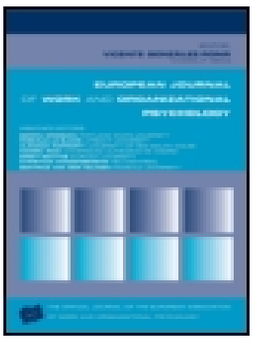

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European Journal of Work and Organizational Psychology

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/pewo20

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To cite this article: Jesus Mascareño, Eric F. Rietzschel & Barbara Wisse (2021): Ambidextrous leadership: opening and closing leader behaviours to facilitate idea generation, idea promotion and idea realization, European Journal of Work and Organizational Psychology, DOI: 10.1080/1359432X.2021.1872544

To link to this article: https://doi.org/10.1080/1359432X.2021.1872544

Published online: 17 Jan 2021.

EUROPEAN JOURNAL OF WORK AND ORGANIZATIONAL PSYCHOLOGY
https://doi.org/10.1080/1359432X.2021.1872544

Ambidextrous leadership: opening and closing leader behaviours to facilitate idea generation, idea promotion and idea realization

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ABSTRACT

The generation of ideas and the subsequent promotion and implementation of these ideas are important for organizational performance. Unfortunately, however, ideas do not always turn into innovations. Based on the ambidexterity theory of leadership for innovation, we argue that both employee idea generation and the relationship between idea generation on the one hand and idea promotion and idea realization on the other, could benefit from leaders who display both opening (fostering exploration) and closing behaviours (fostering exploitation). Results based on dyadic data (N = 201 dyads) partly supported our hypotheses, showing that opening leader behaviours were positively related to idea generation and subsequently to idea promotion and idea realization, and that closing leader behaviours strengthened the relationship between idea generation and idea realization (but not the relationship between idea generation and idea promotion). We discuss how our research contributes to knowledge about ambidextrous leadership and the relationship between idea generation and innovation.

ARTICLE HISTORY
Received 6 August 2019
Accepted 2 January 2021

KEYWORDS
Ambidextrous leadership; creativity; innovation; leadership

Innovation is recognized as an important determinant of competitive advantage, success, and the longer-term survival of organizations (Anderson et al., 2014; Zhou & Shalley, 2003). Employees and organizations must produce new and useful ideas (Amabile, 1996; West, 2002) and successfully promote and implement these ideas (Amabile, 1996; Hughes et al., 2018; West, 2002) for the organization to function effectively (Amabile, 1988). However, the relationship between idea generation and the later stages of innovation is complicated. Several scholars have found that the generation of ideas does not necessarily result in their implementation (Škerlavaj et al., 2014; Sohn & Jung, 2010; Somech & Drach-Zahavy, 2013) and that it is not always the best ideas that get selected for implementation (Rietzschel et al., 2006, 2010). In fact, idea generation has even been found to sometimes impede the later stages of innovation (Baer, 2012; Škerlavaj et al., 2014). As such, idea generation is by no means a guarantee for innovation. Therefore, knowledge about how to foster idea generation and about how to strengthen the relationship between idea generation and subsequent stages of the innovative process is both needed and important.

Leadership has been proposed as a critical factor in stimulating innovation (Anderson et al., 2014; Shalley & Gilson, 2004; Tierney, 2008). However, we still lack insight into which specific behaviours leaders can display to influence idea generation, idea promotion and idea implementation. For that purpose, Rosing et al. (2011) proposed an ambidexterity theory of leadership for innovation. This theory posits that leaders should be flexible in displaying both opening and closing leader behaviours (increasing or decreasing variance in employee behaviour respectively) in order to stimulate innovation (Rosing et al., 2011). Indeed, several studies successfully linked ambidextrous leadership to innovation (e.g., Rosing & Zacher, 2017; Zacher & Rosing, 2015). Although these findings are promising and clearly testify to the value of the ambidexterity theory of leadership, the research has some potential limitations. For instance, this research has focused on innovation as a unitary construct (i.e., encompassing the whole process from idea generation to idea implementation) and did not differentiate specifically between its different facets or stages. However, the latter is relevant as problems often arise in the transition from idea generation to idea implementation. Moreover, little attention has been paid to the interplay between leader opening and closing behaviours, even though it is important to understand when these behaviours are most likely to generate a positive impact in the innovation process. Finally, research on ambidextrous leadership is usually based on self-report measures and these may be prone to bias (Donaldson & Grant-Vallone, 2002).

With the present study, we take note of these issues and aim to contribute to the literature in several ways. First, we aim to create more insight into the leadership-innovation relationship by explicitly differentiating between idea generation, idea promotion and idea realization, because leader behaviours may be differently related to each of these facets of the innovative process. Second, we examine if opening leader behaviours predict idea promotion and idea realization indirectly through idea generation, and if this relationship is strengthened by closing leadership behaviours (see Figure 1). By doing so, we hope to contribute to the development of more fine-grained

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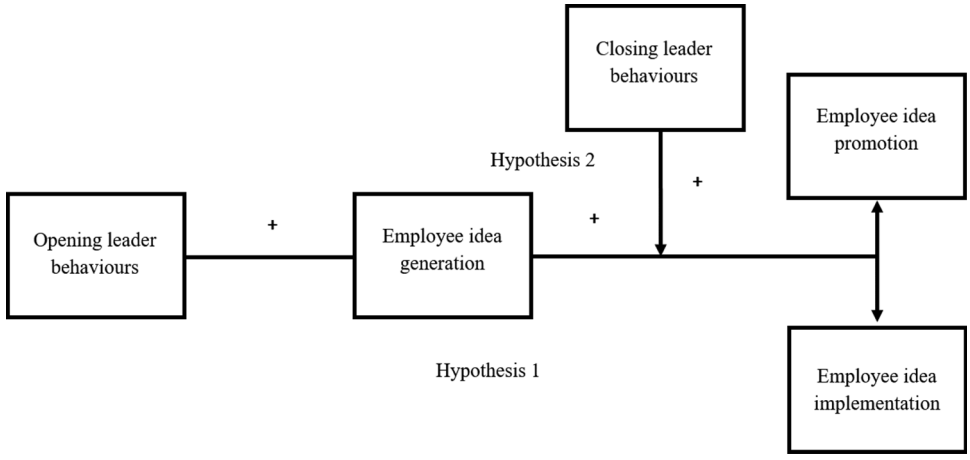

Figure 1. Conceptual model and hypotheses.

knowledge of the interplay between leader opening and closing behaviours. Third, our work is also a response to the call from Zacher and Wilden (2014) to assess ambidextrous leadership using data from different sources, and to not rely solely on the leader's own appraisal.

Idea generation and the later stages of innovation

Different models of the innovation process have been proposed, but all of these distinguish between different stages or facets of the creative process, moving from early, front-end stages (where ideas get generated) to later stages where ideas get refined, communicated, and implemented (e.g., Bledow et al., 2009; Hughes et al., 2018; West, 2002). In this study, we build on a model of innovative job performance proposed by Kanter (1988), Scott and Bruce (1994), and Janssen (2001), distinguishing between three stages of employee innovative performance: idea generation, idea promotion, and idea realization (or implementation). Although these stages are closely related, they are not the same. Idea generation, also often referred to as creativity, concerns the production of novel and useful ideas (Amabile et al., 1996; Janssen, 2001; De Jong & Den Hartog, 2010; Perry-Smith & Mannucci, 2017). Idea generation can be done by individuals or groups, and strongly relies on factors like openness and cognitive flexibility (see Perry-Smith & Mannucci, 2017 for a review and integrative model). Idea promotion involves social activities to gain support of relevant decision makers within an organization who can help move the generated ideas forward. As such, the promotion of ideas is more interpersonally and politically oriented than idea generation, requiring networking skills, social influence and legitimacy (Baer, 2012; Perry-Smith & Mannucci, 2017). Idea realization, finally, is the actual implementation of an idea, such as the production of a product or prototype, or the adoption of a new procedure or technology (Janssen, 2001; De Jong & Den Hartog, 2010; Perry-Smith & Mannucci, 2017). Realizing or implementing ideas requires that an idea gets "blueprinted," turning it from a tentative notion into something more tangible. This more tangible idea in turn needs to be accepted and adopted by the organization.

