

University of Groningen

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Published in:
 Creativity and Innovation Management

DOI:
[10.1111/caim.12341](https://doi.org/10.1111/caim.12341)

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Document Version
 Publisher's PDF, also known as Version of record

Publication date:
 2020

[Link to publication in University of Groningen/UMCG research database](#)

Citation for published version (APA):

Mascareño, J., Rietzschel, E., & Wisse, B. (2020). Envisioning innovation: Does visionary leadership engender team innovative performance through goal alignment? *Creativity and Innovation Management*, 29(1), 33-48. <https://doi.org/10.1111/caim.12341>

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ARTICLE

Envisioning innovation: Does visionary leadership engender team innovative performance through goal alignment?

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Funding information

Consejo Nacional de Ciencia y Tecnología

Visionary leaders paint an image of the future with the intention to persuade others to contribute to the realization of that specific future. In the current study, we test the hypothesis that visionary leadership stimulates team creativity and innovation because visionary leadership promotes goal alignment amongst team members which, in turn, facilitates team creativity and innovation. In an experimental study ($N = 50$ groups), we found that goal alignment indeed mediated the relationship between visionary leadership and team creativity, but not between visionary leadership and team innovation. In a field study ($N = 308$ respondents) we found visionary leadership to be related to both team creativity and innovation through goal alignment. Moreover, the field study also showed that communication quality strengthened the relationship between goal alignment and team innovation. We discuss the theoretical and practical implications of visionary leadership in teams where creativity and innovation are desirable team performance outcomes.

1 | INTRODUCTION

Teams benefit from their leaders' ability to combine, change and coordinate team members' capabilities and contributions into collective action that contributes to the effectiveness of their organizations (House, 1971; Yukl, 2012; Zaccaro & Klimoski, 2002). Fostering team creativity and innovation can be a particularly effective means to create value and sustain a competitive advantage (Rosenbusch, Brinckmann, & Bausch, 2011). The team's ability to generate new and useful ideas (*creativity*, e.g., Amabile, 1996; West, 2002) and the subsequent process of carefully selecting and implementing these ideas (*innovation*; e.g., Amabile, 1988; Scott & Bruce, 1994; West, 2002) have become even more important in these recent decades of rapid technological development and intense global competition (Hennessey & Amabile, 2010; Yoshida, Sendjaya, Hirst, & Cooper, 2014). An increasing number of studies focus on what leaders can do to stimulate team creativity and innovation (see Hughes, Lee, Tian, Newman, & Legood, 2018; Lee, Koh, & Joshi, 2019; Rosing, Frese, & Bausch, 2011; Wang, Oh, Courtright, & Colbert, 2011). However, most of these studies focus on transformational leadership, and generally they do not distinguish between creativity and innovation (Hughes et al., 2018). As such, our knowledge of what leaders can do to stimulate team creativity

and innovation is—despite the increased research attention—still rather limited (Anderson, Potočnik, & Zhou, 2014) and more information on the topic is needed.

A type of leadership that has gained interest recently is *visionary leadership*. Visionary leadership has been defined as the “communication of an image of a future for a collective with the intention to persuade others to contribute to the realization of that future” (Van Knippenberg & Stam, 2014, p. 243). Conceptual analyses suggest that visionary leadership (D'Intino, Boyles, Neck, & Hall, 2008; Kirkpatrick, 2004), more than any other style of leadership, may be an important predictor of change and innovation (Van Knippenberg & Stam, 2014). The goal of the current study is to provide empirical evidence for the influence of visionary leadership on team creativity and innovation. We focus specifically on teams, because teams are not only the building blocks of organizations, but they are also the focal work unit for managing change and innovation (Wang, Kim, & Lee, 2016). We argue that the influence that visionary leaders may have on team creativity and innovation could be explained by *goal alignment*. That is, we argue that visionary leaders may be more successful in ensuring that all team members share the same vision, and as such enhance the probability that they collectively strive towards its realization (see Berson & Avolio, 2004). This goal alignment, in turn, could foster team

creativity and innovation. Moreover, we propose that the indirect path from visionary leadership to team creativity and innovation will be strengthened by communication quality within teams. Communication is vital for processing information and ideas (Hinsz, Tindale, & Vollrath, 1997), and hence should also contribute to teams' processing of a visionary leader's persuasive communication. Communication quality may thus be a potentially influential moderator of the relationship between visionary leadership and team creativity and innovation.

In sum, this paper's purpose is to contribute to the theoretical development of the visionary leadership literature by investigating its relationship with team creativity and innovation. We do so using the results of two studies. The first study, moreover, addresses the mediating role of goal alignment in the visionary leadership–team creativity and innovation relationship. The second study expands on this model and also investigates the extent to which communication quality functions as a boundary condition for this relationship (see Figure 1).

2 | VISIONARY LEADERSHIP

Leadership has been acknowledged theoretically as a key predictor of innovation (e.g., Mumford, Scott, Gaddis, & Strange, 2002; Eisenbeiss, Van Knippenberg, & Boerner, 2008). However, most empirical studies focus on transformational leadership as a driver of employee and team creativity and innovation (Bass, 1985; Hughes et al., 2018). Studies on visionary leadership, a related but distinct concept, are largely lacking. Visionary leadership and transformational leadership approaches have in common that a *vision* is seen as a key driver of change. While visionary leadership theory centres on the importance of the creation and communication of a compelling vision, transformational leadership theory also includes several elements that are conceptually distinct from vision creation and communication (e.g., individualized consideration, idealized influence, etc.) (Avolio, Waldman, & Yammarino, 1991). We focus on visionary leadership here, because no other type of leadership addresses the construction and conveyance of ideal future states so directly as

visionary leadership (Van Knippenberg & Stam, 2014). As such, visionary leadership seems most suitable to explain creativity and innovation because both creativity and innovation imply change and are grounded in desired or expected future states (Martins & Terblanche, 2003). Indeed, the generation and implementation of new ideas are ways to move towards and realize those future states (e.g., West & Farr, 1990).

2.1 | Theory on visionary leadership

Visionary leadership revolves around the communication of an image of a future for a collective with the intention to persuade others to contribute to the realization of that future (Van Knippenberg & Stam, 2014). As such, visionary leadership has three core components. Firstly, visionary leaders need to *develop* a vision (e.g., Carton, Murphy, & Clark, 2014). This vision can be seen as a future image of what the employees can accomplish (i.e., ultimate goals), or as general end-states that reflect the values, goals and aspirations of the collective (Carton & Lucas, 2018; Yukl, 2001). To develop a vision, leaders must have a keen ability to see beyond the current circumstances and to identify emerging trends or relevant new developments to guide followers' behaviour and performance to grasp the unfolding opportunities (see Conger & Kanungo, 1987).

