experiment (given that the training content could be endogenous). Below, we first describe our quantitative data (pre- and post-training surveys of leaders and employees), and the qualitative data (pre- and post-training semi-structured interviews with leaders and employees).

QUANTITATIVE DATA

To test the hypotheses quantitatively, we measure the difference between each leader and the corresponding employees before and after training for the relevant three types of leadership behaviors: transformational leadership and the two indicators of transactional leadership—use of verbal rewards and pecuniary rewards. Our measures rely heavily on existing scales

presented in Jensen et al. (2019), and full item wordings and measurement statistics are presented in appendix A.

To test whether leadership training makes leader and employee assessments of leadership converge, we calculate a distance measure of leaders' self-rated behavior compared to employees' assessments using the following two steps. First, we created composite scores for each of the three measures of leadership behaviors by simple addition of the items belonging to each scale (cf. Table A1). Subsequently, we rescaled each leadership measure to range from 0 to 100. In the second step, we subtracted employee-rated leadership scores from leaders' self-assessed leadership scores and took the absolute values of the differences.

Since the same organizations and individuals are included before and after the leadership training, it is less relevant to include variables measuring individual characteristics. However, we do include information about attendance during leadership training (reported by the instructors). Balance test results confirm that our randomization (assigning leadership to different leadership training groups) worked across training groups and by sector (results not shown but available upon request). For the functional areas (e.g. school, daycare centers, and finance), not all leadership behaviors are balanced, and we therefore control for the functional areas in addition to sector across models.

Since our hypotheses concern *relative* convergence effects, we use a natural log transformation of each absolute distance measure. This also takes care of the fact that the distributions of the absolute distance measures are highly skewed. The base models in this article, therefore, are log-linear regression models. Our data include observations at both employee and leader level. It is reasonable to believe that the answers from the employees regarding their assessments of their leader are nested within each leader (i.e. the unobserved characteristics of the leader influence their assessment). This calls for a multilevel model

designed to handle data organized at different levels of analysis. We estimate our models accounting for both a random intercept and a random coefficient. The random coefficient is the log variable of the difference in assessment between employees and their leader before the leadership training experiment. In these models, we allow for correlation between the random intercept and random coefficient. Descriptive statistics of leadership behaviors before and after leadership training and of other variables in quantitative models are presented in Tables 1 and 2, respectively.

<<<Insert Tables 1 and 2 about here>>>

QUALITATIVE DATA

To identify the qualitative changes in leaders' and employees' perceptions of transformational and transactional leadership in each training group and in the control group, we interviewed 18 leaders and 18 employees before and after training. To limit the variation, we focused on public schools and interviewed only male leaders and female employees (the most typical combination). This yielded a total number of 69 interviews as one leader and two employees were not able to participate in the second round of interviews. Respondents were selected so that we had at least four leader/employee pairs for each of the four groups (i.e., three training groups and the control group). All procedures are described in detail in Bro (2018), and appendixes B and C describe all results (for transformational and transactional leadership, respectively). Based on coding validated by inter-coder reliability tests (12 out of 69 interviews coded by two persons), we present the typical statements about transformational and transactional leadership for leaders and employees before and after training (displays 1 and 2 below, and displays B1-3 in appendix B and C1-3 in appendix C).

RESULTS

This section combines quantitative tests of the three hypotheses with qualitative findings that illustrate what happened in some of the public organizations during training. To test the impact of leadership training on the agreement between leader and employee leadership ratings quantitatively, Tables 3, 4 and 5 use logged distance measures of ratings for employees and leaders as dependent variables for each leadership behavior. In other words, these regression analyses show the effects of the relevant types of leadership training on the SOA gaps for transformational leadership (Table 3), transactional use of verbal rewards (Table 4) and transactional use of pecuniary rewards (Table 5). The findings show how effective the leadership training programs were in closing the gap between leaders' and employees' assessments of transformational and transactional leadership in public and private organizations. Negative coefficients indicate that a given leadership training/combination of leadership training and organizational type was effective in reducing the SOA gap for the type of leadership behavior investigated.

Each table includes four regression models. Model 1 reports the average local treatment effect on each dependent variable controlling for the initial gap in leadership ratings. Model 1, thus, tests whether leadership training leads to convergence of leadership ratings (Hypothesis 1). The size of the coefficients allows us to see whether a 'convergence' effect is larger for one of the training programs (for example the transformational leadership training program compared to the transactional leadership training program, as both programs are relevant for the use of verbal rewards). This tests Hypothesis 2. Model 2 adds dummy variables for sector and functional areas (public organizations = 1, private = 0; school = 1, otherwise = 0; daycare centers = 1, otherwise = 0, i.e., finance is the reference category for functional area). Model 3 introduces interaction terms between the sector variable and the leadership training program dummies to assess whether leadership training has different

effects in reducing the disagreement between employees' and leaders' leadership ratings in public compared to private organizations. If these interaction terms are significant, it supports Hypothesis 3. Finally, Model 4 controls for absences from training sessions (high absence = 1 if the relevant leader missed two or more sessions). We acknowledge that absence is an endogenous variable, but it still strengthens the conclusions that there is no substantial difference between models 3 and 4 from Tables 3 to 5.

