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Work motivations as antecedents and outcomes of leadership: Integrating self-determination theory and the full range leadership theory

Yaniv Kanat-Maymon [a, *], Maor Elimelech [b], Guy Roth [c]

[a] Baruch Ivcher School of Psychology, Interdisciplinary Center (IDC) Herzliya, Israel
[b] Business School, Ariel University, Israel
[c] School of Education, Ben-Gurion University, Israel

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ABSTRACT

While some research has documented links between supervisors' leadership style and subordinates' motivation, little is known about what drives leadership behaviors in the first place. This study aimed to contribute to the scholarly literature on motivational antecedents of leadership by drawing on the self-determination theory (SDT) of motivation and the full range leadership theory. We traced work motivation throughout the leadership process, starting with supervisors' work motivations as potential antecedents of leadership styles and proceeding to how leadership styles associate with subordinates' work motivations. A 2-2-1 multilevel mediational model tested on 61 supervisors and their 244 subordinates showed that supervisors' autonomous work motivation was linked with subordinates' ratings of supervisors' transformational leadership which, in turn, was linked with subordinates' autonomous work motivation. Furthermore, supervisors' transactional leadership mediated the association between their controlled motivation and their subordinates' controlled motivation, whereas supervisors' passive-avoidant leadership mediated the link between their amotivation and their subordinates' amotivation. Our integration of the full spectrum of SDT's conceptualization of motivation with the full range of leadership theory provides insights into the motivational processes that naturally direct supervisors toward transformational, transactional, or passive-avoidant leadership styles and their consequent reflection in subordinates' motivations. The work has both theoretical and practical implications.

1. Introduction

The full range leadership theory (FRLT; Bass & Avolio, 1994) has dominated workplace leadership literature for the past three decades (Lord, Day, Zaccaro, Avolio, & Eagly, 2017). This leader-centric theory views work supervisors as power-wielding actors affecting group and organizational outcomes (Avolio, Bass, & Jung, 1999; Judge & Piccolo, 2004). In FRLT, the behaviors supervisors exhibit in their attempts to influence subordinates (leader-follower in the leadership jargon) are often classified in terms of three meta-categories or leadership styles: transformational, transactional, and passive (Derue, Nahrgang, Wellman, & Humphrey, 2011).

Several meta-analyses point to supervisors' use of transformational and, to some extent, transactional leadership styles as contributing to subordinates' desired work-related outcomes, such as positive attitudes and performance, while a passive style appears detrimental (Judge & Piccolo, 2004; Wang, Oh, Courtright, & Colbert, 2011). In an attempt to explain these findings, scholars have argued that transformational leadership can better achieve desired organizational outcomes because it more effectively motivates subordinates to apply their abilities and resources to a given goal (Bass, 1985; Burns, 1978; Shamir, House, & Arthur, 1993).

Studies on the effects of leadership styles in the workplace are important in that they suggest which styles are more effective in achieving desired organizational outcomes (Bono & Judge, 2003). However, if we are to understand how to influence or modify the display of leadership behaviors down the organizational hierarchy, it is necessary to shift our focus toward the genesis of leadership. Research on supervisors' training has shown some promise in

* Corresponding author. Baruch Ivcher School of Psychology, Interdisciplinary Center (IDC) Herzliya, P.O. Box 167, Herzliya, 46150, Israel.
E-mail address: ykanat@idc.ac.il (Y. Kanat-Maymon).

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fostering their use of transformational leadership (Day, Fleenor, Atwater, Sturm, & McKee, 2014). Yet, we know little about what naturally motivates certain supervisors to behave in a transformational, transactional, or passive manner. In an attempt to capture what drives leadership styles, some researchers have pointed to leadership motivation (Chan & Drasgow, 2001). However, it is less clear how an individual's motivation to lead predicts how he or she will actually do so. Different supervisors might have the same inclination to lead but adopt different leadership styles.

The main aim of this study was to address this important yet relatively understudied issue by proposing a model integrating the self-determination theory (SDT; Deci & Ryan, 2000) of work motivation with the FRLT (Bass, 1985). SDT posits a multidimensional conceptualization of motivation differentiating three broad motivational orientations: autonomous motivation (characterized by a sense of volition and self-endorsement of one's own behavior); controlled motivation (characterized by pressure-based forces); and amotivation (lack of intention to act). Extending previous research arguing motivational orientations shape how people manage others (Roth, Assor, Kaplan, & Kanat-Maymon, 2007), we developed and tested a model suggesting supervisors' workplace motivations are potential antecedents of their leadership behaviors. Specifically, we charted how each SDT motivational orientation can potentially shape a different leadership style.

The secondary aim was to show that the spillover of motivation from supervisors to their subordinates (Deci et al., 2001) can, to some extent, be explained by the supervisors' leadership behaviors. Previous research, albeit scant, suggests transformational leadership is associated with subordinates' autonomous motivation (Wang & Gagné, 2013), while transactional leadership may be associated with subordinates' controlled motivation (Eyal & Roth, 2011). To the extent that supervisors' own work motivations can shape their leadership styles, it is reasonable to assume that the effect of supervisors' motivation on their subordinates' motivation is mediated through leadership.

Our research contributes to the field of leadership and management in two key ways. First, it provides insights into the sources of workplace motivation that may naturally direct supervisors toward transformational, transactional, or passive leadership behaviors. The motivational antecedents of leadership have recently attracted a great deal of research interest. For instance, self-regulatory focus (Kark & Van Dijk, 2007), motivation to lead (Chan & Drasgow, 2001), and childhood mastery motivation (Gottfried et al., 2011) have all been examined as potential predictors of leadership, mostly transformational leadership. SDT's comprehensive view of motivation has the potential to shed light on the motivational antecedents of a wider spectrum of leadership styles and enrich this developing body of research. Identifying motivational factors may also be valuable for practitioners and researchers interested in leadership readiness (Boyce, Zaccaro, & Wisecarver, 2010).