These different stages or facets of the innovative process are, of course, closely interdependent: Creative ideas are of little use to organizations if they are not implemented (Levitt, 1963), and innovation by definition depends on the availability of creative ideas (Amabile & Conti, 1999). However, it is useful to distinguish them from each other, because their interrelation is complicated and contingent upon several other factors. For example, idea generation and idea promotion and idea realization are not predicted by the same variables and may not even necessarily be correlated (e.g., Somech & Drach-Zahavy, 2013). In fact, high levels of idea generation may – depending on other individual and contextual factors – actually result in low levels of subsequent implementation (Baer, 2012; Škerlavaj et al., 2014). Further, idea generation, idea promotion, and idea realization require different behaviours, skills, and environmental characteristics (Perry-Smith & Mannucci, 2017; West, 2002), with idea generation benefiting primarily from strong intrinsic motivation, cognitive flexibility, and a lack of external pressures, and idea promotion and realization benefiting more from extrinsic considerations, focused effort, planning and control, and strong external demands (see e.g., Amabile, 1988, 1996; Janssen, 2001; Mainemelis, 2010; Perry-Smith & Mannucci, 2017; Škerlavaj et al., 2014; Staw, 1990; West, 2002; also see Byron & Khazanchi, 2012, for a meta-analysis). Not surprisingly, then, the conversion of ideas into actual innovations is considered the biggest challenge of innovation management (Baer, 2012; Rietzschel et al., 2019; Rietzschel & Ritter, 2018).

The question as to what leaders can do to stimulate the innovation process has received a lot of attention and the number of studies assessing the effect of leadership on innovation is increasing (see Hughes et al., 2018; Koh et al., 2019; Rosing et al., 2011; Wang et al., 2011). However, the majority of these studies focus on broad leadership constructs (like transactional leadership, initiating structure or consideration) and find that they have a different relationship with idea generation than with the subsequent innovation activities, suggesting that these leadership styles may be too broad in nature to foster generation of ideas by employees as well as the promotion and implementation of these ideas (Hughes et al., 2018; Rosing et al., 2011). Moreover, these studies do not provide information about the specific leadership behaviours needed to foster idea generation, idea promotion and idea implementation (Hughes et al., 2018).

Thus, although the importance of leadership for innovation is widely acknowledged (e.g., Anderson et al., 2014; Shalley & Gilson, 2004; Tierney, 2008), much remains unclear about what leaders can do to influence the innovative process (see Anderson et al., 2014).

Given that idea generation and the subsequent promotion and implementation of ideas differ substantially from each other, and given that each factor is associated with its own set of behaviours, skills, antecedents and contextual requirements, a leadership theory that is able to deal with these complexities is needed. The ambidexterity theory of leadership (Rosing et al., 2011) seems to be a particularly promising starting point.

Ambidextrous leadership

March (1991), often cited as the catalyst for the current interest in the concept of ambidexterity, proposes that firms need to divide their attention and resources between two fundamentally different activities: exploitation and exploration. Exploitation is associated with activities such as execution and implementation, while exploration is related to activities that focus on bringing about variation, experimentation, and discovery. Levinthal and March (1993) argue that long-term survival and success depend on an organization's ability to balance actions focused on exploration and exploitation. Although exploration and exploitation are both fundamental activities inherent to creativity and innovation (Rosing et al., 2011), they may require fundamentally different organizational strategies, contexts and – important to the present discussion – leader behaviours.

Ambidextrous leadership can be defined as "the ability to foster both explorative and exploitative behaviours in followers by increasing or reducing variance in their behaviour and flexibly switching between those behaviours" (Rosing et al., 2011, p. 957). Ambidextrous leadership therefore comprises three components: opening leadership behaviours, closing leadership behaviours, and temporal flexibility (Rosing et al., 2011; Zacher & Rosing, 2015). Opening leader behaviours are those behaviours that increase variance in follower behaviours by encouraging them to experiment and to take risks (therefore giving followers room for independent thinking and acting) and by supporting followers' attempts to challenge established routines and approaches. In other words, leaders' opening behaviours stimulate followers' explorative behaviours (Rosing et al., 2011). Closing leadership behaviours, in contrast, reduce variance in follower behaviours by taking corrective actions, sanctioning errors, setting specific guidelines, and monitoring goal achievement. Thus, closing behaviours stimulate followers' exploitative behaviours (Rosing et al., 2011). Temporal flexibility, finally, refers to the leader's ability to switch between opening and closing leader behaviours as the situation demands (Rosing et al., 2011).

Theoretically, opening and closing behaviours map closely onto the different kinds of behaviours and contexts required for the different facets of innovation. Thus, because successful innovation requires both the generation and the subsequent promotion and implementation of these ideas, ambidextrous leadership theory states that opening and closing leader behaviours moderate each other's effects on innovation, such that innovative performance is highest when both opening and closing leader behaviours are high. Thus, leaders who have the ability to display both high opening and closing leader behaviours should be more successful in promoting innovation than those who only display one type of leadership style (Zacher & Rosing, 2015). Empirical studies have indeed shown that the interaction between opening and closing leader behaviour predicts innovation. For example, Zacher and Rosing (2015) carried out a multi-source field study among leaders and their subordinates in architectural and design firms, and found that the interaction between opening and closing leader behaviours predicted team innovation, such that team innovation was highest when both opening and closing leader behaviours were high. These results have also been found at the employee level. For example, in a diary study, Zacher and Wilden (2014) found that daily self-reported innovative performance of employees was highest when both daily opening and closing leader behaviours were perceived to be high. Studies have also found that opening and closing leader behaviours predict innovation by promoting opening and closing employee behaviours. For example, in a survey study amongst employees, Zacher et al. (2016) found that the extent to which employees perceived opening and closing leader behaviours predicted self-reported opening and closing employee behaviours respectively, and that the interaction of opening and closing behaviours predicted employee innovative performance. In a more recent longitudinal study, Gerlach, Hundeling et al. (2020) found that innovative performance was positively predicted by both opening and closing behaviours (but not their interaction). Thus, there appears to be considerable empirical support for the main tenet of ambidextrous leadership theory.

Ambidextrous leadership, idea generation and the later stages of innovation

Interestingly, however, although ambidextrous leadership theory explicitly takes the multidimensional nature of work performance and its requirements as its starting point, research on ambidextrous leadership and innovation thus far has focused on innovative performance as a single unitary variable, mostly combining the different facets or stages of the innovative process into one construct. Yet, we believe that a more fine-grained picture can be obtained by differentiating between idea generation on the one hand, and idea promotion and idea realization on the other. We argue that the interaction between opening leader behaviours and closing leader behaviours may indeed predict innovation, but at the same time propose that opening leader behaviours will be particularly relevant for idea generation and that closing leader behaviours will be particularly relevant for making sure those ideas are subsequently promoted and realized. In other words, we expect that opening leader behaviours will be positively related to employee innovation (idea realization and promotion) by stimulating employee idea generation, and that closing leader behaviours will help employees to successfully promote and implement the creative ideas they generated. This, as we argue below, flows directly from the tenets of the ambidextrous leadership theory, but has not been tested in previous research.