<<< Insert Table 3 about here >>>

As stated in Hypothesis 1, leadership training is expected to reduce the distance between leaders' and employees' ratings of a given type of leadership behavior. As mentioned, reductions in the gap corresponds to negative regression coefficients for the training variables in Table 3. Contrary to our expectation, Models 1 and 2 indicate that the training programs do not significantly reduce the distance between leaders' and employees' ratings. The sector variable is also not statistically significant. Yet, concluding that leadership training does not have convergence effects would be premature.

Models 3 and 4 in Table 3 show that the transformational leadership training program reduces the distance in leaders' and employees' ratings of transformational leadership more in public than in private organizations. This supports Hypothesis 3. When we control for high absences in Model 4, the convergence effect for the transformational leadership training program in the public sector is 7.3 percent ($0.454 - 0.527 = -0.073$; $p < 0.10$), while the effect of combined leadership training is 16.1 percent ($0.203 - 0.364 = -0.161$; $p < 0.05$). The coefficient on the training variable expresses estimated effects of training programs for private organizations. This indicates that the transformational leadership training program (β

= 0.454; $p < 0.01$) tends to increase the distance between ratings of transformational leadership by private sector leaders and their employees.

Based on the qualitative data, the 18 leaders can be categorized according to their initial practice of transformational leadership. “Leaders with vision and action” are leaders who develop a vision for their organization, communicate it and sustain attention to it with their employees. “Leaders with vision without action” develop visions but typically cannot recount them or their specific contents. Finally, “Leaders with no vision” have no visions or give vague or distanced accounts of a vision. While these categories classify leaders based on the extent to which they exhibit transformational leadership behaviors, qualitative data also clearly point to inconsistencies between leaders’ self-described behaviors and what their employees see. Such inconsistencies typically manifest in leaders self-describing as ‘more’ transformational than accounts by their employees support (and rarely the other way around). In particular, employees find it difficult to ‘decode’ their leaders’ transformational leadership behaviors when a vision indeed exists but is not shared or maintained among employees. This is illustrated by one employee working for a “leader with vision but without action”:

“He may well say all the words. But sharing the vision? [...] We are often together [for team meetings], and there we have to split into groups and discuss “this, and that, and that”. But things are [...] impossible to recap [...] Sometimes the thoughts are too vague or perhaps not specific enough [...] [And you] forget to get something out of it.”

There are two aspects of this finding: First, a vision must be clear and easy to communicate to the employees in an understandable way. Second, the vision must be made concrete in relation to the employees’ work. If the vision is never concrete, leaders risk being

seen as someone with elaborate, but cheap, talk or risk that employees focus on other visions or goals. As noted by one employee: “[...] *It is so difficult if you don’t even know what the basics are. You have to know what it is I have there, and what we are missing? You cannot just say all these fancy words and say ‘Ugh yeah, that sounds good!’*” Yet, we see some evidence that the tailored training in transformational leadership might help. Leaders in the training groups – especially in the transformational leadership and combination groups – increase their levels of transformational leadership behaviors compared to the control group. Importantly, this change can also be traced in employees’ accounts, cf. Display 1 below. One employee working for a leader assigned to the transformational leadership training group gave the following account prior to the training: “**Do you have a vision?** *No. Not one that I know of. And I think that is a major problem,*” but reported in the second round: “**Has anything changed within the last year?** *Oh yeah! We are much more [concrete with respect to the vision]. [...] And the leadership is very attentive to it ... [The leader] is a man of the vision. He wants to move things – the organization has to be dynamic.*” In addition to increasing sharing and sustaining behaviors, several of the interviewed leaders also alter their visions by linking one overall vision statement with a number of concrete focus points that the organization and hence the employees can use in their interpretation of the vision when making it concrete and subject to prioritization in their daily work. This makes it easier for the employees to link their work with the vision.

<<< Insert Display 1 about here >>>

In sum, the transformational leadership program reduced the distance between leadership ratings of transformational leadership in public sector organizations relative to the effect of training of the private leaders, where the same programs increased the SOA gap.

The combined leadership training reduced the distance between public sector leaders' and their employees' ratings of transformational leadership. The coefficient is smaller on combined leadership training than on transformational leadership training and not statistically significant. The estimated effect size of the sector differences between public and private organizations is about one-third of a standard deviation. With regards to the multilevel results, the estimated standard deviations for the random intercepts ($\beta_{sd(_cons)}$) are strongly significant. Accordingly, the leader-specific means of the intercepts vary significantly between leaders around the grand mean intercept ($\beta_{constant}$). If we move on to the estimated standard deviation of the random slopes' coefficient ($\beta_{sd(\lnDTF)}$), the estimates are also strongly significant. Again, this suggests that the leader-specific contributions to the estimated slope vary significantly between leaders around the grand mean slope (β_{\lnDTF}). Finally, the correlation estimate ($\beta_{corr(\lnDTF,_cons)}$) between the standard deviations of the random intercepts and the random slope are negative and significantly different from 0. The latter suggests that if the mean of the deviation in the assessment of a given leadership behavior between the relevant leader and her/his employees before the leadership training experiment is larger than the grand mean (β_{\lnDTF}), then the intercept mean from the specific leader is relatively smaller compared to the grand mean intercept (the constants).