Second, previous research has shown that supervisors' leadership behaviors differ in the extent to which they affect subordinates' work motivation and, consequently, their performance (e.g., Judge & Piccolo, 2004). Put simply, transformational supervision is more effective in achieving desired organizational goals because it yields more motivation and engagement (e.g., Breevaart et al., 2014; Tims, Bakker, & Xanthopoulou, 2011). Yet, SDT maintains not all workplace motivations are equal; the type or quality of workplace motivation is very important in predicting various work outcomes (Deci, Olafsen, & Ryan, 2017; Gagne & Deci, 2005; Kanat-Maymon, Yaakobi, & Roth, 2018). Applying an SDT conceptualization of motivation to leadership may yield insights into the motivational mechanisms of each leadership style. In other words, supervisors' transformational, transactional, and passive leadership may not only foster different amounts of subordinates' motivation but also different types.

2. Theory and hypotheses development

2.1. Leadership

The concepts of transformational and transactional leadership are anchored in Burns (1978) work on political leadership. To Burns, transformational leaders offer their followers a purpose that exceeds short-term goals and focuses on higher order intrinsic needs. Meanwhile, transactional leaders focus on a cost-benefit exchange (Bass, 1985), giving followers something they want, rewards in most cases, in exchange for compliance and services rendered.

On the basis of Burns' conceptualization, Bass (1985) developed a typology of leadership behaviors fitting into the broad categories of transformational and transactional leadership. Transformational leaders use four behavioral dimensions to empower, inspire, and encourage followers to maximize their potential (Avolio et al., 1999). *Idealized influence* occurs when supervisors act in admirable ways and lead by demonstrating personal values and beliefs, causing subordinates to identify with them. *Inspirational motivation* involves articulating a vision of the future in a way that is appealing and inspiring to subordinates. *Intellectual stimulation* is generated when supervisors encourage subordinates to think for themselves, question and reframe assumptions, and approach old problems in innovative ways. Finally, in *individualized consideration*, supervisors pay special attention to their subordinates' individual needs and help them accomplish their potential.

Transactional leadership is based on contingent reinforcement theories or what Bass (1985) calls a cost-benefit exchange process, with leadership viewed as involving a series of transactions between the leader and the led, wherein the former exchanges rewards in return for the latter's compliance (Burns, 1978). In its original conception, the three dimensions of transactional leadership included contingent rewards, management by exception-active, and management by exception-passive. *Contingent reward* is the degree to which supervisors encourage subordinates' performance by setting up clear expectations and establishing rewards and incentives for meeting these expectations. *Management by exception-active* is the degree to which supervisors monitor subordinates' behavior and take corrective action before undesirable behavior creates serious problems. Finally, *management by exception-passive* is the degree to which supervisors do not get involved until failure occurs or there are deviations in workflow.

It is important to note that even though the transformational and transactional leadership styles are different in concept and in practice, the FRLT does not view them as opposite ends of a continuum. Rather, they comprise two conceptually distinct but related dimensions of leadership that build on one another. Specifically, supervisors' transformational leadership augments transactional leadership in predicting employees' performance (Dumdum, Lowe, & Avolio, 2013; Judge & Piccolo, 2004)

Bass and Avolio (1994) also identify a lack of leadership, *laissez-faire*. Supervisors opting for this nonleadership style take a "hands-off" approach, characterized by avoiding decision-making and responsibility, neglecting employees, and not monitoring work performance. Laissez-faire leadership bears some resemblance to management by exception-passive leadership, as both are positioned at the bottom of a hierarchy of effectiveness, highly correlated (Hinkin & Schriesheim, 2008; Yammarino & Bass, 1990), and negatively linked with employees' performance and satisfaction (Dumdum et al., 2013; Judge & Piccolo, 2004). As a result, Avolio

et al. (1999) combined the two as "passive avoidant leadership" and used them empirically as a single factor in their multifactor leadership model (see also Derue et al., 2011).

2.2. Self-determination theory (SDT)

SDT (Deci & Ryan, 2000; Ryan & Deci, 2017) offers a multidimensional conceptualization differentiating three broad types of motivation, based on the extent to which it is internalized. *Autonomous motivation* is characterized by engagement in an activity, with a full sense of volition and choice. According to SDT, people are autonomously motivated when they engage in an activity for its own sake because it is interesting and enjoyable (intrinsic motivation) or because they acknowledge its value and purpose (identified regulation). In contrast, *controlled motivation* entails engagement with a sense of pressure and control. People are viewed as being controlled when their engagement is not internalized but driven by external factors, such as pursuing a reward or avoiding a punishment (external regulation), or when it is only superficially internalized and driven by internal pressures, such as self-worth contingencies, ego-involvement, or guilt (introjected regulation). Controlled motivation lacks identification and a sense of ownership; demands remain somewhat alien to the individual, pressuring and controlling him or her from within as much as from without (Gagne & Deci, 2005).

SDT identifies a third form, *amotivation,* which is neither autonomous nor controlled. In both autonomous and controlled motivation, people perceive why they do what they do, but amotivation refers to the absence of contingency between actions and outcomes (Deci & Ryan, 2000). In other words, amotivated people lack the intention to act, and thus, cannot find a reason to engage in an activity.

Numerous studies on the workplace suggest autonomous motivation is more beneficial for both the individual and the organization than controlled motivation or amotivation. For instance, autonomous motivation increases effort, goal acceptance, organizational commitment, and psychological well-being, and predicts lower turnover intentions and less dishonesty (Deci et al., 2017; Kanat-Maymon, Benjamin, Stavsky, Shoshani, & Roth, 2015; Richer, Blanchard, & Vallerand, 2002; Roth, Assor, Kanat-Maymon, & Kaplan, 2006).