A recent study that offers some support of our ideas is an experimental study by Gerlach, Heinigk et al. (2020), who found that participants' task performance was positively predicted by opening behaviours when creativity was required, and positively predicted by closing behaviours when implementation was required. However, performance in this study was measured on different tasks and not in an organizational setting. Thus, rather than focusing on the interaction between opening and closing behaviours per se (or on the way they predict performance on separate tasks), we address the way in which closing behaviours moderate the indirect effects of opening behaviours on idea promotion and realization through idea generation in an organizational context.

We expect that opening leadership behaviours will be positively related to idea promotion and idea implementation through idea generation for several reasons. First, ambidextrous leadership theory suggests that opening leadership behaviours encourage employees' explorative behaviours, which are mostly needed in creative endeavours (Rosing et al., 2011). Second, opening leader behaviours feed into contextual variables that foster idea generation, such as safety, autonomy, support and a positive climate (e.g., N. Anderson & King, 1991; Hülsheger et al., 2009; Shalley & Zhou, 2008). Thus, when leaders display opening behaviours, they contribute to a context that is beneficial for employees to generate ideas. These generated ideas can then serve as input for the subsequent innovation activities (Axtell et al., 2000).

We also expect that the link between idea generation and idea promotion and idea implementation will be stronger to the extent that employees are exposed to closing leader behaviours, as these are beneficial during the promotion and implementation of ideas they have generated. In contrast to opening leader behaviours, closing leader behaviours are more strongly related to the later stages of innovation activities. Promotion and implementation require more structure than idea generation, because here employees need to critically asses ideas (Amabile et al., 1996), to plan and monitor their work behaviours, and to promote, revise, and successfully disseminate their ideas (Škerlavaj et al., 2014). In contrast to idea generation, the promotion and implementation of ideas requires social influence, execution competencies, legitimacy, and a realizing a vision that is shared (Perry-Smith & Mannucci, 2017) – all of which are more likely to result from leaders' closing than opening behaviours. While generating new ideas can often be done with relatively little costs, innovation requires actual resources (time, money) to be allocated to the most promising ideas, which necessitates careful planning and decision-making. Moreover, different stakeholders (e.g., other departments involved in implementation) need to align their vision and goals, which requires leaders to reduce variance and to set clear goals and boundaries. Therefore, the path from opening leader behaviours, via idea generation, to idea promotion and idea implementation should benefit from leadership behaviours that streamline creative ideas towards their realization (Rosing et al., 2011). Indeed, evidence shows that innovation, at the later stages, benefits significantly from a leadership style that is focused on effectiveness, structure, routines and improving processes (N. Anderson & King, 1991; Keller, 2006; N. R. Anderson & King, 1993). Taken together, then, we expect a moderated mediation, such that the relation between leader opening behaviours on employee idea promotion and idea implementation through employee idea generation will be particularly strong when leader closing behaviours are high. Figure 1 shows the conceptual model of our study.

Hypothesis 1: Employee idea generation mediates the positive relationships between open leadership behaviours and (a) employee idea promotion and (b) employee idea implementation.

Hypothesis 2: Closing leadership behaviours moderate the strength of the indirect relationships between opening leaders behaviours and (a) employee idea promotion and (b) employee idea implementation via employee idea generation, such that the indirect relationships are stronger when closing behaviours are high.

Method

Participants and design

A total of 9,374 leaders (26.4% response rate) and 492 subordinates (42.3% response rate) participated in the survey. This generated an initial sample of 208 dyads, but seven dyads were not included in the analyses because of poor response quality such as straight-lining and extremely short response times (Greszki et al., 2015; Krosnick & Alwin, 1987). The final sample, therefore, consisted of 201 leader-subordinate dyads who participated in an online survey. In all cases, the leader was a senior/middle level manager and the follower a direct subordinate. Supervisors (37.3% female) had a mean age of 45.05 years (SD = 12.05) and their subordinates (47% female) had a mean age of 40.77 years (SD = 11.66). Supervisors' organizational tenure was 13.85 years (SD = 10.04), and subordinates' tenure was 8.88 years (SD = 7.65). Of the supervisors, 53% had obtained a higher education degree (Bachelor degree or higher) as compared to 37% of the subordinates. The majority of respondents worked in health and welfare (14.9%), wholesale and retail (10.4%) or industry (10.4%). Supervisors and subordinates had, on average, been in this specific hierarchical relationship for 3.95 years (SD = 1.01).

Procedure

The supervisors and subordinates were recruited using the services of a Dutch agency that recruits samples of the Dutch population for research purposes. Respondents for the leader and the subordinated questionnaire were invited to take part in the questionnaire by email and asked to participate on a voluntarily basis. Respondents read a brief description of the survey, were informed that their responses would be treated confidentially, gave their informed consent, and answered some questions that served as demographic variables. After the data collection was complete, respondents were debriefed. The leaders who filled in the questionnaire received points that could be collected and ultimately swapped for gift coupons. Among all the subordinates that filled in the questionnaire completely ten gift vouchers were raffled.

Measures

Opening leader behaviours

Opening leader behaviours were measured with the seven-item opening behaviours subscale from Zacher and Wilden (2014) ambidextrous leadership scale. Subordinates were asked to fill out a questionnaire to assess how often their supervisors displayed opening behaviours. Items included "My supervisor encourages experimentation with different ideas" and "My supervisor allows different ways of accomplishing a task." The items were answered on a 7-point scale ranging from 1 (not at all) to 7 (frequently, if not always). Cronbach's alpha for this scale was .90.

Closing leader behaviours

Closing leader behaviours were measured with the seven-item closing behaviours subscale from Zacher and Wilden (2014) ambidextrous leadership scale. Subordinates were asked to fill out a questionnaire to assess how often their supervisors displayed closing behaviours. Items included "My supervisor sticks to plans" and "My supervisor pays attention to uniform task accomplishment." The items were answered on a 7-point scale ranging from 1 (not at all) to 7 (frequently, if not always). Cronbach's alpha for this scale was .81.

Idea generation

Employee idea generation was assessed with the corresponding three-item subscale from Janssen's (2001) innovative work performance scale. Supervisors were asked how often their employees displayed creative behaviours. Items included "My employee creates new ideas for improvements" and "My employee generates original solutions for problems." The items were answered on a 7-point scale ranging from 1 (never) to 7 (always). Cronbach's alpha for this scale was .93.

Idea promotion

Idea promotion was assessed with the three idea promotion items from the innovative work performance scale (Janssen, 2001). Leaders were asked how often their subordinates engaged in idea promotion behaviours. Items included "My employee mobilizes support for innovative ideas" and "My employee acquires approval for innovative ideas." The items were answered on a 7-point scale ranging from 1 (never) to 7 (always). Cronbach's alpha for this scale was .90.

Idea realization

Idea realization was assessed with the three idea realization items from the innovative work performance scale (Janssen, 2001). Leaders were asked how often their subordinates engaged in idea realization behaviours, with items like "My employee evaluates the utility of innovative ideas" and "My employee transforms innovative ideas into useful applications." The items were answered on a 7-point scale ranging from 1 (never) to 7 (always). Cronbach's alpha for this scale was .89.