<<< Insert Table 4 about here >>>

Table 4 replicates the abovementioned quantitative analyses for ratings of leaders' use of verbal rewards. Although verbal rewards can be categorized as a transactional leadership behavior, it might also be a result of transformational leadership training because verbal appreciation of employees' effort to contribute to the vision can be a way to share and maintain focus on the vision. As in Table 1, our results indicate that none of the training

programs significantly reduced the distance between leaders' and employees' ratings of the use of verbal rewards for all organizations (cf. Table 4, Models 1 and 2).

Model 3 reveals a statistically significant positive regression coefficient for the sector variable, indicating that average disagreement between leaders' and employees' ratings of the use of verbal rewards is generally larger in public organizations. The negative interaction term between transactional training and public ownership status ($\beta = -0.495$; $p < 0.05$) indicates that the transactional leadership training program reduced the distance in ratings of verbal rewards to a greater extent in public than in private organizations.

When we control for high absence in Model 4, the convergence effect for the transactional leadership training program is 19.8 percent ($0.314 - 0.495 = -0.181$; $p < 0.05$). For leaders and their employees in the public sector, transactional leadership training reduced the distance between their ratings of verbal rewards. The estimates of the multilevel parameters follow the same trends as in Table 3.

According to the qualitative interviews, almost all leaders use verbal praise and recognition, but it differs whether the recognition (1) is individualized or collective in nature, (2) is contingent on effort and performance, and (3) is linked to an organizational vision. As illustrated by one leader's description: "*I actually think that I'm pretty good at recognizing [employees] based on work effort*", and his employee's account that "*He is actually always good at saying, 'well done'*". However, not all leaders succeed in tying recognition to individuals' work as noted by one employee: "*You feel that he appreciates your work, but I don't really experience it first-hand. It is not that individual*". Moreover, some leaders successfully manage to tie the recognition to work that advances or contributes to the organization's vision. A statement from one employee illustrates this:

"The praise and the recognition mostly occur when we have it all completed ... When those teachers did a really good job. He has said that aloud; it is really something

that means a lot here, and that is something we do. That we think makes a difference for the children, we have here.”

We observe this trend most notably in organizations where the leader participated in the transformational leadership training, and it is in stark contrast to leaders who simply provide recognition without anchoring it to a reference point or vision. As described by an employee at a different school, “[the leader] *writes weekly newsletters and always begins with a ‘thank you’ for the effort the previous week ... It is in all the newsletters, so it kind of becomes less significant*”. This illustrates an important point: Recognition has to be authentic in the eyes of employees, and an important way to do this is to tie praise and verbal recognition to work that directly contributes to the collective goals of the organization. Some leaders are very attentive to this challenge. A leader assigned to the transformational leadership training program expressed it this way:

“I hate people who give praise simply because they have to praise someone. I think that is unnatural, and it is so fake, and I think most people see right through it. That is why I try to primarily give praise when I feel a sincere desire to do so, where I have felt something – fortunately that happens often – and articulate it when I see someone do something where I think to myself, ‘That is really great, and it fits right in.’”

This leader also describes the change from before the training program where he reported: *“I don’t believe in rewards and consequences. That is my fundamental philosophy.”* (cf. Display 2). His employees echoed this sentiment in the first interview round: *“[Leading using rewards and consequences] is not something I recognize at all, I believe. Fortunately.”* The interviews confirm that the use of verbal recognition and praise changed after the training. The employee said, *“He recognizes the entire function ... He pays attention to our*

work effort, but he does not use [pecuniary] rewards or consequences". The general trend in the material, as illustrated in Display 2, is that employees see a little more transactional leadership after the training if the leaders had this element in their program (combined and transactional training groups) and this increased SOA slightly in these organizations.

<<< Insert Display 2 about here >>>

<<< Insert Table 5 about here >>>

The qualitative interviews indicate that pecuniary rewards are used relatively little in the schools, but that there is still a gap between employee and leader perceptions. Table 5 reports quantitative analyses similar to Tables 3 and 4. Contrary to our expectation in Hypothesis 1, the transactional leadership training program increased the distance between leaders' and employees' ratings of the leaders' use of pecuniary rewards (0.223 and 0.212 for Models 1 and 2 respectively; $p < 0.05$). However, none of the interaction terms (cf. Models 3 and 4) are statistically significant. This suggests that we do not find systematically heterogeneous effects of training programs based on sector for this type of leadership behavior.⁶ The estimates of the multilevel parameters follow the same patterns as in Table 3.

For Tables 3 to 5, the separate treatment effect for private leaders is the coefficient for the relevant training in models 3 and 4 (if control for absence is seen as beneficial, model 4 should be used). For all the models, these coefficients are positive (increased SOA gap, but often far from statistically and substantively significant). The separate treatment effect for public leaders is found by adding the coefficients for the relevant training with the interaction coefficient for this training and the ownership variable. These coefficients are consistently

negative, suggesting that training decreases the SOA gap (but sometimes the estimated effect is close to zero).