2.3. From supervisors' work motivation to their leadership behaviors

To date, little is known about why some supervisors develop a certain leadership type and not another. There have been a few attempts to explain the motivational determinants of leadership. For instance, Chan and Drasgow (2001) explained leadership effectiveness by looking at individual differences in the motivation to lead. It is one thing to explain the strength of the willingness to lead, however; the way a person chooses to lead is another thing entirely.

In what follows, we use SDT's unique perspective of workplace motivations to formulate our hypotheses on leadership styles. We describe the main or most likely pathways between work motivations and leadership styles, which together constitute the hypothesized model. We begin by arguing autonomous motivation is likely to employ the four key components of transformational leadership. Autonomously motivated supervisors understand the value of the work they do, and acknowledge the variety of ways to accomplish it. Vansteenkiste, Simons, Lens, Sheldon, and Deci (2004) showed autonomous motivation to engage with a certain topic that led to deeper processing and understanding of it. Similarly, Roth and associates (2007) found autonomously motivated teachers tended to explain to their students why a subject was important, and to emphasize its relevance. A better understanding of the tasks at hand and the values they stand for allows supervisors to articulate a clear vision to their subordinates, along with convincing explanations and rationales. Thus, they are often perceived as inspiring.

Autonomously motivated supervisors may also be more intellectually stimulating because of their high-quality motivation and ability to experience new events without defensiveness. Hodgins, Yacko, and Gottlieb (2006) showed autonomously motivated people approach ongoing events nondefensively, with relatively little distortion because their "self" is more integrated. A nondefensive and open approach to new ideas and information may play a major role in soliciting creative thinking, stimulating colleagues to reframe problems, and approach them in new ways (Liu, Chen, & Yao, 2011).

Furthermore, autonomously motivated supervisors may be perceived as high on individualized consideration, as they pay more attention to their subordinates. It is well established in SDT literature that autonomously motivated people are more supportive of those they mentor (e.g., Roth et al., 2007), resulting in greater employee need satisfaction (Baard, Deci, & Ryan, 2004; Deci et al., 2017).

Finally, a major characteristic of autonomous motivation is the alignment of behaviors with core values, so that these behaviors are seen as emanating from oneself (Deci & Ryan, 2000). Autonomously motivated supervisors may be perceived as high in idealized influence; by idealized influence, we mean the degree to which they exemplify consistent values and serve as models of their own vision. Related research using SDT found school principals' autonomous motivation was linked with reports of their transformational leadership (Trépanier, Fernet, & Austin, 2012). On the basis of the above argumentation and findings, we proposed the following:

Hypothesis 1a. Supervisors' autonomous work motivation positively relates to subordinates' perception of transformational leadership.

We also argued there may be parallels between the SDT concept of controlled motivation and transactional leadership. Generally speaking, people whose own motivation is controlled believe that controlling motivating strategies are more effective (Reeve, 2009). For instance, instrumentally motivated supervisors are more likely to see the value in an employee reward system (Barbuto, Fritz, & Marx, 2002). Thus, supervisors driven by controlled motivation are more likely to embrace transactional leadership behaviors and to rely on a reward/punishment system, a notion backed up by Barbuto (2005). Hence, we proposed the following:

Hypothesis 1b. Supervisors' controlled work motivation positively relates to subordinates' perception of transactional leadership.

Lastly, there may be a relationship between SDT's concept of amotivation and passive leadership. According to SDT, people are likely to be amotivated when they lack a sense of competence or a sense of control with respect to a desired outcome (Pelletier, Dion, Tuson, & Green-Demers, 1999). Low competence is linked with and considered a predictor of avoidance orientation and passive leadership (Courtright, Colbert, & Choi, 2014). Therefore, amotivated supervisors may adopt a passive leadership style characterized by withdrawing, delaying decisions, and avoiding attempts to motivate subordinates (Kelloway, Sivanathan, Francis, & Barling, 2005). Therefore, we proposed the following:

Hypothesis 1c. Supervisors' work amotivation positively relates to subordinates' perception of passive-avoidant leadership.

2.4. From supervisors' leadership to subordinates' work motivation

A key process in transformational leadership is the support of value internalization (Bass, 1985). In the workplace, this means subordinates identify with the supervisor's vision and perceive their work as congruent with their own personally held values (Bono & Judge, 2003; Burns, 1978; Shamir et al., 1993). The concept of internalization is at the heart of autonomous motivation.

When transformational supervisors articulate an ideological vision and frame work in terms of commonly endorsed values (*inspirational motivation*), when they empower subordinates to take part in developing a value-laden vision (*idealized influence*), when they consider subordinates' perspectives (individualized consideration), and when they encourage subordinates to find creative solutions (*intellectual stimulation*), they foster internalization and encourage volition and autonomous motivation (Deci, Eghrari, Patrick, & Leone, 1994; Gagne & Deci, 2005; Kanat-Maymon & Reizer, 2017).

In one of the few studies in the work context, Wang and Gagné (2013) found positive relations between supervisors' transformational leadership and subordinates' autonomous motivation in both individualistic and collectivistic samples. In the schooling context, Eyal and Roth (2011) found teachers' perception of the transformational leadership of school principals was associated with their autonomous motivation. Therefore, we formulated the following:

Hypothesis 2a. Supervisors' transformational leadership style positively relates to subordinates' autonomous motivation.