Control variables

Consistent with previous research, we controlled for leaders' gender, openness and importance of innovation at work. Leaders' gender (dummy variable, 1 = male, 2 = female) was controlled for, because previous research on creativity and innovation has shown relevant gender differences (Amabile et al., 2005; De Dreu, 2006). We controlled for openness, because it is the strongest predictor of creativity amongst the five-factor model personality traits (Feist, 1998). Openness was measured with an adapted version of the 6-item semantic differential subscale of the five-factor scale developed by Shafer (1999) on a scale ranging from 1 to 5. In addition, we controlled for the importance of innovation at work, by asking subordinates to indicate the importance of innovation at their work on a scale from 1 (not important) to 5 (very important). Note that our conclusions based on the results of this study did not alter depending on whether or not we controlled for these variables.

Results

Preliminary analyses

Prior to conducting a regression analysis, we analysed our idea generation, idea promotion and idea implementation variables by performing a bi-factor model using Mplus (Muthén & Muthén, 2007). Such a model is applicable for multidimensional structural models that specify that each item is an indicator of a single factor, and each item also is an indicator of one (or more) orthogonal group factors (see Reise et al., 2013). This model is applicable here, given that our measure assesses innovative job performance as a whole (i.e., the single factor) as well as its three sub-components (idea generation, idea promotion and idea implementation). The fit indices were X^2 (201) = 29.74, $p < .001$, RMSEA = .09, CFI = .98, showing that the three-factor model provides good fit to the data.

In addition, we performed confirmatory factor analyses using Mplus (Muthén & Muthén, 2007) on our predictor variables (i.e., opening leader behaviours and closing leader behaviours). The first model we tested was a single-factor model in which all items loaded in the same factor. The fit indices were: $\chi^2(201) = 1{,}165.83$, $p < .001$, RMSEA = .15, CFI = .66. As the second model, we tested a two-factor model corresponding to the opening and closing leader behaviours scales used in the study. The fit indices were: $\chi^2(201) = 763.05$, $p < .001$, RMSEA = .08, CFI = .85. Therefore, the two-factor model provided a better fit, which is in line with our expectations.

Means, standard deviations and correlations among the measures employed in the study are shown in Table 1. As expected, opening leader behaviours were significantly positively correlated with idea generation ($r = .42$, $p < .001$), idea promotion ($r = .35$, $p < .001$) and idea implementation ($r = .37$, $p < .001$). In addition, closing leader behaviours were found to be positively correlated with idea generation ($r = .19$, $p = .006$), idea promotion ($r = .24$, $p < .001$) and idea implementation ($r = .21$, $p < .001$). Opening and closing leader behaviours were significantly positively correlated ($r = .31$, $p < .001$), suggesting that they tend to, but do not always, co-occur. There were also high and significant positive correlations between idea generation on the one hand and idea promotion ($r = .77$, $p < .001$) and idea implementation ($r = .77$, $p < .001$) on the other, suggesting that these behaviours tend to go together (even though they can be differentiated from each other – see the results on the bi-factor model).

Table 1. Correlations and descriptive statistics.

	M	SD	1	2	3	4	5	6	7	8
1. Opening leader behaviours	4.77	0.98	(.90)							
2. Employee idea generation	4.11	1.12	.42**	(.93)						
3. Employee idea promotion	4.00	1.15	.35**	.77**	(.90)					
4. Employee idea implementation	3.94	1.23	.37**	.77**	.85**	(.89)				
5. Closing leader behaviours	4.47	0.85	.31**	.19**	.24**	.21**	(.81)			
6. Openness to experience	3.31	0.62	.24**	.20**	.28**	.36**	.08	(.22)		
7. Importance of innovation	3.80	0.76	.22**	.30**	.35**	.40**	.29**	.28**	N/A	
8. Female (%)	37.30	-	.10	.21**	.14*	.17*	.05	.03	.10	N/A

N = 201, *p < .05, **p < .01. Values on the diagonal are Cronbach's alpha coefficients.

Hypothesis testing

In order to test the indirect path of opening leader behaviours to idea promotion and realization via idea generation, we used the PROCESS macro for SPSS (Hayes, 2012; model, p. 14). In these analyses, we simultaneously tested for the moderating effect of closing behaviours on the relationship between idea generation and idea promotion and realization, respectively.

Idea promotion – indirect path

H1 predicted that leaders' opening leader behaviours would be positively related to idea promotion through subordinate idea generation. The results supported our hypothesis (see Table 2): Opening leader behaviours were significantly related to idea generation (b = .35, p < .001), and idea generation was significantly related to idea promotion (b = .74, p < .001). Further, the test of indirect effects showed that idea generation mediated the relationship between opening leader behaviours and idea promotion (indirect effect = 0.26, 95% CI = [0.15, 0.36]). The direct effect of opening leader behaviours on idea promotion was not significant (direct effect = 0.00, 95% CI = −0.11, 0.12), consistent with full mediation.

Idea realization – indirect path

H1 also predicted that leaders' opening leader behaviours would be positively related to idea realization through subordinate idea generation. Similarly to the previous analysis, we found (see Table 3) that opening leader behaviours were significantly related to idea realization (b = .35, p < .001), and idea generation was significantly related to idea realization (b = .73, p < .001). The test of indirect effects showed that idea generation mediated the relationship between opening leader behaviours and idea realization (indirect effect = 0.25, 95% CI = [0.15, 0.36]). Again, the direct effect of opening leader behaviours on idea realization was not significant (direct effect = 0.02, 95% CI = −0.10, 0.14), consistent with full mediation.

Moderation – idea promotion

H2 predicted that closing leadership behaviours would moderate the strength of the mediated relationship between opening leader behaviours and employee idea promotion via employee idea generation, such that the relationship will be stronger when closing behaviours are high. The results (see Table 2) revealed that the indirect effect of opening leader behaviours on idea promotion via idea generation was significant for both high and low levels of closing leader behaviours. The index of moderated mediation failed to reach significance (effect = 0.29,

Table 2. Moderated mediation analysis summary of the opening behaviours – idea promotion relationship.

Mediator variable model (DV = Idea generation)			
Predictor	b[a]	SE	t
Constant	−4.49	.51	−8.87**
Opening behaviours	.35	.07	4.88**
Leader gender	.36	.14	2.57*
Importance innovation	.39	.09	4.11**
Openness to experience	.27	.11	2.30*
Dependent variable model (DV = Idea promotion)			
Predictor	b[a]	SE	t
Constant	3.56	.48	7.49**
Opening behaviours	.00	.06	.54
Idea generation	.74	.05	13.53**
Closing behaviours	.09	.07	1.26
Idea generation × closing behaviours	.08	.04	1.86
Leader gender	-.04	.11	-.40
Importance innovation	.05	.08	.63
Openness to experience	.08	.09	.94

	Conditional indirect effects at values of the moderator			
	Effect	Boot SE	BootLLCI	BootULCI
Closing behaviours (high = +1SD)	.24	.05	.14	.34
Closing behaviours (low = −1SD)	.28	.06	.16	.40

Note. Bootstrap (Boot) sample size = 10,000, Level of confidence interval = 95% unstandardized regression coefficients. * p < .05, ** p < .01.

Table 3. Moderated mediation analysis summary of the opening behaviours – idea implementation relationship.