<<< Insert Table 6 about here >>>

To better understand the quantitative findings in Tables 3-5 (especially the puzzling finding that training seems to increase the average SOA gap for private leaders), Table 6 presents three additional quantitative analyses, which might shed some lights on the other results. Note that they are post-hoc analyses without pre-formulated hypotheses. The idea is to assess whether changes in the distance between leaders' and employees' ratings (analyzed in Tables 3-5) are due to leaders changing their self-assessments or employees' changing their perceptions of leadership. We therefore use distance between ratings as the dependent variable, while the explanatory variables are changes in leaders' ratings and changes in employees' ratings. The initial distance between ratings (prior to the leadership training programs) is included to control for the baseline SOA accuracy.

Changes in employees' ratings of transformational leadership (Model 1 in Table 6) are negatively associated with the SOA gap at time $t+1$ ($\beta = -0.019$ and $p < 0.01$). In contrast, changes in leaders' self-assessments are positively associated with this distance between employees and leaders' ratings ($\beta = 0.006$ and $p < 0.05$). These results indicate that changes in employees' perceptions of transformational leadership make employee and leader ratings more consistent, while the opposite is true for changes in leaders' self-assessments. This suggests that the overall decline in distance between leaders' and employees' ratings of transformational leadership is caused by a greater change in employees' assessments than in leaders' self-assessments.

Models 2 and 3 in Table 6 replicate the analyses for the use of verbal and pecuniary rewards, respectively. Changes in employee ratings are negatively associated with the distance between leaders' and employees' ratings of verbal and pecuniary rewards (Model 2: $\beta = -0.019$; $p < 0.01$; Model 3: $\beta = -0.008$ and $p < 0.01$), while changes in leaders' self-assessment are only statistically significant for the use of verbal rewards ($\beta = 0.006$; $p < 0.05$). The results consistently point to changes in employees' perceptions of leadership as the mechanism for how leadership training programs can reduce the gap between leaders' and employees' ratings of leadership. The results are similar when we split the sample by sector (results not shown but available upon request). The estimates of the multilevel parameters follow the same patterns as in Table 3.

CONCLUSIONS

Organizations are likely to perform better when leaders and employees see eye to eye. High self-other agreement (SOA) is thus associated with lower levels of turnover, higher job satisfaction, and better overall organizational performance (Atwater et al. 1998; Černe et al. 2014; Felfe and Heinitz 2010; Jacobsen and Staniok 2018). Unfortunately, the gap between leader and employee ratings of the same leadership behaviors is substantial, and this study examined whether leadership training could narrow it. We also investigated whether the training effects on the SOA gap differ between different types of leadership training and leadership behavior and for different types of organizations (public and private).

The first hypothesis (training reduces the SOA gap) received mixed support. Neither transformational nor combined leadership training had an average effect on the leader-employee distance on the transformational leadership scale when we do not differentiate between public and private organizations. Leadership training did not narrow the leader-employee gap on pecuniary rewards; in fact, transactional leadership training increased it.

The interviews indicate that the employees hindered the implementation of pecuniary rewards, and when one of the leaders tried to use them and saw himself as using these rewards more (without real implementation), the gap between leader and employee increased. This indicates differences between the types of leadership behaviors, providing some support to hypothesis 2 (different types of leadership behavior will moderate the training effect on SOA accuracy). More research is needed to better understand the mechanisms behind this type of heterogeneous training effects.

Our quantitative test of hypothesis 3 about heterogeneous effects related to ownership (public/private) shed some light on these mixed results. All nine interaction effects between training and public ownership status are negative (meaning that the training reduced the SOA gap more in public than in private organizations), and four of these interaction effects are statistically significant. The overall pattern of findings is thus consistent with hypothesis 3. All coefficients that estimate separate treatment effects for public leaders are negative (reducing the SOA gap), while the corresponding coefficients for private leaders are positive (indicating an increase in the gap). Further findings from Table 6 help us to better understand why/how leadership training increases the gap in the private sector.

Our findings from Table 6 suggest that the gap is likely to decrease more when employees observe changes in leadership behaviors of their leaders, not when leaders rate themselves higher after training. This implies that in private organizations, leaders' self-perception may have changed more—they see themselves as more active than their employees do, and suggests that the overall decline in distance between leaders' and employees' ratings of transformational leadership is mostly caused by a greater change in employees' assessments than in leaders' self-assessments. For all three types of leadership, we found that employees' perceptions generally moved closer to the leader's position after leadership training; but in the case of transformational leadership, the leaders actually moved

further away from the employees. Such results are consistent with the idea that leaders changed their actual behaviors after training and that employees were able to observe changes in leadership behaviors. The qualitative interviews exemplify some of these changes and illustrate that training sometimes makes leaders more effective in using transformational and transactional leadership (instead of using more or less) because it enhances their knowledge and skills. It, however, is also possible that leaders with higher social desirability may rate themselves even higher after training. In this case, training may not always increase their self-awareness in terms of how others see them. We find several cases of this behavior from our interviews with public managers, and the quantitative results indicate that this tendency might be even stronger for the private leaders. There might also be strong barriers in the employees' perception of changed leadership behaviors.