Transactional leadership is based on contingent reinforcement (Bass, 1985), whereby leaders and followers exchange rewards for compliance. According to SDT, then, when employees perceive their behavior as induced by external (supervisory) factors, such as incentives, deadlines, and surveillance, their motivation is controlled and nonvolitional (Deci & Ryan, 2000; Kanat-Maymon, Gottlib, Mor, & Shoshani, 2017). In one example, Eyal and Roth (2011) found that teachers' perception of the school principal's leadership as transactional was associated with their controlled motivations to teach. Therefore, we hypothesized the following:

Hypothesis 2b. Supervisors' transactional leadership style positively relates to subordinates' controlled motivation.

Passive-avoidant leadership is characterized by avoiding decisions, hesitating to act, and being absent when needed. In SDT, when people lack a sense of control or efficacy with respect to a desired outcome, they are considered amotivated, engaging in an activity without a clear reason, and not understanding why (Deci & Ryan, 2000). In the workplace, then, those supervised by a passive-avoidant manager are likely to be amotivated. Accordingly, we proposed the following:

Hypothesis 2c. Supervisors' passive-avoidant leadership style positively relates to subordinates' amotivation.

2.5. From supervisors' work motivation to subordinates' work motivation through leadership behaviors

Following SDT explanations of work motivation, leadership theory, and on the basis of the rationale developed in the previous sections, we expected supervisors' work motivations would be an important constituent of their leadership behaviors (Hypotheses 1a–c). Some literature, albeit scant, links supervisors' leadership styles and subordinates' SDT work motivations (Hypotheses 2a–c). Taken together, we proposed leadership style might, to some extent, mediate the association between supervisors' work motivations and subordinates' work motivations. Specifically, we proposed the following:

Hypothesis 3a. Supervisors' transformational leadership style mediates the association between supervisors' and subordinates' autonomous work motivation.

Hypothesis 3b. Supervisors' transactional leadership style mediates the association between supervisors' and subordinates' controlled work motivation.

Hypothesis 3c. Supervisors' passive-avoidant leadership style mediates the association between supervisors' and subordinates' work amotivation.

3. Method

3.1. Participants and procedure

In 2016, we collected a convenience sample of 431 employees from 3 large Israeli automobile dealership enterprises with countrywide coverage; 305 employees agreed to participate and provided complete surveys (71% response rate). Of these, 61 were team supervisors and 244 were their subordinates; 69% were from sales, 13% from service, 11% from parts, and 10% from security. The average team had 5 members, but totals ranged from 3 to 9. Respondents received an email explaining the study's general purpose; they were told participation was voluntary, and information would remain confidential. Respondents completed the survey through an online platform (Qualtrics), enabling us to match a team supervisor's records with those of his or her subordinates. In the supervisors' sample, 64% were men; ages ranged from 19 to 66, with a mean of 33.34 years (SD = 11.23). Tenure ranged from 1 to 42 years, with a mean of 8.52 (SD = 8.31). In the subordinates' sample, 51% were men; ages ranged from 18 to 61 years, with a mean of 26.98 years (SD = 7.57). Tenure ranged from 1 to 32 years, with a mean of 3.62 (SD = 4.24).

3.2. Instruments

3.2.1. Leadership

To measure supervisors' leadership behaviors, we used the 36-item multifactor leadership questionnaire (MLQ)-Short Form 5X (Bass & Avolio, 1995). Subordinates rated their direct supervisor's behaviors on a 5-point Likert-type scale ranging from 1 (not at all) to 5 (frequently, if not always). The MLQ-5X includes eight 4-item subscales: idealized influence (e.g., "The direct manager talks about his/her most important values and beliefs"), inspirational motivation (e.g., "The direct manager talks optimistically about the future"), intellectual stimulation (e.g., "The direct manager seeks differing perspectives when solving problems"), individualized consideration (e.g., "The direct manager spends time teaching and coaching"), contingent reward (e.g., "The direct manager provides others with assistance in exchange for their efforts"), management by exception-active (e.g., "The direct manager focuses attention on irregularities, mistakes, exceptions, and deviations from standards"), management by exception-passive (e.g., "The direct manager fails to interfere until problems become serious"), and laissez-faire (e.g., "The direct manager avoids getting involved when important issues arise").

We used confirmatory factor analysis (CFA) to determine whether the 8 leadership behaviors subscales converged into Avolio et al. (1999) 3-factor model of transformational (idealized influence, inspirational motivation, intellectual stimulation, and

individualized consideration), transactional (contingent reward and management by exception-active), and passive-avoidant leadership (management by exception-passive and laissez-faire). The CFA model fit the data well, $\chi^2(17) = 56.52$, $p < .001$, CFI = 0.97, TLI = 0.95, RMSEA = 0.08, with significant item loadings ranging from 0.43 to 0.92 ($p < .001$). We used the chi-square difference test to compare the expected 3-factor model to 2 alternative models: the traditional Bass and Avolio (1995) 3-factor model in which MBO-passive loaded on the transactional leadership factor ($\chi2(18) = 193.85$, $p < .001$, CFI = 0.85, TLI = 0.77, RMSEA = 0.20) and a model in which all indicators loaded on a single latent construct ($\chi2(20) = 193.95$, $p < .001$, CFI = 0.84, TLI = 0.80, RMSEA = 0.19). Model comparisons indicated the hypothesized model fit the data significantly better than the alternative 3-factor model ($\Delta\chi^2(1) = 137.33$, $p < .001$) or the 1-factor model ($\Delta\chi^2(3) = 137.43$, $p < .001$). Cronbach's alphas were .94 for transformational leadership, .74 for transactional leadership, and .81 for passive-avoidant leadership.