Mediator variable model (DV = Idea generation)			
Predictor	b[a]	SE	t
Constant	−4.49	.51	−8.87**
Opening behaviours	.35	.07	4.88**
Leader gender	.36	.14	2.57*
Importance innovation	.39	.09	4.11**
Openness to experience	.27	.11	2.30*
Dependent variable model (DV = Idea implementation)			
Predictor	b[a]	SE	t
Constant	2.47	.50	4.92**
Opening behaviours	.20	.32	.32
Idea generation	.74	.06	12.73**
Closing behaviours	.25	.07	.35
Idea generation × closing behaviours	.09	.05	2.00*
Leader gender	.20	.86	.18
Importance innovation	.15	.07	1.80
Openness to experience	.24	.01	2.51*
	Conditional indirect effects at values of the moderator		
	Effect	Boot SE	BootLLCI	BootULCI
Closing behaviours (high = +1SD)	.23	.05	.14	.34
Closing behaviours (low = −1SD)	.28	.06	.16	.40

Note: Bootstrap (Boot) sample size = 10,000, Level of confidence interval = 95% unstandardized regression coefficients. * $p < .05$, ** $p < .01$.

95% CI = [−0.01, 0.08]). Moreover, the interactive effect of idea generation and closing behaviour on idea promotion was not significant (b = .08, p = .065).

Moderation – idea realization

H2 also predicted that closing leadership behaviours would moderate the strength of the mediated relationship between opening leader behaviours and employee idea realization via employee idea generation, such that the relationship will be stronger when closing behaviours are high. Similarly to the previous analysis, the results (see Table 3) revealed that the indirect path from opening behaviours to idea realization through idea generation was significant for both high and low levels of closing behaviours, and that the index of moderated mediation was not significant (effect = 0.33, 95% CI = [−0.01, 0.09]). However, the interactive effect of idea generation and closing behaviour on idea promotion was significant (b = .09, p = .045). Simple slopes analyses for the interactive effect of closing behaviours and idea generation on idea realization yielded a significant positive simple slope at the higher levels of closing leader behaviours (1 SD above the mean) (β = .44, p = .018), but not at the lower levels of closing leader behaviours (1 SD below the mean) (β = .26, p = .317). In sum, the significant moderation effect and the specific pattern of effects provide partial support Hypothesis 2, in that opening behaviours predicted idea realization through idea generation, and the relation between idea generation and idea realization was only significant for high levels of closing behaviours. However, contrary to our hypotheses, the indirect path was significant for both high and low levels of closing behaviours.

Discussion

Moving from idea generation to the promotion and realization of ideas is an essential yet challenging part of innovation (Rietzschel & Ritter, 2018), and leaders can make an important contribution to this. To our knowledge, this is the first study to focus on the role of ambidextrous leadership in the relationship between the separate dimensions of idea generation, idea promotion and idea implementation. The results supported our prediction that leaders' opening behaviours are positively associated with the later stages of innovation through employee idea generation. Employees were rated higher on idea generation and subsequently on the extent to which they promoted and implemented ideas when their leaders were perceived to encourage them to explore and experiment new ways of doing things. In addition, the results partially supported our hypothesis that closing leader behaviours would strengthen the effect of opening leadership behaviours on idea realization through idea generation, but less so for idea promotion. Particularly when leaders were perceived to take corrective actions, sanction errors, set specific guidelines, monitor goal achievement or to display other closing behaviours, coming up with new and useful ideas was linked to the implementation of ideas.

Theoretical implications

Our paper contributes to the theoretical development of the innovation and ambidextrous leadership literatures by providing insight into how leaders can stimulate idea generation, idea promotion and idea realization by displaying various types of leader behaviour. It provides a closer look at how this type of leadership operates by investigating the effects of opening and closing leader behaviours in the earlier and later stages of innovation. In our study, the hypothesis that closing leader behaviours strengthened the indirect path from opening leader behaviours to idea implementation and to idea promotion via idea generation was not fully supported. Instead, our results show that closing leadership behaviours moderated the relationship between idea generation and idea realization. These

findings suggest that closing leader behaviours may provide creative employees with guidance and a clear path towards idea implementation. These results are in line with research showing that employees benefit from different leadership approaches for different facets of the innovation process (N. Anderson & King, 1991; N. R. Anderson & King, 1993; also see Perry-Smith & Mannucci, 2017).

Importantly, this study adds further credence to the basic tenets of ambidextrous leadership theory. First, our findings extend previous research on ambidexterity at the team and organizational levels (Gerlach et al., 2020; Gerlach et al., 2020; Klonek et al., 2020; Zacher & Rosing, 2015; Zacher & Wilden, 2014) by showing that ambidextrous leadership (combination of high opening leader behaviour and high closing leader behaviours) ultimately yields the highest level of leader-reported idea implementation. Second, they show that opening leader behaviours are positively related to employee idea generation (and subsequently to idea implementation), and that closing leader behaviours serve to further strengthen the link between employee idea generation and idea implementation. Our findings thus provide a more fine-grained insight into which leader behaviours are positively related to the late stages of innovation. Notably, Zacher et al. (2016) found that leader opening and closing behaviours predicted employee exploration and exploitation behaviours, respectively. One would expect that the relationship between leader opening behaviour and idea generation could be explained by employee explorative behaviours, and that the interactive effect of idea generation and leader closing behaviours on innovation could be explained by employee exploitative behaviour, but this is an issue that future research may want to further investigate. Third, we contribute to the development of the ambidextrous leadership theory by showing that open and closing behaviours can interact with other constructs. Specifically, we found that idea generation can interact with closing leader behaviours to yield the highest level of idea implementation.

This study also adds to literature that shows that the relationship between idea generation and subsequent innovation activities can be problematic (Rietzschel et al., 2006, 2010; Škerlavaj et al., 2014; Sohn & Jung, 2010; Somech & Drach-Zahavy, 2013) and reveals that the relationship between idea generation and idea implementation is a function of different leadership behaviours. Idea implementation benefits from leaders' opening behaviours because they enhance the availability of creative ideas, and successfully linking idea generation to innovation profits from leaders' closing behaviours. In addition, in this study closing leadership behaviours did not affect the indirect relationship between opening leadership behaviours and idea promotion and idea realization (via idea generation). One possible explanation could be that the innovation requirements these employees happened to face did not require closing leadership behaviours (Gerlach et al., 2020). Moreover, it might be that employees who deal with opening leadership behaviours do not pay attention to closing leader behaviours if they feel such behaviours are not needed to perform well. Alternatively, it is possible that this finding has to do with the cross-sectional nature of the study, and that the results would have been more in line with our model if we had used a longitudinal or multilevel design. For example, perhaps between-person levels of idea realization are positively predicted by opening behaviours regardless of the presence of closing behaviours, but at the same time, within-person variance in idea realization of specific ideas may depend on the combination of leader opening and closing behaviours. Rather than stimulating the realization of all employee ideas, leaders may be more likely to display the necessary closing behaviours for some ideas only because they deem these to be more promising. Not every idea deserves to be implemented, and one important task of leaders is to act as gatekeepers and help their subordinates invest their limited resources wisely.

Another unexpected finding was that closing leadership behaviours moderated the relationship between idea generation and idea realization, but not idea promotion. One possible explanation could be that idea promotion might be more related to exploration activities and as such benefits more from opening leadership behaviours than from closing leadership behaviours. This might be because, similarly to the generation of creative ideas, persuading decision makers and removing obstacles to obtain approval require exploration, flexibility, and experimentation. Consistent with this explanation, Howell and Boies (2004) found that individuals who actively champion ideas rely more on informal than formal selling processes. Another way of looking at it is that idea promotion, like idea generation, may be more focused on novelty (and as such is more aligned with opening leader behaviours), whereas idea realization requires more of a focus on usefulness and feasibility, which may be more aligned with closing leader behaviours (cf. Amabile, 1996). This would also be in line with the recent results on task requirements by Gerlach et al. (2020). Future research would do well to take a closer look at the differences between these facets of the innovation process, and the role leaders can play here.