Secondly, having developed a vision, it needs to be effectively *communicated* to followers (Carton et al., 2014; Kirkpatrick, 2016; Tichy & Devanna, 1986). The vision contains information regarding desired outcomes, and hence can help followers adapt their performance to these goals. This is, of course, only possible if they know exactly what the vision entails. In other words, it is not enough for a leader to have a vision: a vision also needs to be conveyed to others in order to have an effect.

Thirdly, and relatedly, visionary leaders need to *persuade* others (i.e., followers) to contribute to the realization of a collective future (Dvir, Kass, & Shamir, 2004; Yukl, 2012). By doing so, a visionary leader provides a sense of purpose to individuals, and actively contributes to the satisfaction of people's need to belong. Notably,

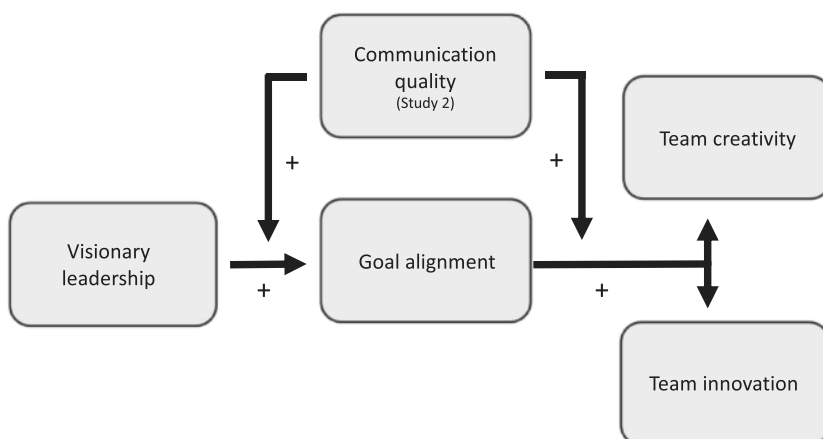


FIGURE 1 Conceptual model

according to Oswald, Mossholder, and Harris (1994), for a vision to be adopted and salient, organizational members must feel that a clear vision has been articulated, that the leadership of the company shares the vision, and that the vision is appropriate. Visionary leaders persuade followers by using image-based rhetoric and by displaying enthusiasm and confidence in the followers' ability to reach the end-goals (Carton et al., 2014).

Thus, in short, what characterizes visionary leadership is the *development* of a clear and appealing vision, and the effective *communication* of this vision to followers in such a way that they are *persuaded* to contribute to the vision's realization.

2.2 | Consequences of visionary leadership

Several studies have addressed the effects that visionary leadership may have. So far, this previous research has shown that visionary leadership predicts outcomes relating to both followers and the organization. Regarding the former, visionary leadership has been found to be related to, for example, follower performance and perceptions of leadership effectiveness (Awamleh & Gardner, 1999; Kirkpatrick, 2004), collective self-confidence among followers (Paul, Costley, Howell, Dorfman, & Trafimow, 2001), and follower affective commitment (Dvir et al., 2004). Regarding organization-level outcomes, visionary leadership has been linked to the effects of organizational change efforts (Groves, 2006), organizational performance and growth (e.g., Baum, Locke, & Kirkpatrick, 1998), as well as staff and customer satisfaction (Kantabutra, 2006).

Surprisingly little is known about the relationship between visionary leadership and team creativity and innovation. However, because the realization of a vision will require openness to change, as well as the generation of new goals and new strategies, creativity and innovation should be among the most important outcomes stimulated by visionary leaders. In fact, theory on visionary leadership has repeatedly linked it to creativity and innovation (e.g., Conger, 1995; D'Intino et al., 2008; Merritt & DeGraff, 1996; Morden, 1997; Taylor, Cornelius, & Colvin, 2014; Westley & Mintzberg, 1989), and indeed some available evidence indirectly suggests that visionary leadership may play an important role in shaping the circumstances and boundary conditions required for successful team creativity and innovation. Firstly, Sarros, Cooper, and Santora (2011) found evidence that visionary leadership predicts employees' perception of support for innovation in their organizations, which, in turn, is an important predictor of team creativity and innovation (for overviews, see Amabile, Conti, Coon, Lazenby, & Herron, 1996; Hülshager, Anderson, & Salgado, 2009). Secondly, team climate research has shown that the presence of a shared and compelling vision or set of goals is an important predictor of team creativity and innovation (e.g., Anderson & West, 1996; Hülshager et al., 2009). Creativity and innovation are processes that are imbued with uncertainty and it is by providing a clear direction of where the organization should go that leaders are often thought to contribute to creativity and innovation (Mumford et al., 2002).

Thirdly, while the relationship between leadership and team creativity and innovation has been documented in general (e.g. Eisenbeiss et al., 2008; Kahai, Sosik, & Avolio, 2003; Sosik, Kahai, & Avolio, 1998; West et al., 2003), it seems that particularly leadership styles that have a visionary component (such as transformational leadership) positively predict employee creativity and innovation (e.g. Eisenbeiss & Boerner, 2013; Eisenbeiss et al., 2008; Sosik et al., 1998). This suggests that visionary leadership is a particularly plausible predictor of team creativity and innovation in organizations.

2.3 | Visionary leadership, creativity, innovation and goal alignment

Taken together, the available research suggests that visionary leadership should have a positive effect on team members' creative and innovative behaviour. However, it is important to understand the mechanism by which visionary leadership leads to team creativity and innovation. We hypothesize that *goal alignment* will mediate the relationship between visionary leadership and team creativity and innovation. Since formulating and persuasively communicating a vision is at the core of visionary leadership, it seems plausible that visionary leadership will have a positive effect on team creativity and innovation by transferring the vision to group members so that a shared perception of the desired future state is realized. *Goal alignment*, or "a shared idea of a valued outcome which represents a higher order goal and a motivating force at work" (West, 1990, p. 310), has been argued to exist when team members are in agreement with the objectives and find that they are clear and worthwhile (Anderson & West, 1996, 1998). Arguably, under visionary leadership, followers align their goals to the vision because they all feel motivated to pursue the collective future that they adopt as their own (Stam, Lord, Van Knippenberg, & Wisse, 2014). Indeed, supporting this line of argumentation, Carton et al. (2014) found that the amount of vision imagery used by the leader (a way of communicating a vision) predicted the extent to which group members had shared perceptions of the group's goal.

