IT'S NOT JUST WHAT IS SAID, BUT WHEN IT'S SAID: A TEMPORAL ACCOUNT OF VERBAL BEHAVIORS AND EMERGENT LEADERSHIP IN SELF-MANAGED TEAMS

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"Emergent leadership"—the ascription of informal leadership responsibilities among team members—is a dynamic phenomenon that comes into place through social interactions. Yet, theory remains sparse about the importance of verbal behaviors for emergent leadership in self-managed teams over a team's lifecycle. Adopting a functional perspective on leadership, we develop a temporal account that links changes in task-, change-, and relations-oriented communication to emergent leadership in early, middle, and late team phases. We test the hypothesized relationships in 42 teams that provided round-robin emergent leadership ratings and videotapes of their first, midterm, and final meetings. Team members' verbal behaviors were captured using fine-grained empirical interaction coding. Multilevel modeling showed that task-oriented communication was a stable positive predictor of emergent leadership at all time points. Change-oriented communication predicted emergent leadership at the start of a project and diminished in relevance at the midterm and final meetings. Relations-oriented communication gained importance, such that an increase in relations-oriented behaviors toward the project end predicted emergent leadership. We discuss theoretical implications for conceptualizing the behavioral antecedents of emergent leadership from a time- and context-sensitive perspective.

In response to fast-changing markets and dynamic business environments, many organizations have established self-managed project teams (Ilgen, Hollenbeck, Johnson, & Jundt, 2005; Oh, 2012). Although these teams have no formal hierarchy, some form of leadership usually emerges, because it helps teams to effectively coordinate their actions (Bass, 1954; Spisak, O'Brien, Nicholson, & van Vugt, 2015; van Vugt, 2006). Self-managed teams that possess high levels of "emergent leadership"—that is, the amount of informal leadership responsibilities or social influence that team members ascribe to one another—have been shown to outperform teams that are low on emergent leadership (e.g., Carte, Chidambaram, & Becker, 2006; De Souza & Klein, 1995; Taggar, Hackew, & Saha, 1999). Given the prevalence and outcome relevance of emergent leadership in self-managed teams, both organizational researchers and managerial practitioners have devoted much effort to understanding the antecedents of the phenomenon.

A growing body of literature acknowledges that emergent leadership is a relational process that

evolves through the temporal course of interactions between team members (e.g., DeRue & Ashford, 2010; Uhl-Bien, Marion, & McKelvey, 2007). This perspective shifts the focus from individual-centered antecedents, such as emergent leaders' personality traits (Judge, Bono, Ilies, & Gerhardt, 2002), to the communicative acts that occur among multiple individuals who construct leadership as an outcome of social interactions (Day & Antonakis, 2012; Fairhurst & Connaughton, 2014; Fairhurst & Uhl-Bien, 2012). The understanding of leadership as a "language game" (Pondy, 1989) conceptualizes emergent leadership as tied to communication, inherently fluent, and subject to (re-)negotiations in interactions. This lens resonates well with the functional perspective on leadership (McGrath, 1962), which concentrates on identifying the behaviors that establish leadership in concrete situations because these behaviors fulfill prevailing team needs (Zaccaro, Rittman, & Marks, 2001).

Functional leadership behaviors in teams can be classified into (a) task-oriented behaviors that are focused on achieving high-quality task outcomes, (b) change-oriented behaviors that have the primary goal of initiating actions to change the status quo, and (c) relations-oriented behaviors that are aimed at improving the quality of relations (Yukl, Gordon, & Taber, 2002). Research has predicted emergent leadership with some of these behaviors (e.g., Bales, 1950; Johnson & Bechler, 1998; Kirscht, Lodahl, & Haire, 1959); yet, these studies predominantly conceptualized the relationships between these behavioral antecedents and emergent leadership as static. While scholars have begun to study shifts in emergent leadership (e.g., Bendersky & Shah, 2013; Pescosolido, 2002), dynamic predictors of emergent leadership—that is, which behaviors team members use at different time points—remain undertheorized. In other words, the growing body of literature describing the dynamic nature of emergent leadership is not matched by an equally dynamic conceptualization of its behavioral-level antecedents.