This study has implications for future research and practice. In terms of research, even though this was the largest experimental study of leadership training to date, the sample size may explain some of the statistically insignificant findings. A larger study would be able to precisely estimate the impact of leadership training, especially once the various contexts and contingencies come into play. Further, although we specify the possible mechanisms for how leadership training can reduce the gap between leaders' self-assessments of their leadership and employees' perceptions of it, this study does not allow us to empirically investigate them, which may be an avenue for future research. Finally, the importance of context clearly came through in this study as virtually all changes occurred in the public sector. Although this finding was consistent with our expectations, it is surprising that the SOA gap increases, if anything, in private sector organizations where leaders have access to more management tools. Private and public leaders were mixed in all leadership training classes and network groups and thus received the same stimuli (making it even more interesting that it had

different effects). Probing this contextual relationship and determining if it is general should be a high priority for future research.

Although the present analysis is the largest single experimental study of public leadership, it is fair to note that it was conducted in one country, and that generalizing the results should be done with caution. Denmark is an economically developed nation that delivers the services examined in a relatively decentralized, nonhierarchical environment in the presence of strong employee unions. The public sector literature lists a wide variety of contextual factors that can affect how leadership can have an impact on performance; contextual factors can also have effects on leadership training and the ability of training to improve SOA.

Given the impact of training on leader-employee alignment, future research needs to investigate the implications of this alignment or lack thereof. Other studies indicate that internal organizational processes work better (job satisfaction, turnover, etc.) and overall organizational performance is higher in organizations where leaders and followers see eye to eye. Whether such positive benefits accrue from leadership training that induces alignment needs to be investigated. In terms of practice, the nuanced findings in this study suggest that organizations should not see leadership training as a panacea. The effectiveness of training in reducing the gap between leaders and employees clearly varies by sector and likely varies by other characteristics. Leaders may also possess other individual traits that contribute to widening or narrowing the leader-employee distance. Attention to both individual and organizational factors could potentially inform leaders as they decide how to allocate their scarce organizational development resources.

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NOTES

¹ We understand public organizations as being owned by the public, and private organizations as being owned by private stakeholder, knowing that there are multiple dimensions of publicness, but we need a strict definition to be able to compare organizations with similar functions.

² Although leaders in general tend to overrate their own leadership, some leaders do have downwardly biased assessments. The implications may be less severe in these cases because such leaders may feel pressure to alter inadequate leadership behaviors (Atwater and Yammarino 1992, 143). This can motivate leaders to work harder to “compensate for weaknesses,” and this can ultimately lead to more positive results (Atwater et al. 1998, 585).

³ Public organizations are also subject to more restrictive personnel rules. This should place a higher premium on the ability to use the motivational tools inherent in transformational leadership.

⁴ In Denmark, upper secondary schools are all public organizations. Since there are no comparable upper secondary schools in the private sector, we excluded 34 upper secondary schools from our sample. Furthermore, we only included managers with direct responsibilities for employees, not for other managers, and 56 daycare leaders of other daycare leaders were therefore also excluded.

⁵ Auxiliary analysis with a Heckman selection bias process did not reveal significant selection bias.

⁶ An alternative method of assessing convergence of leaders and followers is to ask if the dispersion of followers narrows after leaders go through training. We replicated the analysis in Tables 3, 4, and 5 using the standard deviation of the employees’ assessments as the dependent variable. In six of the seven cases (the exception was the impact of transactional

leadership training on the use of pecuniary rewards), the standard deviation decreased after leadership training.

Table 1. Descriptive statistics on leadership behaviors before and after leadership training

Leadership Behaviors	Before		After	
	Self	Other	Self	Other
<i>All leaders</i>				
Transformational leadership	83.88 (12.68)	70.21 (21.16)	82.52 (11.47)	70.43 (21.42)
Transactional leadership – VR	83.16 (14.25)	65.56 (25.68)	79.00 (16.09)	65.10 (26.21)
Transactional leadership – PR	43.42 (23.13)	38.23 (23.24)	46.67 (22.53)	37.73 (23.94)
<i>Leaders in the public sector</i>				
Transformational leadership	83.83 (12.86)	69.82 (21.02)	82.42 (11.50)	70.31 (21.22)
Transactional leadership – VR	82.75 (14.31)	64.80 (25.39)	78.58 (16.19)	64.52 (26.03)
Transactional leadership – PR	43.32 (23.16)	38.56 (23.03)	47.06 (21.94)	38.24 (23.82)
<i>Leaders in the private sector</i>				
Transformational leadership	84.22(11.44)	72.80 (21.92)	83.17 (11.24)	71.19 (22.72)
Transactional leadership – VR	85.90 (13.55)	70.58 (27.05)	81.84 (15.07)	68.91 (27.16)
Transactional leadership – PR	44.08 (22.91)	36.01 (24.54)	44.05 (26.01)	34.37 (24.49)
<i>Leaders in schools</i>				
Transformational leadership	86.03 (12.18)	65.97 (22.78)	82.69 (11.08)	60.77 (27.20)
Transactional leadership – VR	82.69 (13.97)	60.77 (27.20)	74.93 (19.06)	59.22 (27.68)
Transactional leadership – PR	33.55 (21.86)	30.23 (22.38)	34.38 (22.06)	29.32 (22.49)
<i>Leaders in daycare centers</i>				
Transformational leadership	87.56 (12.06)	79.02 (17.62)	85.48 (13.87)	78.42 (18.87)
Transactional leadership – VR	85.79 (14.08)	70.88 (24.56)	81.94 (14.86)	67.64 (26.87)
Transactional leadership – PR	38.79 (23.10)	35.30 (24.84)	44.30 (21.32)	32.60 (25.87)
<i>Leaders in tax offices or banks</i>				
Transformational leadership	79.91 (12.43)	70.84 (19.44)	81.01 (10.40)	72.45 (17.80)
Transactional leadership – VR	82.48 (14.51)	68.34 (23.52)	82.08 (11.50)	70.30 (22.81)
Transactional leadership – PR	56.02 (18.02)	48.08 (18.93)	60.87 (13.68)	48.99 (19.74)