3.2.2. Work motivation

We measured subordinates' and supervisors' motivations using the Revised Motivation at Work Scale (MAWS-R; Gagné et al., 2010). MAWS-R gives respondents 19 reasons for putting effort into their work. Participants rated items on a Likert-type scale ranging from 1 (not at all for this reason) to 5 (exactly for this reason). These reasons capture the 5 SDT regulations: intrinsic motivation (3 items, e.g., "Because the work I do is interesting," managers' $\alpha = 0.86$, and employees' $\alpha = 0.89$), identified regulation (3 items, e.g., "Because I personally consider it important to put effort in this job," managers' $\alpha = 0.84$, and employees' $\alpha = 0.87$), introjected regulation (4 items, e.g., "Because otherwise I will feel ashamed of myself," managers' $\alpha = 0.78$, and employees' $\alpha = 0.74$), external regulation (6 items, e.g., "Because I risk losing my job if I don't put enough effort in it," managers' $\alpha = 0.87$, and employees' $\alpha = 0.79$), and amotivation (3 items, e.g., "I don't, because I really feel that I'm wasting my time at work," managers' $\alpha = 0.85$, and employees' $\alpha = 0.78$). Consistent with Gagné et al. (2010), CFA supported a second-order factor structure in which the different types of motivation were combined into autonomous (intrinsic and identified), controlled (introjected and external), and amotivation ($\chi2(144) = 345.82$, $p < .001$, CFI = 0.92, TLI = 0.91, and RMSEA = 0.07).

3.2.3. Control variables

We considered supervisors' and subordinates' gender and organizational tenure as possible control variables because research suggests they relate to motivation and leadership (de Poel, Stoker, & Van der Zee, 2014; Eagly, Johannesen-Schmidt, & Van Engen, 2003; Kanat-Maymon & Reizer, 2017).

3.3. Power analysis

To determine the power of a random coefficient multilevel model, we used the PinT V2.1 computer program (Bosker, Snijders, & Guldemond, 2003). Assuming a moderate effect size (0.30 in a correlation metric) and $p < .05$, the estimation of the standard errors yielded a power of 82%. Assuming a power of .80 to be sufficient (Cohen, Cohen, West, & Aiken, 2003), the probability of the null Hypothesis being rejected in the multilevel design, when it was really false was adequate.

3.4. Level of analysis and aggregation tests

Following the advice of Klein et al. (2000), we specify the level of analysis at which we conceptualized the variables and hypotheses. Supervisors' leadership behaviors were indicated by their team members. Although we recognized supervisors might not lead in a completely uniform manner across all subordinates, we were interested in leadership behaviors that supervisors tended to exhibit across subordinates, in other words, leadership as a group phenomenon, not a dyadic one. To support the aggregation of team members' perception of their supervisor's leadership, we calculated within-team agreement and between-team variability using ICC(1), rwg, and the F test of the one-way random ANOVA. ICC1 indicates the proportion of variance in ratings related to team membership and rwg indicates team member agreement (Bliese, 2000). Significant ICC values and rwg with values greater than 0.70 are generally considered the minimum accepted value for aggregation (Klein et al., 2000). All ICC(1) values were statistically significant, and rwg was greater than 0.70 (transformational: ICC[1] = 0.33, $p < .001$, rwg = 0.84; transactional: ICC[1] = 0.13, $p < .01$, rwg = 0.83; and passive-avoidant: ICC[1] = 0.08, $p < .05$, rwg = 0.75). F tests yielded significant differences between teams (transformational: $F(60,183) = 2.89$, $p < .001$; transactional: $F(60,183) = 1.65$, $p < .01$; passive-avoidant: $F(60,183) = 1.44$, $p < .05$). Klein et al. (2000) suggest meeting these criteria is sufficient for aggregation (see Bliese, 2000, for a similar approach). Thus, the results supported the decision to aggregate subordinates' ratings of leadership behaviors to the supervisors' level.

For Hypotheses 1a–1c, we collected data on supervisors' motivations and leadership behaviors from different reporters (supervisors reported their work motivation and subordinates reported supervisors' leadership styles). A benefit of this approach is its ability to minimize common method bias (Podsakoff, MacKenzie, & Podsakoff, 2012). For Hypotheses 2a–2c, we represented supervisors' leadership at a higher level and subordinates' motivation at a lower level.

3.5. Analytical strategy

Subordinates were nested within teams, and data were measured at different levels of the workplace hierarchy. Specifically, we assessed supervisors' work motivations and their perceived leadership behaviors (mean aggregated scores) at the team level (i.e., level 2) and subordinates' work motivations at the individual level (i.e., level 1). Because of the nested data structure, we followed Zhang, Zyphur, and Preacher's (2009) procedure and used the 2-2-1 mediation model (predictors and mediators at level 2 and dependent variables at level 1). In this procedure, the relations between the predictors and mediators (Hypotheses 1a–c; the a-paths) are estimated using OLS regression, and relations between the mediators and outcomes (Hypotheses 2a–c; the b-paths) are estimated using multilevel modeling (i.e., random coefficient modeling).

To test for the significance of the mediation effects (Hypotheses 3a–c), we followed MacKinnon et al. (2002) recommendation and calculated a Monte Carlo simulation with 5000 replications to estimate the 95% bias-corrected and accelerated confidence interval (CI) of the indirect effects of supervisors' motivations on subordinates' motivations through leadership style. When the value zero is not included in the 95% CI, the mediation effect is considered significant at $\alpha < 0.05$. We analyzed the data using IBM SPSS v25 with all independent variables and mediators entered simultaneously, so their covariances were partialed out.

4. Results

4.1. Descriptive statistics

Table 1 presents the descriptive statistics and the correlations of the research variables. We point to three noteworthy results. First,

Table 1
Supervisors' and subordinates' descriptive statistics and correlations.