Teams with a shared goal are more likely to feel committed to this goal and to improve their innovative performance because their efforts have focus and direction (Haas, Sypher, & Sypher, 1992). Indeed, empirical findings have pointed out that for a team to be innovative, team members need to be committed to team objectives and share a sense of purpose (e.g., Cardinal, 2001; Gilson & Shalley, 2004; Rickards, Chen, & Moger, 2001). Moreover, other studies have shown that goal alignment is an important predictor of team creative and innovative performance (e.g. Anderson & West, 1996, 1998; Bain, Mann, & Pirola-Merlo, 2001; Curral, Forrester, Dawson, & West, 2001; Hülshager et al., 2009; Pearce & Ensley, 2004). Therefore, in this study we argue that visionary leadership will be positively related to team creativity and innovation through goal alignment.

Hypothesis 1a. Visionary leadership has an indirect effect on team creativity, mediated by goal alignment.

Hypothesis 1b. Visionary leadership has an indirect effect on team innovation, mediated by goal alignment.

3 | OVERVIEW OF THE PRESENT RESEARCH

To investigate the effects of visionary leadership on team creativity and innovation through goal alignment, we adopted a multiple-study, multiple-method approach. In Study 1, an experimental study, we manipulated visionary leadership in groups working on an innovative task and assessed group members' goal alignment and team creativity and innovation. Notably, with this study we answer to the call for more experimental research in studies on leadership and creativity and innovation (Hughes et al., 2018). Study 2, a field study, aimed to replicate the results of our first study in a real-life setting. In this study we extended our model to investigate if the relationship between goal alignment and team innovation and creativity is moderated by communication quality.

4 | STUDY 1

4.1 | Participants and procedure

Participants in this study were undergraduate students of a university in the northern part of the Netherlands. A total of 150 students (64% female) participated voluntarily in exchange for partial course credits or €7. Participants' mean age was 22.51 years ($SD = 2.87$). Participants worked in teams of three ($N = 50$ teams) and they were randomly assigned to one of two leadership conditions (visionary vs. control).

Participants were invited to participate in a study that purportedly latched on to a new university marketing campaign aimed at engaging students and staff in the topic of sustainability. In the first part of the experiment, participants were seated in individual cubicles, where they read the instructions and were confronted with the experimental manipulation. In the second part of the experiment, participants were asked to work with their group to come up with original ideas and design a poster to promote sustainability. Participants had 25 minutes for this task. After the data collection, participants received compensation and a debriefing through e-mail. Ethical approval for this experiment was granted by the Ethics Committee Psychology at the university where the study was conducted.

The visionary leadership manipulation was conducted by using a speech (e.g., Awamleh & Gardner, 1999; Johnson & Dipboye, 2008; Rietzschel, Wisse, & Rus, 2017; Stam, Van Knippenberg, & Wisse, 2010) that was displayed on the computer. The speech allegedly came from a member of the board of the university, who had the

task of leading an upcoming marketing campaign to promote sustainability in the university. Participants were informed that the leader had a message for them, explaining the importance of creativity for this task, and that they should pay attention to it because they would be asked questions about it.

In the *visionary leadership condition*, the leader gave a speech that was future-oriented (e.g., "The creation of the poster is actually the start of a successful career!"), full of optimism (e.g., "You and your teammates have all that it takes to make this future reality") and confidence in the participants' capabilities (e.g., "I am confident that you can be that person"; Berson, Shamir, Avolio, & Popper, 2001), and that made ample use of image-based rhetoric (e.g., "All of you can be creative, innovative, leaders of a new world"; Carton et al., 2014; Van Knippenberg & Stam, 2014). In the *control condition*, the leader linked the task to the participant's short-term goals (e.g., "Making the poster is actually helpful for finishing your study"). The leader did not specifically express his optimism (e.g., "You and your co-workers have what is required to attain this goal") or confidence (e.g., "I cannot predict whether you will perform adequately") and did not include image-based rhetoric (e.g., "All of you can increase your competence with regard to creativity and innovation").

After reading the visionary leadership manipulation, participants were brought to a table where they met their group members and proceeded with the group task (making a poster about sustainability). We video-taped interactions and made transcripts of the communication. The coding process (see below for more information about the coded variables) was condition blind. A single "master" rater coded all videos. To further ensure reliability, a second rater coded a sample of 16 groups (representing 32% of the sample) to assess the inter-rater reliability (Heyman, Lorber, Eddy, & West, 2014).

4.2 | Measures

4.2.1 | Manipulation check visionary leadership

The effectiveness of the visionary leadership manipulation was assessed with eight items based on Parco-Tropicales and de Guzman (2014). Participants were asked to reflect on their leader and to indicate their agreement to items like "I think he is visionary", "I think he is future-oriented", or "I think he takes a long-term view" on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Cronbach's alpha for this scale was .85.

4.2.2 | Goal alignment

Goal alignment was measured in two ways. Firstly, we assessed self-reported goal alignment using the 11-item vision subscale from Anderson and West's team climate inventory (1996). Example items were "The team has clear goals", "Other members of the team are committed to these goals" and "In my opinion, the team goals are

useful and appropriate". Responses were scored on a 5-point Likert-scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha for this scale was .91.

Secondly, we assessed goal alignment by counting the number of times the word "we" was uttered during the team's interaction using Digitext Diction software. Methods of linguistic analyses are more frequently used to assess group member interactions (e.g., Pennebaker & Francis, 1996). The advantage of assessing aspects of group interaction using language is that it may be less affected by bias than self-report measures traditionally are considered to be (see DeAndrea, Shaw, & Levine, 2010). Therefore, apart from the more traditional self-report scale to examine group processes, we also included a method that allowed for observation from a realistic, naturally occurring setting, and as such aimed to add an ecologically valid approach to our measurement of goal alignment. We opted to count the number of 'we's' during conversation, because this word count has been used as an indicator of the salience of the collective identity (DeAndrea et al., 2010; Mael & Ashforth, 1992; Stone & Pennebaker, 2002) and thus also taps into the extent to which there is a collective goal orientation (Brewer & Gardner, 1996). Indeed, the stronger the collective identity, the more group members focus on shared group goals instead of on individual goals. Therefore, by counting the number of 'we's' that were uttered during task performance, we are capturing the extent to which participants focus on mutual goals instead of on idiosyncratic individual goals.

4.2.3 | Team creativity

To assess team creativity, we measured fluency of idea generation. Fluency was measured by counting the total number of ideas generated by the group. The level of agreement between coders was calculated using intraclass correlation (ICC3; McGraw & Wong, 1996). ICC3 indicated a good level of agreement (ICC3 = .77; Cicchetti, 1994).