Note. Average values are presented with standard deviations in parentheses; VR = the use of verbal rewards; PR = the use of pecuniary rewards.

Table 2. Descriptive statistics on other variables

Variable	Mean	S.D.	Min	Max
Transformational leadership training	0.260	0.439	0	1
Combined leadership training	0.263	0.440	0	1
Transactional leadership training	0.235	0.424	0	1
Public organization (Public=1)	0.870	0.336	0	1
School (School=1)	0.427	0.495	0	1
Daycare (Daycare=1)	0.177	0.382	0	1
Finance (Tax offices or Bank=1)	0.396	0.489	0	1
High Absences (Yes=1)	0.190	0.393	0	1

Table 3: Impact of training by sector on SOA gap in transformational leadership ratings

D.V.: DTF_{t+1} , logged	Model 1	Model 2	Model 3	Model 4
DTF _t , logged	0.229** (0.023)	0.224** (0.022)	0.224** (0.022)	0.224** (0.022)
Transformational Leadership Training	0.014 (0.080)	0.015 (0.078)	0.454** (0.163)	0.454** (0.161)
Combined Leadership Training	-0.114 (0.080)	-0.108 (0.077)	0.193 (0.186)	0.203 (0.187)
Transactional Leadership Training	0.004 (0.086)	0.031 (0.085)	0.256 (0.197)	0.254 (0.197)
School (School = 1)		-0.043 (0.071)	0.248 (0.152)	0.252+ (0.152)
Daycare (Daycare = 1)		0.250** (0.067)	0.250** (0.067)	0.242** (0.069)
Public Organization (Public = 1)		-0.024 (0.070)	-0.029 (0.070)	-0.033 (0.070)
Public Organization × Transformational training			-0.521** (0.185)	-0.527** (0.185)
Public Organization × Combined training			-0.352+ (0.203)	-0.364+ (0.205)
Public Organization × Transactional training			-0.261 (0.217)	-0.261 (0.217)
High Absences (1 = two or more absences)				0.045 (0.076)
Constant	1.954** (0.080)	1.912** (0.099)	1.665** (0.151)	1.659** (0.151)
Random-effects Parameters				
sd(Constant)	0.495** (0.078)	0.472** (0.079)	0.461** (0.080)	0.461** (0.081)
sd(lnDTF)	0.200** (0.026)	0.191** (0.026)	0.189** (0.026)	0.189** (0.026)
Corr (lnDTF, Constant)	-0.790** (0.064)	-0.794** (0.062)	-0.791** (0.064)	-0.792** (0.064)
sd(Residual)	1.040** (0.022)	1.040** (0.021)	1.040** (0.021)	1.040** (0.021)
LL(0)	-4491.426	-4491.426	-4491.426	-4491.426
LL(β)	-4321.365	-4311.741	-4308.785	-4308.619
N	2868	2868	2868	2868

Notes: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$. Two-tailed tests of significance for model parameters. One-tailed tests of significance for estimated variance (sd) parameters in the random-effects parameters.

Display 1: Transformational leadership behaviors from before to after the leadership training program

	First round (immediately before the beginning of the leadership training program)	Second round (After the leadership training program for the three groups)
TFL	<p>Leader: When we are done with [the vision] people will get in their own hands and so they can see “well this is THE thing”. Then you can throw it in the trash bin if you would like to do that.</p> <p><u>His employee</u> “Do you have a vision? No. Not one that I know of. And I think that is a major problem.</p>	<p>Same leader as in round 1: The vision [has] come out, and we have used it a lot. Many has a better one sitting around – we have sent it around. And that is a concrete fingerprint of LEAP.</p> <p><u>His employee</u>: [Our vision is,] that we need to make a [certain type of department] and some attractive, exciting and relevant [activities]... Has anything changed within the last year? Oh ya! We are much more [concrete with respect to the vision]. [...] And the leadership is very attentive to it... [The leader] is a man of the vision. He wants to move things – the organization has to be dynamic.</p>
COMBI	<p>Leader: If you would like me to outline the elements [of the vision] right now, I can’t do that. Because it is one that I revisit every single day. But we do have a vision... I am very careful to not say “vision and goals” all the time.</p> <p><u>His employee</u>: We do have a vision... [but] I don’t remember it by heart. It is something super difficult.</p>	<p>Same leader as in round 1: We have a concrete vision and some concrete goals. So that I can easily recognize myself in, all the four pillars on understanding and sharing concrete visions and goals.</p> <p><u>His employee</u>: We are a school that has to make the children as skilled as possible. But I don’t think there is a lot of action.</p>
TAL	<p>Leader: I tell them of it [the vision] pretty much all the time. No, I don’t, but they know it. At least I think they do because I SAY it once in a while. I don’t say it every day.</p> <p><u>His employee</u>: In fact, I am not quite sure if we have a vision.</p>	<p>Same leader as in round 1: We have talked about [the organization’s direction] on different occasions and written it down ... [Yet some] have never heard of it.</p> <p><u>His employee</u>: There is a lack of an overall goal for what to do. This make it really difficult, if you want to work with something, but you aren’t colleagues with people that wants the same thing.</p>
Control	<p>Leader: I am not the one who sets the vision because then it would not be rooted in the organization itself.</p> <p><u>His employee</u>: It is [a vision] that we seek, and it is what we have asked for now: Where is it that we’re sailing? What do we want? Nobody has made a decision about what it is that we want.</p>	<p>Same leader as in round 1: We do not have a vision ... Is [transformational leadership] something you do? I have done it less in this period compared to when we met last... [There has been] some bad things, that need to be fixed. [...] Things are running off tracks.</p> <p><u>His employee</u>: There has been so much turbulence in relation to our leadership situation... But is there a vision? I actually don’t know. That is, nothing other than the national tests, that is, that you have to become better and more skilled.</p>