	M	SD	1	2	3	4	5	6	7	8	9
1. Supervisor's autonomous motivation	4.54	.47									
2. Supervisor's controlled motivation	3.24	.72	.22								
3. Supervisor's amotivation	1.45	.81	-.29*	.02							
4. Transformational leadership	4.08	.49	.39**	.20	-.14						
5. Transactional leadership	3.75	.38	.31*	.38**	-.13	.61***					
6. Passive-avoidant leadership	2.19	.45	-.38**	-.14	.44***	-.42**	-.21				
7. Subordinate's autonomous motivation	4.20	.72	.25***	.02	-.13	.35***	.28***	-.17*			
8. Subordinate's controlled motivation	3.45	.75	.14	.21**	-.03	.16*	.27***	-.09	.32***		
9. Subordinate's amotivation	1.61	.88	-.09	-.05	.14*	-.08	.01	.29***	-.35***	.07	
10. Tenure	–	–	-.09	.19	-.16	-.09	.05	-.10	-.21**	-.02	.15*
11. Gender	–	–	-.08	-.18	.20	.09	-.01	.28*	-.01	-.02	.15*

Note: Gender: 0 = male, 1 = female. Variables 1 through 6 are supervisor-level variables (Level 2; $n = 61$). Variables 7 through 9 are subordinate-level variables (level 1; $n = 244$). Cross-level correlations (variables 1–6 with variables 7–9) are standardized multilevel correlations. For supervisor-level variables, gender and tenure are based on supervisors' data; for subordinate-level variables, gender, and tenure are based on subordinates' data. $^{*}p < .05$, $^{**}p < .01$, and $^{***}p < .001$.

as expected, supervisors' work motivations were mostly linked with the hypothesized leadership behaviors. Supervisors' autonomous motivation was linked with transformational leadership, controlled motivation with transactional leadership, and amotivation with passive-avoidant leadership. Second, as hypothesized, supervisors' leadership behaviors were linked with subordinates' work motivations. Supervisors' transformational leadership was mostly linked with subordinates' autonomous motivation, transactional leadership with controlled motivation, and passive-avoidant leadership with amotivation. Third, the multilevel coefficients indicated supervisors' motivation orientations matched those of their subordinates: supervisors' autonomous motivation, controlled motivation, and amotivation were linked with the same motivations in their subordinates. None of the demographic variables was significantly correlated with either the predictors or the outcomes, and the pattern of the results remained virtually unchanged when we included or excluded all of the control variables. Hence, we did not incorporate these variables, when testing the study's hypotheses.

4.2. Test of hypotheses 1a–1c

The first research Hypothesis predicted supervisors' motivations would be linked with their perceived leadership behaviors. Table 2 presents the OLS coefficients of supervisors' motivations as predictors of their leadership. As the table shows, autonomous work motivation was linked with transformational leadership (Hypothesis 1a), controlled work motivation with transactional leadership (Hypothesis 1b), and amotivation with passive-avoidant leadership (Hypothesis 1c).

4.3. Test of hypotheses 2a–2c

To test Hypotheses 2a–2c on the link between supervisors' leadership style and subordinates' work motivation, we conducted a multilevel analysis (random coefficient modeling). We examined leadership behaviors at level 2 of the equations as predictors of subordinates' motivations at level 1. As part of the hypothesized mediation model, we controlled for supervisors' motivations. As Table 3 shows, supervisors' transformational leadership was positively linked with subordinates' autonomous motivation (Hypothesis 2a), supervisors' transactional leadership was positively linked with subordinates' controlled motivation (Hypothesis 2b), and supervisors' passive-avoidant leadership was linked with subordinates' amotivation (Hypothesis 2c).

4.4. Test of hypotheses 3a–3c

To test Hypotheses 3a–3c on the mediation effects of supervisors' leadership styles in the associations between supervisors' and subordinates' motivations, we conducted a 2-2-1 mediation analysis (Zhang, Zyphur, & Preacher, 2009). We estimated the significance of the indirect effects using a 95% CI of 5000 Monte Carlo simulation replications (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). The results are presented in Fig. 1. As the figure shows, the estimate of the indirect effect of supervisors' autonomous motivation on subordinates' autonomous motivation through supervisors' transformational leadership was .178, and the bias-corrected 95% CI did not include zero (0.038, 0.370), thus supporting Hypothesis 3a. We ran similar analyses for Hypothesis 3b's argument that supervisors' transactional leadership mediates the link between supervisors' and subordinates' controlled motivation. The analysis supported Hypothesis 3b and yielded an indirect effect of 0.077, with 95% CI that did not include zero (0.007, 0.178). In our results for Hypothesis 3c, the indirect effect was 0.100, with 95% CI that did not include zero (0.024, 0.202), suggesting that, as hypothesized, supervisors' passive-avoidant leadership significantly mediated the association between supervisors' and subordinates' amotivation.

As Fig. 1 shows, supervisors' controlled motivation was directly associated with subordinates' controlled motivation, but this link was not accounted for by supervisors' use of a transactional

Table 2
Supervisors' motivations as predictors of supervisors' leadership style: OLS coefficients.

	Transformational leadership			Transactional leadership			Passive-avoidant leadership		
	B	SE	β	B	SE	β	B	SE	β
Supervisor's autonomous motivation	.37**	.13	.36	.18	.10	.21	-.24*	.12	-.25
Supervisor's controlled motivation	.08	.08	.12	.18**	.06	.33	-.06	.07	-.09
Supervisor's amotivation	-.02	.06	-.04	-.03	.05	-.08	.17**	.06	.37

Note: $^{*}p < .05$, $^{**}p < .01$.

Table 3
Supervisors' motivations and leadership style as predictors of subordinates' motivations: Multilevel modeling coefficients.