4.2.4 | Team innovation

Team innovation was measured by scores that were provided for the final poster by two independent coders who were blind to the experimental conditions. Both coders provided one rating score for the originality of content and one rating score for the originality of materials used in the posters on a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very much*). The originality of the content of the posters was rated by comparing it to the other posters. The originality of the materials was rated based on the different variety of materials (e.g. markers, pencils, coloured paper, glue) used by the participants. The inter-rater reliability was calculated and revealed a high level of agreement (ICC3 = .87; Cicchetti, 1994). We therefore used the average of both raters' scores for the analyses.

4.2.5 | Control variable

Because the study was conducted in English and the effectiveness of the manipulation was likely to depend on participants' full understanding of the speech, we controlled for English language proficiency by asking participants to indicate their proficiency in English on a scale from 1 (*not at all proficient*) to 7 (*extremely proficient*).

5 | RESULTS

5.1 | Preliminary analyses

We first assessed if aggregation of the manipulation check and the goal alignment measure to the group level would be acceptable. For the manipulation check, the ICC1 value (reflecting the extent to which members of the same group responded similarly) was .03. In addition, the r_{wg} value (reflecting the level of agreement within a work group; James, Demaree, & Wolf, 1984) was .58. Because these values do not warrant aggregation to the group level, we analysed the manipulation checks on the individual level instead. For the group alignment measure, ICC1 was .14, which a one-way analysis showed was statistically significant ($p < .001$), and the r_{wg} value was .85. We conclude that for the group alignment measure, aggregation is justified.

Means, standard deviations and correlations among the measures employed in this study are shown in Table 1. Note that a significant positive correlation was found between visionary leadership and team creativity ($r = .31, p = .028$) but—surprisingly—not between visionary leadership and team innovation. In addition, visionary leadership was found to be positively correlated with goal alignment as measured by the number of 'we's' ($r = .25, p = .079$), but only marginally. Interestingly, goal alignment as measured by the number of 'we's' was found to be positively, but only marginally significantly, correlated to team creativity ($r = .28, p = .051$), but not to team innovation ($r = .05, p = .741$).

5.2 | Manipulation check visionary leadership

An independent samples *t*-test (at the individual level) suggested that the manipulation of visionary leadership was successful, $t(150) = 3.48, p < .001$. The speech of the visionary leader was perceived to be more visionary ($M = 5.16; SD = .89$) than that of the non-visionary condition ($M = 4.61; SD = 1.06$).³

³For the aggregated group-level data, the results were the same: Groups in the visionary leadership condition felt the leader was more visionary ($M = 5.16$) than did groups in the control condition ($M = 4.60$), $t(25) = -3.64, p < .01$.

TABLE 1 Correlations and descriptive statistics—Study 1

	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1. Visionary leadership	0.50	0.50	–					
2. Goal alignment—we	55.46	19.89	.25 [†]	–				
3. Goal alignment—scale	4.26	0.38	.05	.10	–			
4. Team creativity	9.48	5.33	.31*	.27 [†]	.22	–		
5. Team innovation	3.15	0.83	.11	.05	.23	.07	–	
6. English proficiency	5.99	0.48	–.06	.26 [†]	.06	–.10	–.02	–

[†] $p < .10$,

* $p < .05$

5.3 | Hypothesis testing

To test our hypotheses we ran separate mediation models for our dependent variables team creativity and team innovation using the PROCESS macro developed by Hayes (2012; model 4, 10,000 bootstrap samples, 95% bias corrected and accelerated confidence intervals; Efron & Tibshirani, 1994). We present the results separately for both operationalizations of goal alignment.

5.4 | Team creativity

H1a states that visionary leadership is positively related to team creativity via goal alignment. We found that visionary leadership was not a significant predictor of self-reported goal alignment, $b = .05$, $SE = .11$, $p = .67$, and self-reported goal alignment was not a significant predictor of team creativity, $b = 2.95$, $SE = 2.71$, $p = .11$ (see Table 2). Moreover, visionary leadership was not a significant

predictor of team creativity after controlling for self-reported goal alignment, $b = 3.29$, $SE = 1.63$, $p = .11$. Bootstrap analyses indicated that the indirect coefficient was not significant, $b = .01$, $SE = .26$, 95% $CI = -.49-.61$.

Visionary leadership was a marginally significant predictor of goal alignment as measured by the number of 'we's', $b = 10.49$, $SE = 5.34$, $p = .06$, which in turn was a significant predictor of team creativity, $b = .16$, $SE = .05$, $p < .05$ (see Table 2). Visionary leadership was no longer a significant predictor of team creativity after controlling for the number of 'we's', $b = 1.57$, $SE = 1.92$, $p = .42$. Bootstrap analyses indicated that the indirect coefficient was significant, $b = 1.73$, $SE = 1.13$, 95% $CI = .14-4.75$.

5.5 | Team innovation

H1b stated that visionary leadership is positively related to team innovation via goal alignment. Results (see Table 3) indicated that visionary

TABLE 2 Mediation analysis summary of the Visionary leadership–Team creativity relationship

Mediator variable model (DV = Goal alignment)								
Predictor	Goal alignment—we			Goal alignment—scale				
	b^a	SE	t	b^a	SE	t		
Constant	–17.89	34.32	–.52	3.96	.71	5.59**		
Visionary leadership	10.49	5.34	1.96	.05	.11	.42		
Language proficiency	11.37	5.67	2.00	.05	.12	.41		
Dependent variable model (DV = Team creativity)								
Predictor	Goal alignment—we			Goal alignment—scale				
	b^a	SE	t	b^a	SE	t		
Constant	–7.22	11.88	–.61	–11.34	16.99	–.67		
Goal alignment	.16	.05	3.29*	.29	2.71	.11		
Visionary leadership	1.57	1.92	.82	3.29	2.05	1.60		
Language proficiency	3.86	2.04	1.89	5.73	2.18	2.63*		
Indirect effects for visionary leadership on team creativity								
	Goal alignment—we			Goal alignment—scale				
	Effect	Boot SE	BootLLCI	BootULCI	Effect	Boot SE	BootLLCI	BootULCI
Goal alignment	1.73	1.13	.14	4.75	.01	.26	–.49	.61

^aBootstrap (Boot) sample size = 10,000, Level of confidence interval = 95% unstandardized regression coefficients.