Such an omission is consequential because behaviors that are initially positively associated with emergent leadership may change in importance over time (Bendersky & Pai, 2018; Wellman, 2017). To illustrate, outlining a vision may contribute to the ascription of leadership in an initial project team meeting, but the same behavior can be perceived as superfluous and unrelated to emergent leadership in a project finalization meeting. The context dependence of communicative acts has long been noted in communication science (Pavitt, 1999). For example, Gerbner's (1956) general model of communication emphasizes that communication agents (i.e., the sender or receiver of a message) can never objectively grasp an event. Instead, individuals perceive communicative events through the lens of the context; that is, the circumstances under which the event occurs, such as the temporal team phase. A theoretical account that details the changing importance of different types of communication for leadership ascriptions at different time points in a team's life can thus substantially advance the understanding of emergent leadership. In providing such a conceptual explanation, we seek to answer the following research question: When do (changes in) task-, change-, and relations-oriented verbal behaviors predict emergent leadership at different time points in a team's lifecycle (i.e., at the beginning, middle, and end)?

The few prior studies that do incorporate a temporal element into their explanation of the behavioral antecedents of emergent leadership provide competing assumptions and remain largely unspecific regarding the exact time frame of reference. One stream of literature suggests that task-oriented behaviors are generally (i.e., at all time points) more important for emergent leadership in self-managed teams than relations-oriented behaviors (e.g., Bales & Slater, 1955; Lanaj & Hollenbeck, 2015). The reasoning behind this inference is that the contribution to the task matters most for success in self-managed teams, and thus should be pivotal for the exhibition of social influence. In contrast, other scholars speculate that relations-oriented communication may be more relevant to the ascription of leadership when considering teams that collaborate over longer time periods (Bendersky & Pai, 2018; Riggio, Riggio, Salinas, & Cole, 2003). This is suggested to be because the ongoing exhibition of social influence is contingent on its legitimacy being endorsed by others, and members who do not demonstrate other-orientation might be perceived as a risk to the team's long-term social cohesion.