	Subordinates' autonomous motivation			Subordinates' controlled motivation			Subordinates' amotivation		
	B	SE	β	B	SE	β	B	SE	β
Intercept	4.19***	.04	–	3.45***	.05	–	1.60***	.05	–
Transformational leadership	.48**	.15	.33	-.09	.18	-.05	-.06	.19	-.05
Transactional leadership	-.01	.18	-.03	.43*	.19	.21	.27	.23	.10
Passive-avoidant leadership	.12	.13	.05	.01	.12	.01	.59***	.16	.28
Supervisor's autonomous motivation	.16	.10	.08	.06	.12	.01	.04	.13	.06
Supervisor's controlled motivation	.05	.06	.05	.22***	.06	.28	-.04	.08	-.08
Supervisor's amotivation	-.09	.05	-.14	-.04	.04	-.08	.04	.06	.10

Note: M. = manager.
*$p < .05$, **$p < .01$, ***$p < .001$.

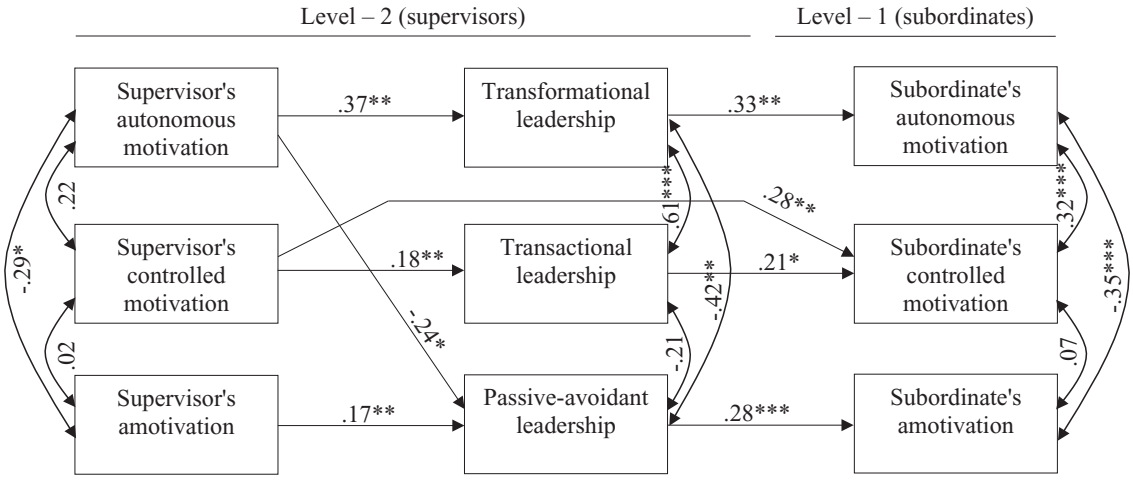

Fig. 1. Supervisors' motivation to subordinates' motivation through leadership style: Standardized coefficients
Note: Only significant paths are presented. Path coefficients are standardized approximations.*p < .05, **p < .01.

leadership style. Furthermore, supervisors' autonomous motivation was indirectly linked with subordinates' amotivation through the reduction of supervisors' passive-avoidant behaviors (indirect effect = −.142, 95% CI = −0.325, −0.002).

5. Discussion

The aim of this study was to contribute to the literature on motivation and leadership by integrating the FRLT (Bass, 1985) with SDT's motivation framework (Deci & Ryan, 2000), and to examine how supervisors' work motivations could be considered antecedents of their leadership behaviors, and how this, in turn, might be reflected in subordinates' work motivations. The empirical findings supported our theoretical model and revealed that first, supervisors' autonomous motivation was linked with subordinates' perception that they were led through transformational behavior. This transformational leadership was associated, in turn, with subordinates' autonomous motivation. Second, we found supervisors' controlled work motivation was linked with subordinates' perceptions of a transactional leadership approach, and this, in turn, was reflected in subordinates' controlled work motivation. Third, we found a link between the least effective motivation and the least effective leadership style. Specifically, supervisors' amotivation was associated with subordinates' perception of passive-avoidant leadership and this, in turn, was associated with subordinates' amotivation. Finally, we discovered a negative path between supervisors' autonomous motivation and subordinates' amotivation through supervisors' use of a passive-avoidant style of leadership. The theoretical and practical implications of these findings are discussed below.

5.1. Theoretical implications

The results contribute to the literature on leadership and SDT in several important ways. First, they answer a call by Bommer, Rubin, and Baldwin (2004) for research into the genesis of leadership styles. Though based on cross-sectional data, our work sheds welcome light on the natural dynamics of how supervisors' work motivation may be transposed into their leadership behaviors (Barbuto et al., 2002). The findings suggest supervisors' engagement in transformational, transactional, or passive-avoidant leadership behaviors depends, to some extent, on their reasons for performing their roles. These findings extend previous research on motivational orientations as antecedents of leadership. In their work, Chan and Drasgow (2001) suggested a leadership-specific type of motivation – the motivation to lead – in a bid to clarify the motivational processes underlying leadership processes. This and other work has shown that motivation to lead can predict leadership effectiveness, but not leadership style. In their theoretical review, Kark and Van Dijk (2007) proposed using regulatory focus, which is a more distal or less leadership-specific concept, as a potential motivational orientation underlying transformational and transactional leadership, but this model has not been empirically tested. Indirect empirical support for work motivation as an

antecedent to leadership is found in Roth et al. (2007) research on teachers; they showed that autonomously motivated teachers tended to use more transformational-like behaviors with their students.

Our work contributes to and extends this literature by providing a theoretical rationale and empirical support for the motivation-leadership link. By mapping the associations between the various types of SDT work motivations and the three major leadership styles proposed by the FRLT, we have created a more comprehensive framework within which to analyze work motivation as an antecedent of leadership. We assert that the *why* or the reasons for engaging in one's work are reflected in the way one communicates with, directs, and guides others. Supervisors who engage in their work out of interest or a sense of personal significance are perceived by their subordinates as inspiring leaders who stimulate interest. Meanwhile, supervisors with an exchange perspective or an if-then contingency perspective toward their jobs tend to stress the contingency of rewards and sanctions on performance. Lastly, supervisors who lack clear purpose or awareness of the reasons for engaging in their work, use a passive and disorganized approach to leadership.