* $p < .05$

** $p < .01$.

TABLE 3 Mediation analysis summary of the Visionary leadership–Team innovation relationship

Mediator variable model (DV = Goal alignment)								
Predictor	Goal alignment–we			Goal alignment–scale				
	b^a	SE	t	b^a	SE	t		
Constant	–17.89	34.32	–.52	3.96	.71	5.59**		
Visionary leadership	10.49	5.34	1.96	.05	.11	.42		
Language proficiency	11.37	5.67	2.00	.05	.12	.41		
Dependent variable model (DV = Team innovation)								
Predictor	Goal alignment–we			Goal alignment–scale				
	b^a	SE	t	b^a	SE	t		
Constant	3.23	1.56	2.07*	1.26	1.96	.64		
Goal alignment	.00	.01	.18	.49	.31	.31		
Visionary leadership	.17	.25	.66	.16	.24	.24		
Language proficiency	–.04	.27	–.14	–.05	.25	.25		
Indirect effects for visionary leadership on team creativity								
	Goal alignment–we				Goal alignment–scale			
	Effect	Boot SE	BootLLCI	BootULCI	Effect	Boot SE	BootLLCI	BootULCI
Goal alignment	.01	.08	–.12	.22	.02	.07	–.06	.25

^aBootstrap (Boot) sample size = 10,000, Level of confidence interval = 95% unstandardized regression coefficients.

* $p < .05$

** $p < .01$.

leadership was not a significant predictor of self-reported goal alignment, $b = .05$, $SE = .11$, $p = .67$, and that self-reported goal alignment was not a significant predictor of team innovation, $b = .49$, $SE = .31$, $p < .12$. Visionary leadership was not a significant predictor of team innovation after controlling for this measure of goal alignment, $b = .15$, $SE = .24$, $p = .51$. Bootstrap analyses indicated that the indirect coefficient was not significant, $b = .02$, $SE = .07$, 95% $CI = -.06-.25$.

Moreover, goal alignment as measured by the number of 'we's' was also not a significant predictor of team innovation, $b = .00$, $SE = .01$, $p = .85$ (see Table 3). Visionary leadership was not a significant predictor of team innovation after controlling for this measure of goal alignment, $b = .17$, $SE = .25$, $p = .51$. Bootstrap analyses indicated that the indirect coefficient was not significant, $b = .01$, $SE = .08$, 95% $CI = -.12-.22$.

6 | DISCUSSION STUDY 1 AND INTRODUCTION STUDY 2

The results partly supported our prediction that visionary leadership is associated with team creativity by promoting the followers' alignment to the team goals. However, the results did not confirm our prediction that teams would be more innovative under visionary leadership through goal alignment. Our results suggest that, even though teams were more aligned and generated more ideas under visionary leadership, they were not able to create an innovative product. One possible explanation could be that visionary leadership inspires people in the creative phase, but not so much in the implementation stage.

This might be because visionary leadership is more concerned with providing a picture of the future and not necessarily with paving the way (i.e., it is more outcome than process oriented). Indeed, previous research shows that implementation benefits from the leader's ability to organize and bring structure to the process (Anderson & King, 1991; Anderson & King, 1993; Keller, 2006). A compelling vision may not be sufficient for group members to implement ideas, because this requires clarity on the means to achieve the end-goal, such as resources, planning, monitoring and processes to exchange, integrate and disseminate ideas (see also Perry-Smith & Mannucci, 2017). Another explanation could be that an excessive focus on creativity can undermine innovation. That is, if people spend more time exchanging ideas, it might be that idea implementation receives less attention and ultimately this affects the outcome. This is in line with recent findings showing that an excessive focus on creativity can lead to suboptimal performance in idea implementation (e.g. Škerlavaj, Černe, & Dysvik, 2014).

Study 2 is a follow-up study to further understand the influence of visionary leadership on team creativity and innovation. This study was conducted among a working population, rather than among students. In addition, we aimed to extend the findings of Study 1 in two ways. Firstly, based on earlier work by Hughes et al. (2018; see also Perry-Smith & Mannucci, 2017), we included *idea promotion* as part of our innovation construct to capture the whole innovation process from creativity to innovation. Secondly, we included a potential moderator to test whether the indirect path from visionary leadership to team innovation and team creativity depends on another factor. More specifically, we propose that communication quality or "the extent to which communication among team members is clear,

effective, complete, fluent, and on time" (González-Romá & Hernández, 2014, p. 1046) could strengthen the pathway of visionary leadership to team innovation through goal alignment.

There are several reasons why communication quality within the team is likely to moderate this path. For one thing, although leaders are in a unique position to shape the circumstances surrounding a team's innovative performance, followers are not passive recipients of leader influence, but are actively involved in the leadership process as well (Meindl, 1995). Specifically, given the persuasive and informational nature of leader vision communication, this persuasive message will most likely lead to the actual development of a shared vision and influence subsequent behaviour if it is processed systematically and deeply (cf. Petty & Cacioppo, 1986). Indeed, intragroup communication quality can be seen as a crucial aspect of group-level information processing (Hinsz et al., 1997). Visionary leadership will be particularly effective when there is high communication quality within the team, as this helps teams to process the notions behind the vision and increases the probability that members' goals are aligned with the vision. Secondly, teams will benefit from communication quality in acting upon the vision, because communication gives the team access to goal-relevant information throughout the innovation process. Teams with high levels of communication quality are better able to easily clarify team roles and norms (Cannon-Bowers, Tannenbaum, Salas, & Volpe, 1995), and hence are more likely to critically generate, promote and (coordinate to) implement ideas according to the goals and reject those that don't match.

In short, then, the effects of visionary leadership on team innovation should be stronger when communication quality is high, because effective intra-team communication helps teams translate the vision into shared goals, and to translate the shared goals into action.

Hypothesis 2a. Communication quality will strengthen the indirect path from visionary leadership to team creativity through goal alignment.

Hypothesis 2b. Communication quality will strengthen the indirect path from visionary leadership to team innovation through goal alignment.

7 | METHOD

7.1 | Respondents and procedure

A total of 350 respondents completed an online survey in exchange for \$1. Forty-two respondents were excluded for failing two out of three control questions (Kittur & Kraut, 2008). Of the remaining 308 respondents, 129 were female. Respondents' ages ranged from 21 to 72 with an average of 34.31 years ($SD = 9.77$). Respondents' tenure in their current job was 5.44 years ($SD = 3.41$), 58% held a leadership position and the average number of direct subordinates for those in a leadership position was 9.12 ($SD = 9.47$).

Respondents were recruited via Mechanical Turk. Previous research has shown that the quality of data provided by Mechanical Turk met or exceeded the standards obtained via traditional methods (e.g., Paolacci & Chandler, 2014). Participants read a brief description of the survey, were told that they would be asked several questions about the team they worked in, were informed that their responses would be treated confidentially, gave their informed consent, and answered some questions that served as demographic variables.