Limitations and future research

Naturally, there are some limitations to our study. First, the correlational nature of this study does not allow us to establish causality. Thus, future research could use experimental designs, for example, manipulating the degree to which participants are exposed to opening or closing behaviours in different stages of an innovation task (see Rietzschel et al., 2017).

Second, another limitation of this study was that, due to its cross-sectional nature, we could not address the temporal nature of either innovation or ambidextrous leadership; that is, we have no information about the degree to which leaders showed opening and closing behaviours at different moments. Ambidextrous leadership theory clearly predicts that opening behaviours will be more beneficial at some moments than others (and idem for closing behaviours), but this temporal aspect thus far remains to be empirically addressed (however, see Klonek et al., 2020, for a first step in this direction). Thus, future research could focus on exploring leaders' flexibility in switching between opening and closing leader behaviours – and their ability to do so at the appropriate moment. Similarly, although idea generation is generally considered an early, front-end activity in innovation, our cross-sectional data do not tell us whether a correlation between idea generation and idea promotion and idea implementation represented a successful transition from the one to the other, or mere co-

occurrence. This would be an interesting and important avenue for future research, especially if the temporal aspect of ambidextrous leadership is taken into account simultaneously. As explained earlier, this might also be important because leaders' tendency to display closing behaviours may depend on the idea generated – that is, some ideas may seem more promising and therefore may elicit more closing behaviours from the leader aimed at stimulating realization of those particular ideas (rather than all ideas). In this context, the moderate positive correlation between opening and closing behaviours is also interesting. Our data suggest that these two behaviours tend to co-occur within leaders, and previous research has found similar results (e.g., Zacher et al., 2016; Zacher & Wilden, 2014). Intuitively, one might perhaps expect a negative correlation since the two represent such different kinds of behaviour.[1] However, ambidextrous leadership theory would predict that effective leaders are those who can – in principle – display both types of behaviour. In other words, the positive correlation may represent that leaders indeed do so. Further research about this intercorrelation and the associated behavioural patterns over time would be very interesting.

Third, although innovation is a complex social process that happens at different levels (McLean, 2005), in this study we only focused on the individual level (although our constructs relate to the dyadic relationship between employees and their supervisors). Thus, many other social aspects that are important for innovation to occur (f.i., those that require coordination and communication) were not explicitly taken into consideration. Future research could further explore the relationship between ambidextrous leadership and innovation at the group or organizational level and take those aspects into account. Group and organizational innovation is not only determined by individual-level inputs, but by a host of social and other contextual factors (Woodman et al., 1993). Thus, the effects of leadership need not be the same for individual and team (or organization) innovative behaviours. One example is the role of team climate. Following Anderson and West's (1996) team climate for innovation (TCI) model, it would be interesting to see whether ambidextrous leadership relates differently to, say, the dimensions safety or support for innovation than to vision or task orientation. Alternatively, it is possible that leaders need to have different kinds of closing behaviours at their disposal, depending on whether they are working with individual or teams – for example, effective team-oriented closing behaviours may relate more to avoiding process losses and ensuring that the team organizes its work so as to benefit maximally from each member's expertise or input.

A related issue is that ambidexterity itself also takes place on different levels (the organizational level, the leader and team level, and the individual level). In a recent meta-analysis on the role of ambidexterity in organizations (Mueller-Seeger et al., 2018), it is noted that papers focusing on ambidextrous leadership rarely discuss the conditions under which employees' behaviour turns out to contribute to an ambidextrous organization. As organizational ambidexterity on the macro level symbolizes the balance between stability, based on the use of existing knowledge (exploitation), and variability, based on the ability to acquire and adapt new knowledge (exploration), both are deemed necessary for organizational survival (Tushman & O'Reilly, 1996). As such, it seems important to investigate how individual leaders or subordinates may contribute its development. In addition, organizational configurations, like those that foster structural ambidexterity, may affect the display and the effects of opening and closing leader behaviours. Organizations that adopt this configuration create separate organizational units for exploitative and explorative activities (Gibson & Birkinshaw, 2004). It may be that leaders are more successful when they display opening behaviours to facilitate idea generation within explorative units and closing behaviours to facilitate innovation within exploitative units. Perhaps not all leaders need to be able to display both opening and closing leader behaviours; perhaps it is enough if leaders strong in opening or closing leader behaviours are dispersed well within the organization. Thus, an important avenue for future research maybe be to further examine the relationship between ambidextrous leadership and creativity and innovation at the group and organizational levels.

Finally, employee idea generation, idea promotion and idea realization were strongly positively correlated in our data, suggesting that these behaviours usually tend to go together. This is not surprising, given the nature of innovation. Although this might raise concerns of between-construct empirical redundancy (Le et al., 2010; Shaffer et al., 2016), the empirical and conceptual distinction between idea generation and innovation are well-established. Moreover, our bi-factor model results, as well as the results of our moderation analysis, corroborate this distinction: Despite the high correlation, there clearly is empirical and theoretical value in taking a more fine-grained look at the different aspects of innovation. Thus, future research may employ research designs such as longitudinal studies and collecting data from different sources (Lindebaum & Cartwright, 2010). This would also allow for a more stringent test as to whether (and when) idea generation actually carries over (or fails to do so) into idea promotion and idea implementation (cf. Somech & Drach-Zahavy, 2013).

Practical implications

The focus on leadership as an individual level antecedent of creativity and innovation is particularly important because leadership can be developed, changed, and improved (Yukl, 2019). As such, insight into how leadership can affect employee creativity and innovation may provide organizations with ideas about what can be done in order to foster desired behaviours in employees. Although the results of this research should, of course, be replicated and extended before strong practical recommendations can be made, our results suggest that organizations or leaders should consider which specific behaviour or activity they are trying to encourage in attempts to foster innovation. For example, if a team or department already performs quite well on idea generation, but fails to successfully promote or (especially) implement those ideas, a leader might do well to display more closing leader behaviours specifically, rather than trying to foster "innovation" across the board. Furthermore, our findings suggest that those in leadership positions could benefit from ambidextrous leadership training. Such training could help leaders develop a broader repertoire of opening and closing

leader behaviours, but ideally should also help them recognize and act upon the opportune moments for these behaviours.

Conclusion

The current research contributes to the development of literature on creativity, innovation and leadership. Our study focused attention on the determinant role of opening leader behaviours on idea promotion and idea implementation through idea generation. Further, it examined the moderating role of closing behaviours in the relationship between idea generation and the late stages of innovation. A critical task for those in leadership positions is to understand how to facilitate employee idea generation, idea promotion and idea implementation as the situation requires.

Note

1. We thank an anonymous reviewer for drawing our attention to this issue.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

This work was supported by the Consejo Nacional de Ciencia y Tecnología; Rijksuniversiteit Groningen [Internet research fund'].

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References

Amabile, T. M. (1988). A model of creativity and innovation in organizations. *Research in Organizational Behavior*, *10*, 123–167.

Amabile, T. M. (1996). *Creativity in context: Update to the social psychology of creativity*. Westview Press.