Table 4: Impact of Training by Sector on SOA gap in transactional (verbal reward) leadership ratings

D.V.: DVR _{t+1} , logged	Model 1	Model 2	Model 3	Model 4
DVR _t , logged	0.250** (0.024)	0.244** (0.024)	0.243** (0.024)	0.243** (0.024)
Transformational Leadership Training	-0.162 (0.106)	-0.164+ (0.100)	0.114 (0.310)	0.115 (0.310)
Combined Leadership Training	-0.017 (0.094)	-0.035 (0.089)	0.216 (0.255)	0.221 (0.254)
Transactional Leadership Training	-0.124 (0.093)	-0.102 (0.089)	0.315 (0.216)	0.314 (0.218)
School (School=1)		0.304** (0.072)	0.308** (0.072)	0.304** (0.075)
Daycare (Daycare=1)		0.167+ (0.089)	0.162+ (0.088)	0.160+ (0.088)
Public Organization (Public = 1)		0.194+ (0.103)	0.485* (0.199)	0.487* (0.199)
Public Organization × Transformational training			-0.327 (0.326)	-0.330 (0.327)
Public Organization × Combined training			-0.293 (0.272)	-0.299 (0.272)
Public Organization × Transactional training			-0.495* (0.237)	-0.495* (0.237)
High Absences (1=two or more absences)				0.023 (0.080)
Constant	2.049** (0.099)	1.758** (0.136)	1.509** (0.202)	1.506** (0.202)
Random-effects Parameters				
sd(Constant)	0.722** (0.076)	0.688** (0.078)	0.683** (0.078)	0.683** (0.079)
sd(lnDVR)	0.219** (0.028)	0.216** (0.028)	0.218** (0.028)	0.217** (0.028)
corr(lnDVR, Constant)	-0.846** (0.039)	-0.857** (0.040)	-0.861** (0.040)	-0.861** (0.040)
sd(Residual)	1.156** (0.025)	1.157** (0.025)	1.157** (0.025)	1.157** (0.025)
LL(0)	-4818.30	-4818.30	-4818.30	-4818.30
LL(β)	-4642.11	-4631.97	-4629.94	-4629.91
N	2868	2868	2868	2868

Notes: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$. Two-tailed tests of significance for model parameters. One-tailed tests of significance for estimated variance parameters in the random effects parameters.

Display 2: Transactional leadership behaviors from before to after the leadership training program

	First round (immediately before the start of the leadership training program)	Second round (After the leadership training program)
TFL	<p>Leader: I don't believe in rewards and consequences. That is my fundamental philosophy.</p> <p><u>His employee:</u> [Leading using rewards and consequences] is not something I can recognize at all, I believe. Fortunately.</p>	<p>Leader: [I] try primarily to give praise when ... I see someone do something where I think to myself: That is really great and fits right in.</p> <p><u>His employee:</u> He recognizes the entire function ... He pays attention to our work effort, but he does not use rewards or consequences.</p>
COMBI	<p>Leader: Reward and consequence do not guide people's behavior. Completely different things do.</p> <p><u>Employee:</u> Recognition is incredibly important. But as a reward.</p>	<p>Leader: We don't do rewards related to salary add-ons ... I have also mentioned several times that I have been attending this LEAP, that I don't believe it necessarily makes a big difference.</p> <p><u>Employee:</u> [There are] no rewards and consequences – that is absolutely certain.</p>
TAL	<p>Leader: Warnings and alike, corrections, I never do that because I believe it would be bad leadership ... Nobody I have had conversations with has talked about the issue with the salary.</p> <p><u>His employee:</u> He recognizes all of us as one. Every month we go to a meeting to chat and then you have to set some goals ... There are no rewards, it is a have-to thing. Unfortunately.</p>	<p>Leader: I have suggested a reward system where you can get a monetary reward based on better student well-being, national test scores, and exam test scores. But people weren't interested in this ... Generally, I have spent a lot of time making sure we recognize each other [the past year].</p> <p><u>His employee:</u> I don't know if it something related to his education, but we discussed it a lot. Some of these goals the leader sets. That you can get a contingent reward. You could for example get 5,000 on top of your salary if you met some criterion of success... In that case the employee representatives said: "No way. That is not how business works here".</p>
Control	<p>Leader: I see many examples where rewarding a few leads to the many slowing down ... I haven't experienced that people become better colleagues or employees by being whipping ... I have experienced many times that a fellow leader gives a consequence on an incomplete basis.</p> <p><u>His employee:</u> We can't get salary add-ons or something like that ... [correction] is not something that is done in public, but it does take place here, and not intentionally in hiding, not as a secret, but as in, it takes place behind closed doors.</p>	<p>Leader: I don't think it is right [to use rewards and consequences based on results] ... and I cannot see how it could be productive.</p> <p><u>His employee:</u> Add-ons to salary or warning may exist in the organization... I think desirable tasks depend on, what you believe is desirable to do. In any case, it is not easy to comprehend.</p>