7.2 | Measures

7.2.1 | Visionary leadership

Visionary leadership was assessed with an adapted version of the 12-item visionary leadership scale developed by Parco-Tropicales and De Guzman (2014). Items include "In your opinion the leader of the team has a clear understanding of where the team is going" and "In your opinion the leader of the team places emphasis on positive future challenges and opportunities." The items were answered on a 7-point scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). Cronbach's alpha for this scale was .93.

7.2.2 | Goal alignment

Goal alignment was measured with an adapted version of the 11-item vision subscale from the Anderson and West (1996) team climate inventory scale. Items include "I fully agree with the team goals" and "I believe the team goals can actually be achieved." The items were answered on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Cronbach's alpha for this scale was .92.

7.2.3 | Communication quality

Communication quality was measured with an adapted version of the 5-item semantic differential scale of communication quality developed by Mohr and Sohi (1995). Items captured the extent to which the members perceived communication flows within their team to be adequate, timely, accurate, complete and credible on a scale ranging from 1 to 7 (the scale anchors depended on the item). Items include "To what extent do you feel that the communication in the team is inaccurate or accurate?" and "To what extent do you feel that the communication in the team is untimely or timely?" Cronbach's alpha for this scale was .91.

7.2.4 | Team creativity and innovation

Team creativity and innovation were assessed with the 9-item Innovative Job Performance scale by Janssen (2001), adapted to the team context. This scale measures idea generation, idea promotion

and idea realization (each with three items). *Team creativity* was measured with the idea generation subscale. Items include “How often does the team create new ideas for improvements?” and “How often does the team generate original solutions for problems?”. Cronbach's alpha for this scale was .89. *Team innovation* was measured with the idea promotion and idea realization subscales (Hughes et al., 2018). Items include “How often does the team mobilize support for innovative ideas?” and “How often does the team transform 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 .82.

8 | RESULTS

8.1 | Preliminary analyses

Although all measures were previously validated in other studies, we performed confirmatory factor analyses using Mplus (Muthén & Muthén, 2007) on our predictor variables (i.e. visionary leadership, goal alignment and communication quality). The first model we tested was a single factor model in which all items loaded on the same factor. The fit indices were: $\chi^2(308) = 1392.33$, $p < .001$, RMSEA = .09, CFI = .71. The second model we tested was a two-factor model where we combined visionary leadership and goal alignment because they are the most highly correlated. The fit indices were: $\chi^2(308) = 1049.02$, $p < .001$, RMSEA = .08, CFI = .80. Finally, we tested a three-factor model corresponding to three scales used in the study. The fit indices were: $\chi^2(308) = 652.44$, $p < .001$, RMSEA = .06, CFI = .91. In line with our expectations, the three-factor model provided the best fit to the data.

We analysed our outcome variable by assessing a bi-factor model—a multidimensional structural model specifying that each item on a measure is an indicator of a single factor (labelled the ‘target’ dimension), and each item also is an indicator of one (or more) orthogonal group factors (see Reise, 2012). This model is applicable given that our team creativity and innovation measure assesses both a general tendency for overall innovative job performance behaviour (see Janssen, 2001) as well as two sub-components. The fit indices were $\chi^2(102) = 39.880$, $p < .002$, RMSEA = .063, CFI = .96.

Table 4 presents the means, standard deviations and zero-order correlations of the study.

TABLE 4 Correlations and descriptive statistics—Study 2

	M	SD	1	2	3	4	5
1. Visionary leadership	5.68	0.82	–				
2. Communication quality	5.83	1.04	.53**	–			
3. Goal alignment	4.12	0.57	.67**	.57**	–		
4. Team creativity	4.54	1.29	.44**	.30**	.42**	–	
5. Team innovation	4.37	1.34	.44**	.31**	.42**	.83**	.84**

** $p < .01$.

8.2 | Hypothesis testing

In order to test the indirect path between visionary leadership and team innovative performance through goal alignment, we used the PROCESS macro for SPSS (Hayes, 2012; model 58). In this analysis we simultaneously tested for the moderating effect of communication quality on the relationship between visionary leadership and goal alignment and between goal alignment and team creativity and team innovation.

8.2.1 | Team creativity

H2a predicted that communication quality will strengthen the indirect path from visionary leadership to team creativity through goal alignment. The results did not support our hypothesis (see Table 5). The results revealed a significant positive relationship between visionary leadership and goal alignment ($\beta = .36$, $p < .001$) and a positive relationship between goal alignment and team creativity ($\beta = .57$, $p < .001$). The test of indirect effects revealed that the effect of visionary leadership on team creativity was mediated by goal alignment (indirect effect = 0.20, 95% CI = 0.09–0.34). However, the effect of communication quality on the relationship between visionary leadership and goal alignment (index = 0.088, CI = –0.01–0.09) was not significant. In addition, the effect of communication quality on the relationship between goal alignment and team creativity ($\beta = 0.17$, $p = .074$) was only marginally significant, albeit in the hypothesized direction.

8.2.2 | Team innovation

H2b predicted that communication quality will strengthen the indirect path from visionary leadership to team innovation through goal alignment. The results partially supported our hypothesis (see Table 6). The results revealed a significant positive relationship between visionary leadership and goal alignment ($\beta = .36$, $p < .001$) and a positive relationship between goal alignment and team innovation ($\beta = .57$, $p < .001$). The test of indirect effects revealed that the effect of visionary leadership on team innovation was mediated by goal alignment (indirect effect = 0.20, 95% CI = 0.09–0.34). The effect of communication quality on the relationship between visionary leadership and goal alignment (index = 0.088, CI = –0.01–0.09) was not

TABLE 5 Moderated mediation analysis summary of the Visionary leadership–Team creativity relationship

Mediator variable model (DV = Goal alignment)				
Predictor				
	<i>b</i> ^a	SE	<i>t</i>	
Constant	−.02	.02	−.75	
Visionary leadership	.36	.03	10.84**	
Communication quality	.17	.02	6.44**	
Visionary leadership × communication quality	.04	.02	1.71	
Dependent variable model (DV = Team creativity)				
Predictor				
	<i>b</i> ^a	SE	<i>t</i>	
Constant	4.84	.07	62.01**	
Goal alignment	.57	.16	3.41**	
Visionary leadership	.40	.11	3.60**	
Communication quality	.08	.08	.99	
Goal alignment × communication quality	.17	.09	1.79	
Conditional indirect effects at values of the moderator				
	Effect	Boot SE	BootLLCI	BootULCI
Communication quality (high = +1SD)	.12	.06	.02	.24
Communication quality (low = −1SD)	.30	.09	.13	.50

^aBootstrap (Boot) sample size = 10,000, Level of confidence interval = 95% unstandardized regression coefficients.