Amabile, T. M., Barsade, S. G., Mueller, J. S., & Staw, B. M. (2005). Affect and creativity at work. *Administrative Science Quarterly*, *50*(3), 367–403. https://doi.org/10.2189/asqu.2005.50.3.367

Amabile, T. M., & Conti, R. (1999). Changes in the work environment for creativity during downsizing. *Academy of Management Journal*, *42*, 630–640. https://doi.org/10.5465/256984

Amabile, T. M., Conti, R., Coon, H., Lazenby, J., & Herron, M. (1996). Assessing the work environment for creativity. *Academy of Management Journal*, *39*, 1154–1184. https://doi.org/10.5465/256995

Anderson, N., & King, N. (1991). Managing innovation in organisations. *Leadership & Organization Development Journal*, *12*(4), 17–21. https://doi.org/10.1108/01437739110143024

Anderson, N., Potočnik, K., & Zhou, J. (2014). Innovation and creativity in organizations: A state-of-the-science review, prospective commentary, and guiding framework. *Journal of Management*, *40*(5), 1297–1333. https://doi.org/10.1177/0149206314527128

Anderson, N., & West, M. A. (1996). The team climate inventory: Development of the TCI and its applications in teambuilding for innovativeness. *European Journal of Work and Organizational Psychology*, *5*, 53–66. doi:10.1080/13594329608414840 1

Anderson, N. R., & King, N. (1993). Innovation in Organizations. In C. L. Cooper & I. T. Robertson (Eds.), *International Review of Industrial Organizational Psychology* (pp. 1–33). Wiley.

Axtell, C. M., Holman, D. J., Unsworth, K. L., Wall, T. D., Waterson, P. E., & Harrington, E. (2000). Shopfloor innovation: Facilitating the suggestion and implementation of ideas. *Journal of Occupational and Organizational Psychology*, *73*(3), 265–285. https://doi.org/10.1348/096317900167029

Baer, M. (2012). Putting creativity to work: The implementation of creative ideas in organizations. *Academy of Management Journal*, *55*, 1102–1119. https://doi.org/10.5465/amj.2009.0470

Bledow, R., Frese, M., Anderson, N., Erez, M., & Farr, J. (2009). A dialectic perspective on innovation: Conflicting demands, multiple pathways, and ambidexterity. *Industrial and Organizational Psychology*, *2*(3), 305–337. https://doi.org/10.1111/j.1754-9434.2009.01154.x

Byron, K., & Khazanchi, S. (2012). Rewards and creative performance: A meta-analytic test of theoretically derived hypotheses. *Psychological Bulletin*, *138*(4), 809. https://doi.org/10.1037/a0027652

De Dreu, C. K. (2006). When too little or too much hurts: Evidence for a curvilinear relationship between task conflict and innovation in teams. *Journal of Management*, *32*(1), 83–107. https://doi.org/10.1177/0149206305277795

De Jong, J., & Den Hartog, D. (2010). Measuring innovative work behaviour. *Creativity and Innovation Management*, *19*(1), 23–36. https://doi.org/10.1111/j.1467-8691.2010.00547.x

Donaldson, S. I., & Grant-Vallone, E. J. (2002). Understanding self-report bias in organizational behavior research. *Journal of Business and Psychology*, *17*(2), 245–260. https://doi.org/10.1023/A:1019637632584

Feist, G. J. (1998). A meta-analysis of personality in scientific and artistic creativity. *Personality and Social Psychology Review*, *2*(4), 290–309. https://doi.org/10.1207/s15327957pspr0204_5

Gerlach, F., Heinigk, K., Rosing, K., & Zacher, H. (2020). Aligning leader behaviors with innovation requirements improves performance: An experimental study. *Frontiers in Psychology*, *11*, 1332. https://doi.org/10.3389/fpsyg.2020.01332

Gerlach, F., Hundeling, M., & Rosing, K. (2020). Ambidextrous leadership and innovation performance: A longitudinal study. *Leadership & Organization Development Journal*, *41*(3), 383–398. https://doi.org/10.1108/LODJ-07-2019-0321

Gibson, C. B., & Birkinshaw, J. (2004). The antecedents, consequences, and mediating role of organizational ambidexterity. *Academy of Management Journal*, *47*, 209–226. https://doi.org/10.5465/20159573

Greszki, R., Meyer, M., & Schoen, H. (2015). Exploring the effects of removing "too fast" responses and respondents from web surveys. *Public Opinion Quarterly*, *79*(2), 471–503. https://doi.org/10.1093/poq/nfu058

Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling [White paper]*. http://www.afhayes.com/public/process2012.pdf

Howell, J. M., & Boies, K. (2004). Champions of technological innovation: The influence of contextual knowledge, role orientation, idea generation, and idea promotion on champion emergence. *The Leadership Quarterly*, *15*(1), 123–143. https://doi.org/10.1016/j.leaqua.2003.12.008

Hughes, D. J., Lee, A., Tian, A. W., Newman, A., & Legood, A. (2018). Leadership, creativity, and innovation: A critical review and practical recommendations. *The Leadership Quarterly*, *29*(5), 549–569. https://doi.org/10.1016/j.leaqua.2018.03.001

Hülsheger, U. R., Anderson, N., & Salgado, J. F. (2009). Team-level predictors of innovation at work: A comprehensive meta-analysis spanning three decades of research. *Journal of Applied Psychology*, *94*(5), 1128. https://doi.org/10.1037/a0015978

Janssen, O. (2001). Fairness perceptions as a moderator in the curvilinear relationships between job demands, and job performance and job satisfaction. *Academy of Management Journal*, *44*, 1039–1050. https://doi.org/10.2307/3069447

Kanter, R. M. (1988). Three tiers for innovation research. *Communication Research*, *15*(5), 509–523. https://doi.org/10.1177/009365088015005001

Keller, R. T. (2006). Transformational leadership, initiating structure, and substitutes for leadership: A longitudinal study of research and development project team performance. *Journal of Applied Psychology*, *91*(1), 202–210. https://doi.org/10.1037/0021-9010.91.1.202

Klonek, F. E., Gerpott, F. H., & Parker, S. K. (2020). A conceptual replication of ambidextrous leadership theory: An experimental approach. *The Leadership Quarterly*, 101473. https://doi.org/10.1016/j.leaqua.2020.101473

Koh, D., Lee, K., & Joshi, K. (2019). Transformational leadership and creativity: A meta-analytic review and identification of an integrated model. *Journal of Organizational Behavior*, *40*(6), 625–650. https://doi.org/10.1002/job.2355

Krosnick, J. A., & Alwin, D. F. (1987). An evaluation of a cognitive theory of response-order effects in survey measurement. *Public Opinion Quarterly*, *51*(2), 201–219. https://doi.org/10.1086/269029

Le, H., Schmidt, F. L., Harter, J. K., & Lauver, K. J. (2010). The problem of empirical redundancy of constructs in organizational research: An empirical investigation. *Organizational Behavior and Human Decision Processes*, *112*(2), 112–125. https://doi.org/10.1016/j.obhdp.2010.02.003

Levinthal, D. A., & March, J. G. (1993). The myopia of learning. *Strategic Management Journal*, *14*(S2), 95–112. https://doi.org/10.1002/smj.4250141009

Levitt, T. (1963). Creativity is not enough. *Harvard Business Review*, *41*, 72–83.