Table 5: Impact of Training by Sector on SOA gap in transactional leadership (pecuniary rewards) ratings

D.V.: DPR _{t+1} , logged	Model 1	Model 2	Model 3	Model 4
DPR _t , logged	0.102** (0.023)	0.098** (0.023)	0.098** (0.023)	0.098** (0.023)
Transformational Leadership Training	0.025 (0.097)	0.016 (0.095)	-0.211 (0.231)	-0.212 (0.227)
Combined Leadership Training	0.138 (0.094)	0.110 (0.092)	0.231 (0.227)	0.207 (0.226)
Transactional Leadership Training	0.223* (0.101)	0.212* (0.098)	0.277 (0.228)	0.282 (0.226)
School (School=1)		0.164* (0.073)	0.155* (0.073)	0.173* (0.074)
Daycare (Daycare=1)		0.288** (0.090)	0.280** (0.091)	0.289** (0.089)
Public Organization (Public=1)		-0.119 (0.083)	-0.136 (0.205)	-0.148 (0.204)
Public Organization × Transformational training			0.274 (0.254)	0.289 (0.251)
Public Organization × Combined training			-0.141 (0.249)	-0.111 (0.247)
Public Organization × Transactional training			-0.080 (0.253)	-0.080 (0.252)
High Absences (1=two or more absences)				-0.107 (0.090)
Constant	2.343** (0.097)	2.342** (0.128)	2.361** (0.205)	2.377** (0.205)
Random-effects Parameters				
sd(Constant)	0.619** (0.074)	0.603** (0.074)	0.600** (0.074)	0.604** (0.073)
sd(lnDTF)	0.176** (0.023)	0.179** (0.023)	0.178** (0.023)	0.178** (0.023)
Corr (lnDTF, Constant)	-0.781** (0.053)	-0.787** (0.052)	-0.789** (0.052)	-0.793** (0.052)
sd(Residual)	1.166** (0.029)	1.164** (0.029)	1.164** (0.029)	1.164** (0.029)
LL(0)	-4718.562	-4718.562	-4718.562	-4718.562
LL(β)	-4612.455	-4605.220	-4603.589	-4602.874
N	2847	2847	2847	2847

Notes: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$. Two-tailed tests of significance for model parameters. One-tailed tests of significance for estimated variance parameters in the random effects parameters.

Table 6: Does Congruence Result from Leader Change or Employee Change?

D.V.:	DTF _{t+1} , logged	DVR _{t+1} , logged	DPR _{t+1} , logged
	Model 1	Model 2	Model 3
DTF _t , logged	0.318** (0.026)		
ΔTFL (Employee)	-0.019** (0.001)		
ΔTFL (Leader)	0.006* (0.002)		
DVR _t , logged		0.337** (0.026)	
ΔVR (Employee)		-0.019** (0.001)	
ΔVR (Leader)		-0.005+ (0.003)	
DPR _t , logged			0.119** (0.023)
ΔPR (Employee)			-0.008** (0.002)
ΔPR (Leader)			0.002 (0.002)
Constant	1.691** (0.070)	1.706** (0.076)	2.379** (0.073)
Random-effects Parameters			
sd(_cons)	0.613** (0.082)	0.674** (0.073)	0.607** (0.068)
sd(lnDTF)	0.241** (0.027)		
corr(lnDTF, Constant)	-0.899** (0.031)		
sd(lnDVR)		0.224** (0.025)	
corr(lnDVR, Constant)		-0.859** (0.038)	
sd(lnDPR)			0.182** (0.021)
corr(lnDPR, Constant)			-0.778** (0.051)
sd(Residual)	0.983** (0.023)	1.086** (0.025)	1.152** (0.031)
LL(0)	-4491.43	-4818.30	-4718.56
LL(β)	-4167.76	-4465.16	-4581.81
N	2868	2868	2847

Notes: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$. Two-tailed tests of significance for model parameters. One-tailed tests of significance for estimated variance parameters in the random effects parameters. Δ TFL = changes in transformational leadership scores, Δ VR = changes in verbal rewards scores, and Δ PR = changes in pecuniary rewards scores.