***p* < .01.

TABLE 6 Moderated mediation analysis summary of the Visionary leadership–Team innovation relationship

Mediator variable model (DV = Goal alignment)				
Predictor				
	<i>b</i> ^a	SE	<i>t</i>	
Constant	−.02	.02	−.75	
Visionary leadership	.36	.03	10.84**	
Communication quality	.17	.03	6.44**	
Visionary leadership × communication quality	.04	.02	1.71	
Dependent variable model (DV = Team innovation)				
Predictor				
	<i>b</i> ^a	SE	<i>t</i>	
Constant	4.30	.07	57.66**	
Goal alignment	.57	.17	3.31**	
Visionary leadership	.41	.11	3.65**	
Communication quality	.12	.09	1.42	
Goal alignment × communication quality	.21	.10	2.17*	
Conditional indirect effects at values of the moderator				
	Effect	Boot SE	BootLLCI	BootULCI
Communication quality (high = +1SD)	.11	.06	.00	.23
Communication quality (low = −1SD)	.32	.09	.14	.51

^aBootstrap (Boot) sample size = 10,000, Level of confidence interval = 95% unstandardized regression coefficients.

**p* < .05

***p* < .01.

significant. However, in line with our hypotheses, the effect of communication quality on the relationship between goal alignment and team innovation was significant ($\beta = 0.21, p = .030$).

Simple slopes analyses (see Figure 2) showed that goal alignment was positively associated with team innovation, especially when communication quality was high (i.e., one standard deviation above the

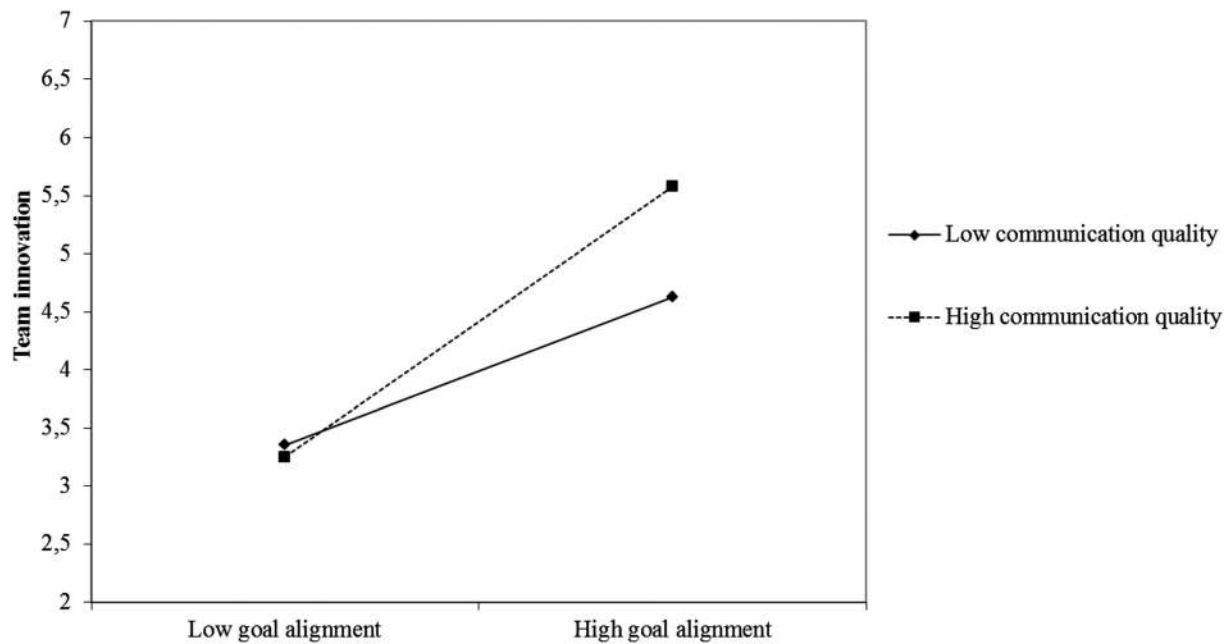


FIGURE 2 Interaction between goal alignment and communication quality in predicting team innovation

mean; $\beta = 1.15$, 95% CI = 0.80–1.59), and less so when communication quality was low (one standard deviation below the mean; $\beta = 0.60$, 95% CI = 0.24–0.96).

9 | DISCUSSION

The results of this study support our earlier findings that, with higher levels of visionary leadership, team members align their goals and subsequently are more creative. In addition, the results of Study 2 show that visionary leadership is positively related to team innovation by promoting goal alignment. However, such a relationship was not found in Study 1.

Further, these results partly support our prediction that communication quality will strengthen the indirect path from visionary leadership to team creativity and innovation through goal alignment. Firstly, and in line with our hypotheses, communication quality strengthened the relationship between goal alignment and team innovation, but not creativity. This could be because creativity is more of an intra-individual cognitive process (Rank, Pace, & Frese, 2004) and therefore does not necessarily require communication between team members. Innovation, in contrast, is an inter-individual social process and for that reason relies heavily on communication between team members. Secondly, communication quality did not strengthen the relationship between visionary leadership and goal alignment. A possible explanation for this is that the clarity and persuasion components of visionary leadership may reduce the need to actively process information. In other words, teams with a clear vision may not benefit as much from communication quality because clear shared goals are already implicit in the vision.

10 | GENERAL DISCUSSION

While visionary leadership has been acknowledged as a key potential predictor of change and innovation (Van Knippenberg & Stam, 2014), this research is one of the first to focus on the relationship between visionary leadership and team creativity and innovation. We argued that visionary leadership should stimulate both team creativity and team innovation because visionary leadership promotes goal alignment amongst team members, and that communication quality should strengthen this indirect path. In the current set of studies, we find that teams with a visionary leader are more likely to reach higher levels of goal alignment (Studies 1 and 2) and in consequence are more creative (Studies 1 and 2) and innovative (Study 2). In addition, we find that teams with a shared goal perform better in their innovative performance when the communication quality within the team is high (Study 2).

10.1 | Theoretical implications

Our study contributes to the theoretical development of visionary leadership in several ways. Firstly, this study contributes towards unveiling the process by which visionary leadership is related to team creativity and innovation. In consequence, this also draws attention to the relevant role of goal alignment in leadership theory. It has been suggested that goal alignment would be a consequence of visionary leadership (e.g. Stam et al., 2014). However, prior to our study, there had been no empirical studies that supported the relationship between visionary leadership and goal alignment, nor were there any studies that showed how

visionary leadership and goal alignment are related to team creativity and innovation. These results support the idea that the intention to influence others to achieve a desired future is central to the visionary leadership construct (Van Knippenberg & Stam, 2014; Yukl, 2012). Moreover, our study lays a promising avenue for future research to further uncover the role of visionary leadership in the creativity and innovation process.