Lindebaum, D., & Cartwright, S. (2010). A critical examination of the relationship between emotional intelligence and transformational leadership. *Journal of Management Studies*, *47*, 1317–1342. https://doi.org/10.1111/j.1467-6486.2010.00933.x

Mainemelis, C. (2010). Stealing fire: Creative deviance in the evolution of new ideas. *Academy of Management Review*, *35*, 558–578. https://doi.org/10.5465/amr.35.4.zok558

March, J. G. (1991). Exploration and exploitation in organizational learning. *Organization Science*, *2*(1), 71–87. https://doi.org/10.1287/orsc.2.1.71

McLean, L. D. (2005). Organizational culture's influence on creativity and innovation: A review of the literature and implications for human resource development. *Advances in Developing Human Resources*, *7*(2), 226–246. https://doi.org/10.1177/1523422305274528

Mueller-Seeger, J., Renzl, B., & Will, M. (2018). Ambidextrous leadership: A meta-review applying static and dynamic multi-level perspectives. *Review of Managerial Science*. https://doi.org/10.1007/s11846-018-0297-9

Muthén, L. K., & Muthén, B. O. (2007). *Mplus user's guide* (5th ed.). Muthén & Muthén.

Perry-Smith, J. E., & Mannucci, P. V. (2017). From creativity to innovation: The social network drivers of the four phases of the idea journey. *Academy of Management Review*, *42*(1), 53–79. https://doi.org/10.5465/amr.2014.0462

Reise, S. P., Bonifay, W. E., & Haviland, M. G. (2013). Scoring and modeling psychological measures in the presence of multidimensionality. *Journal of Personality Assessment*, *95*(2), 129–140. https://doi.org/10.1080/00223891.2012.725437

Rietzschel, E. F., Wisse, B., & Rus, D. (2017). Puppet masters in the lab: Experimental methods in leadership research. In B. Schyns, R. J. Hall, & P. Neves (Eds.), *Handbook of methods in leadership research* (pp. 48–72). Edward Elgar Publishing.

Rietzschel, E. F., & Ritter, S. M. (2018). Moving from creativity to innovation. In R. Reiter-Palmon, V. L. Kennel, & J. C. Kaufman (Eds.), *Individual creativity in the workplace* (pp. 203–222). Academic Press.

Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (2019). Why great ideas are often overlooked. In P. B. Paulus & B. A. Nijstad (Eds.), *The oxford handbook of group creativity and innovation* (pp. 179–197). Oxford University Press.

Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (2006). Productivity is not enough: A comparison of interactive and nominal brainstorming groups on idea generation and selection. *Journal of Experimental Social Psychology*, *42*(2), 244–251. https://doi.org/10.1016/j.jesp.2005.04.005

Rietzschel, E. F., Nijstad, B. A., & Stroebe, W. (2010). The selection of creative ideas after individual idea generation: Choosing between creativity and impact. *British Journal of Psychology*, *101*(1), 47–68. https://doi.org/10.1348/000712609X414204

Rosing, K., Frese, M., & Bausch, A. (2011). Explaining the heterogeneity of the leadership-innovation relationship: Ambidextrous leadership. *The Leadership Quarterly*, *22*(5), 956–974. https://doi.org/10.1016/j.leaqua.2011.07.014

Rosing, K., & Zacher, H. (2017). Individual ambidexterity: The duality of exploration and exploitation and its relationship with innovative performance. *European Journal of Work and Organizational Psychology*, *26*(5), 694–709. https://doi.org/10.1080/1359432X.2016.1238358

Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of Management Journal*, *37*, 580–607. https://doi.org/10.5465/256701

Shafer, A. B. (1999). Brief bipolar markers for the five factor model of personality. *Psychological Reports*, *84*(3_suppl), 1173–1179. https://doi.org/10.2466/pr0.1999.84.3c.1173

Shaffer, J. A., DeGeest, D., & Li, A. (2016). Tackling the problem of construct proliferation: A guide to assessing the discriminant validity of conceptually related constructs. *Organizational Research Methods*, *19*(1), 80–110. https://doi.org/10.1177/1094428115598239

Shalley, C. E., & Zhou, J. (2008). Organizational creativity research: A historical overview. In J. Zhou & C. E. Shalley (Eds.), *Handbook of organizational creativity* (pp. 95–123). Taylor and Francis.

Shalley, C. E., & Gilson, L. L. (2004). What leaders need to know: A review of social and contextual factors that can foster or hinder creativity. *The Leadership Quarterly*, *15*(1), 33–53. https://doi.org/10.1016/j.leaqua.2003.12.004

Škerlavaj, M., Černe, M., & Dysvik, A. (2014). I get by with a little help from my supervisor: Creative-idea generation, idea implementation, and perceived supervisor support. *The Leadership Quarterly*, *25*(5), 987–1000. https://doi.org/10.1016/j.leaqua.2014.05.003

Sohn, S. Y., & Jung, C. S. (2010). Effect of creativity on innovation: Do creativity initiatives have significant impact on innovative performance in Korean firms? *Creativity Research Journal*, *22*(3), 320–328. https://doi.org/10.1080/10400419.2010.503542

Somech, A., & Drach-Zahavy, A. (2013). Translating team creativity to innovation implementation: The role of team composition and climate for innovation. *Journal of Management*, *39*(3), 684–708. https://doi.org/10.1177/0149206310394187

Staw, B. M. (1990). An evolutionary approach to creativity and innovation. In M. A. West & J. L. Farr (Eds.), *Innovation and Creativity at Work: Psychological and Organizational Strategies* (pp. 287–308). Wiley.

Tierney, P. (2008). Leadership and employee creativity. In J. Zhou & C. E. Shalley (Eds.), *Handbook of organizational creativity* (pp. 95–123). Taylor and Francis.

Tushman, M. L., & O'Reilly, C. A. (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review*, *38*(4), 8–29. https://doi.org/10.2307/41165852

Wang, G., Oh, I. S., Courtright, S. H., & Colbert, A. E. (2011). Transformational leadership and performance across criteria and levels: A meta-analytic review of 25 years of research. *Group & Organization Management*, *36*(2), 223–270. https://doi.org/10.1177/1059601111401017

West, M. A. (2002). Sparkling fountains or stagnant ponds: An integrative model of creativity and innovation implementation in work groups. *Applied Psychology*, *51*(3), 355–387. https://doi.org/10.1111/1464-0597.00951

Woodman, R. W., Sawyer, J. E., & Griffin, R. W. (1993). Toward a theory of organizational creativity. *Academy of Management Review*, *18*(2), 293–321. https://doi.org/10.5465/amr.1993.3997517

Yukl, G. (2019). *Leadership in organizations*. Pearson.

Zacher, H., Robinson, A. J., & Rosing, K. (2016). Ambidextrous leadership and employees' self-reported innovative performance: The role of exploration and exploitation behaviors. *The Journal of Creative Behavior*, *50*(1), 24–46. https://doi.org/10.1002/jocb.66

Zacher, H., & Rosing, K. (2015). Ambidextrous leadership and team innovation. *Leadership & Organization Development Journal*, *36*(1), 54–68. https://doi.org/10.1108/LODJ-11-2012-0141

Zacher, H., & Wilden, R. G. (2014). A daily diary study on ambidextrous leadership and self-reported employee innovation. *Journal of Occupational and Organizational Psychology*, *87*(4), 813–820. https://doi.org/10.1111/joop.12070

Zhou, J., & Shalley, C. E. (2003). Research on employee creativity: A critical review and directions for future research. In J. Martocchio (Ed.), *Research in personnel and human resource management* (pp. 165–217). Elsevier.