Second, the findings support leadership research on employees' motivational outcomes. Previous research has mostly documented the motivational outcomes of transformational leadership, with less attention to transactional leadership and even less to passive-avoidant leadership (Eyal & Roth, 2011). Our findings indicate that different leadership behaviors shape unique qualities of motivation; we extend the literature by identifying the elicited motivational processes for all three FRLT styles. Our finding of an association between supervisors' transformational leadership and subordinates' autonomous motivation replicates previous research (Eyal & Roth, 2011; Wang & Gagné, 2013). However, by using multilevel modeling, we were able to overcome some methodological biases, such as common method (Podsakoff et al., 2012) and observation nonindependence (Zhang et al., 2009), rarely accounted for in other work on this issue. The association between transformational leadership and subordinates' autonomous motivation has attracted attention, but empirical findings on the association between transactional leadership and subordinates' controlled motivation are scant. To the best of our knowledge, only one study has examined this potential link. Eyal and Roth (2011) found that among teachers, perceptions of principals' transactional leadership was associated with teachers' controlled motivation. We have extended this finding into the sales sector, but more research is needed in various occupational domains before clear conclusions can be drawn. The association between supervisors' passive-avoidant leadership style and subordinates' motivation is by far the least studied. This is surprising, as passive-avoidant leadership has the most disruptive potential (Dumdum et al., 2013; Hinkin & Schriesheim, 2008). Our findings suggest that passive-avoidant leadership behaviors are likely to result in subordinates' amotivation. This type of motivation, or more precisely, the lack of employee engagement, can explain some of the destructive outcomes associated with the passive-avoidant leadership style.

Third, the findings contribute to the research on supervisor-subordinate congruence (Kristof, Zimmerman, & Johnson, 2005). Researchers have found congruence between supervisors' motivation and their subordinates' motivation (Deci et al., 2001). One explanation for this congruence is that supervisors' own motivation may manifest itself in the way they lead their subordinates and, in turn, leadership styles shape subordinates' motivation in such a way that they echo their supervisors' motivational orientations. Thus, congruence may result from the flow of work motivation down the organizational hierarchy through leadership styles.

5.2. Practical implications

The findings have implications for practice as well. First, they demonstrate the importance of supervisors' work motivation as a potential determinant of their leadership and of their subordinates' motivation. Given the clear linkages, it makes sense to consider how contextual factors could affect supervisors' sense of autonomy in the workplace and, thus, lead to important outcomes for subordinates. As previous attempts to nurture autonomous motivation in work organizations have been successful (Hardré & Reeve, 2009), our work may be relevant for those in charge of training and personnel development. Shifting supervisors' work motivations toward autonomy may consequently shift their leadership style toward a transformational one, at least to some degree.

Second, mapping the interplay between motivation and leadership along the entire organizational hierarchy can shed light on organizational effectiveness and may serve as a diagnostic tool to locate where the leadership-motivation link weakens or shifts from one style to another. For instance, higher hierarchical levels seem to provide a generally more favorable context for transformational leadership than lower levels (Bruch & Walter, 2007). To the extent that the restricted job autonomy of lower level managers constrains their ability to present transformational behaviors, identifying these managerial levels could be the focus for intervention.

Third, the findings may be relevant for recruitment. If transformational leadership is sought by organizations, some motivational profiling may be relevant in selection processes, especially the selection of those who lead, as their impact on others is widespread. Individuals who possess the relevant knowledge, skills, and abilities for the role and are autonomously motivated may be the best choice (Morgan, 2014).

5.3. Limitations and future research

Our findings should be interpreted in light of some limitations. First, a cross-sectional design precludes causal conclusions and raises the possibility of alternative interpretations, such as whether an unidentified variable could explain our findings. For instance, subordinates' affect can impact autonomous motivation (Vandercammen, Hofmans, & Theuns, 2014) and the measurement of the MLQ and its relations with organizational outcomes (Brown & Keeping, 2005). Future longitudinal research is required to alleviate these concerns.

Second, like other research on FRLT, we took a leader-centric approach and viewed subordinates' motivations as reactions to supervisors' behaviors. Other approaches see leadership as follower-centric or as co-constructed by leaders and followers (Uhl-Bien, Riggio, Lowe, & Carsten, 2014). Longitudinal studies could shed more light on the complex, direct, and reciprocal relations between leadership and motivation across the organizational hierarchy. For instance, the extent to which supervisors' leadership style is driven by subordinates' motivations or the match between supervisors' and subordinates' motivations is an interesting avenue for future research.

Third, the conceptual and factor structure basis of the original version of the MLQ has been questioned (Avolio et al., 1999), with recent research identifying refined leadership behaviors not fully reflected in the MLQ (Antonakis & House, 2014). Our findings are limited to the more traditional conceptualization of the MLQ. Fourth, data were restricted to automobile dealership enterprises, and the sample size was not large, which further limited generalizability.

Fifth, the leadership-motivation links found here would be better understood if future research were to expand these links to include other theoretical perspectives, for instance, using other

leadership frameworks, such as leader-member exchange. To the extent that work motivation naturally shapes leadership, it would be interesting to probe how supervisors' motivation and subordinates' motivation join to create specific leadership behaviors.

5.4. Conclusion

We drew on SDT and FRLT to yield insights into the full course of motivation in the leadership process. Our findings demonstrate certain types of supervisors' work motivations that are linked with specific styles of leadership, and these, in turn, are associated with subordinates' work motivations. We believe this fine-grained approach to the links between the two giant theoretical perspectives offers important directions for future research and provides useful insights for practitioners seeking to increase the quality of workplace motivation.

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