Secondly, the results of the moderated mediation analysis lend additional clarity to the relationship between visionary leadership and team creativity and innovation. These findings suggest that communication quality may provide teams that share the same goal with valuable information to promote and implement ideas. This is in line with research that shows that teams perform better when they experience high levels of communication quality (Cannon-Bowers et al., 1995). Therefore, communication quality is an important variable that can augment or mitigate goal alignment's effect on team creativity and team innovation. Moreover, investigating communication quality as a moderator contributes to the visionary leadership literature by examining when and how visionary leadership has a more potent effect on team outcomes. However, it is important to mention that communication quality, contrary to our expectations, did not have an effect on the relationship between visionary leadership and goal alignment. Team members did not benefit from communication quality to reflect on the vision and develop shared goals, suggesting that visionary leaders may already be quite effective in communicating a vision without much need for further intra-team communication to align goals. Future research could test whether this is indeed the case, and attempt to uncover the behaviours and processes by which these leaders do so, as a shared vision is among one of the most important predictors of team innovation and team performance in general. However, intra-team communication (as well as communication outside the team; e.g., Hülshager et al., 2009) appears to become more important as the team moves towards promotion and implementation of its innovative ideas.

The results of Study 2 fit well within the recent literature on creativity and innovation, where it is becoming increasingly clear that creativity does not automatically carry over into innovation, and that the two are not necessarily stimulated or predicted by the same factors (e.g., Rietzschel, 2011; Somech & Drach-Zahavy, 2013). Visionary leaders may be more effective at stimulating creativity than innovation. Indeed, the results of Study 1 and participants' time use there suggest that, when it comes to idea realization, visionary leadership can be self-defeating if it only energizes people to keep working on idea generation until they have no time left for implementation (cf. Škerlavaj et al., 2014). However, as also suggested by our results in Study 2, these effects may not occur in an actual organizational setting, where the time available for projects naturally tends to be more than 25 minutes and people are more likely to be reminded by supervisors and co-workers about the importance of implementation.

10.2 | Practical implications

With regard to practice, this research suggests that supervisors should exercise visionary leadership in order to align members and to bring about creativity and innovation. Specifically, leaders should develop their abilities to create and communicate a compelling vision of the future in order to increase team members' creative and innovative behaviour. One suggestion is that supervisors monitor team members' goal alignment to ensure that they share the same vision (for instance during individual or team meetings). It is important, however, to keep in mind that visionary leadership may only bring the team's innovation efforts so far: Visionary leadership stimulates the generation of creative ideas, but this does not automatically mean that those ideas actually get implemented. Thus, for team supervisors facing problems related to the implementation of creative ideas (rather than to the generation of those ideas), visionary leadership may not be the best solution, and other factors, like supervisory support for idea implementation (Škerlavaj et al., 2014) might work better. In addition, the findings could be helpful in making leaders aware of the effect of communication quality in strengthening the relationship between visionary leadership and team creativity and innovation. Thus, leaders could promote communication quality amongst team members to increase the likelihood of team success in creativity and innovation. Rather than providing teams with a compelling vision and trusting that this will be stimulating enough, visionary leaders need to also pay attention to team members' ability and willingness to process the vision and discuss its implications. Finally, our findings suggest that those in management positions could benefit from visionary leadership training and that team members could benefit from training programmes on communication quality.

10.3 | Limitations and future research

Of course, this research is not without its limitations. Our sample for Study 1 may have had some drawbacks. First, the size of the sample was limited, which resulted in low statistical power. Moreover, the sample was a student sample, which may raise concerns with respect to representativeness and generalizability (for instance because students are a relatively homogeneous group of well educated, young people; see Hanel & Vione, 2016; Peterson & Merunka, 2014; however, see also Rietzschel et al., 2017). Although we were able to replicate our results with a sample of employees in Study 2, the limitation of that study was that it was a cross-sectional single-source study, so same source bias could potentially be an issue. In addition, given that Study 2 was conducted using a sample of individual workers and not of teams, future research may focus on replicating the findings of the field study using a different methodological approach (e.g. conducting a survey of teams). Also note that in Study 1 we found insufficient support for aggregation of the manipulation check to the group level. This is perhaps not so surprising when considering the fact that the manipulation of visionary leadership took place prior to actual group formation and introduction to the other team members. Even though

our main outcome variables (goal alignment, team creativity and team innovation) were either justifiably aggregated to the group level or measured at the group level, future research may consider manipulating visionary leadership after group formation.

Another unexpected finding that deserves future attention is the fact that our two measures of goal alignment in Study 1 showed different results. Thus, whether or not visionary leadership was related to creativity through goal alignment depended on whether we used participants' self-ratings or a behavioural measure of goal alignment. It is not clear why this was the case; perhaps the experimental group setting was too constrained for participants to display substantial variance in their sense of goal alignment—the task was quite specific, the context was not particularly complicated, and the leader speech was clear and to the point in both conditions. All this may have meant that most participants felt that the goals were strongly aligned regardless of the experimental condition they were in. For future research, it could be interesting to see whether and when subjective perceptions of goal alignment diverge from other operationalizations, such as collectively oriented behaviours, and whether this makes a difference to team performance. Moreover, following up on the results by Bechtoldt, Choi, and Nijstad (2012), it would be interesting to see whether goal alignment has different effects on different aspects of creative performance (such as idea quantity versus idea originality).

11 | CONCLUSION

Leaders indeed do make a difference for team creativity and innovation. On the whole, we can conclude that leaders should realize that, by developing and communicating a compelling vision, they may inspire the team as a whole to contribute to the realization of that vision. Moreover, intrateam communication helps the team make the most of the creative impulse sparked by the leader's vision. Thus, in the end it is both leaders and their teams who shape their innovative future together.

ACKNOWLEDGEMENTS

We are grateful to Managing Editor, Jennie Björk and two anonymous reviewers for helpful feedback and suggestions. We would also like to thank Moritz Brüggemann and Malte Meyerhuber for their help with the experimental study. The work of Jesús Mascareño was supported by the Mexican National Council of Science and Technology (CONACYT) under scholarship number 409813.

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ENDNOTE

¹ For the aggregated group-level data, the results were the same: Groups in the visionary leadership condition felt the leader was more visionary ($M = 5.16$) than did groups in the control condition ($M = 4.60$), $t(25) = -3.64, p < .01$.

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How to cite this article: Mascareño J, Rietzschel E, Wisse B. Envisioning innovation: Does visionary leadership engender team innovative performance through goal alignment? *Creat Innov Manag*. 2020;29:33–48. <https://doi.org/10.1111/caim.12341>