We seek to clarify these contradictory assumptions by applying functional leadership theory (Hackman & Walton, 1986; McGrath, 1962) to the temporal context of self-managed project teams. These teams are set up for a limited time period and have a defined lifecycle, from a start point to an end point, in which they need to form, work on tasks, and finalize their project (Ericksen & Dyer, 2004). According to the functional leadership perspective, the specific situation in which a behavior occurs influences the relevance for the exhibition of leadership because
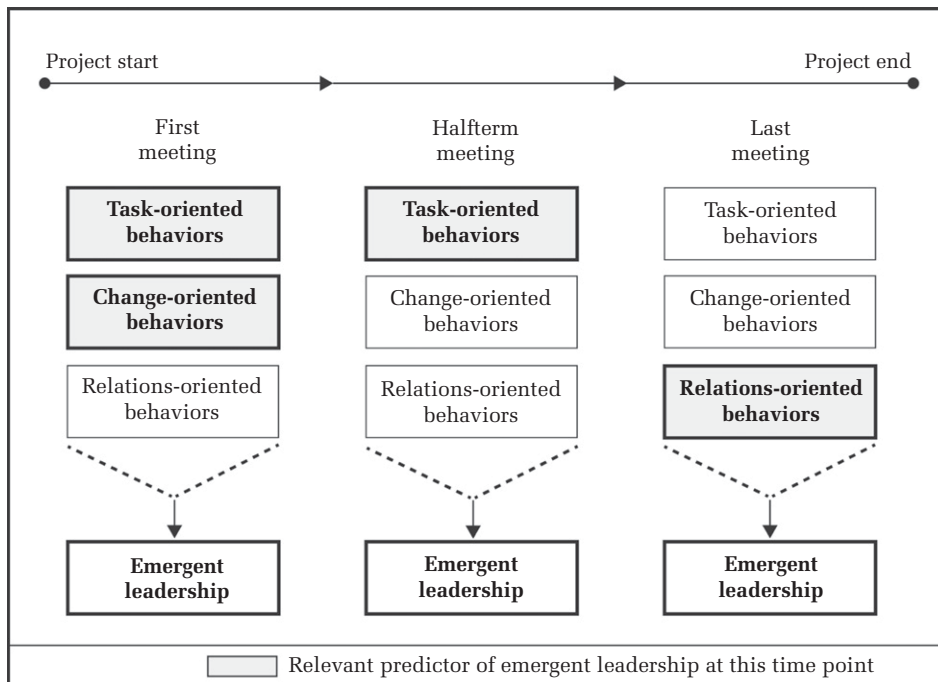
the context determines the functionality for fulfilling team needs. This means that—depending on the temporal team context—some behaviors serve a high functionality for constructing leadership, while the utility of other activities is low (Morgeson, DeRue, & Karam, 2010; Zaccaro et al., 2001). While the exact pattern of self-managed project teams' predominant activities and needs over the course of their lifecycle is subject to an ongoing scholarly debate in the group development literature (e.g., Arrow, Poole, Henry, Wheelan, & Moreland, 2004; Fisher, 2017; Gersick, 1988, 1989; Knight, 2015; Okhuysen & Waller, 2002; Woolley, 2009), we assume here that newly formed project teams need to (a) align on how to approach their task work when they begin their collaboration, (b) carry out the task over the course of the project, and (c) ensure goal attainment in the final meeting that is often characterized by high task and social tension (McGrath, 1991).

Using these assumptions as a starting point for our theorizing, we expect that task- and change-oriented verbal behaviors are essential for the ascription of leadership when project teams begin their collaboration. These behaviors drive the team toward an immediate start of the project task and build the foundation on which future team activities, which contribute to goal attainment, are performed (Ericksen & Dyer, 2004; Morgeson et al., 2010). Individuals who exhibit task- and change-oriented verbal behaviors during this early stage should thus be perceived as exerting leadership influence. As teams progress toward the midterm meeting, we expect that change-oriented behaviors lose importance and task-oriented behaviors continue to be a relevant antecedent of emergent leadership. This is because one-time static inputs are not sufficient for operational tasks (Ericksen & Dyer, 2004); rather, continuous contributions to the task are necessary to signal that one can help to achieve the team's purpose. As informal team hierarchies become more stable over time, members who have established social influence through task contributions may shift their conversational focus toward relations-oriented behaviors in the final meeting. These behaviors prevent socio-emotional conflicts from interfering with the team's performance during intense task work and can contribute to social cohesion in the stressful showdown phase (Ericksen & Dyer, 2004; Morgeson et al., 2010). Figure 1 depicts our conceptual model of the relationships between verbal behaviors and emergent leadership in self-directed teams over the course of a team's lifecycle.

Our research contributes to theory on leadership as a context-dependent product of interactions

FIGURE 1
Conceptual Model of the Hypothesized Predictors of Emergent Leadership

between all team members (Day, Gronn, & Salas, 2004; Denis, Langley, & Sergi, 2012; Uhl-Bien et al., 2007) and builds conceptual links between team development research, leadership studies, and the interaction coding literature in order to specify the behavioral building blocks underlying the construction of leadership in social interactions at specific points in time. In doing so, we advance the prevalent static focus of the leadership literature by developing a temporal account that considers task-, change-, and relations-oriented behaviors, emergent leadership, and the relationships between them as dynamic. We establish that not only the communicative content of leadership behavior (i.e., what is said) but also its timing (i.e., when it is said) is pivotal to fully understanding ascriptions of emergent leadership in self-directed teams.

A TEMPORAL ACCOUNT OF EMERGENT LEADERSHIP

The view of social influence as a co-constructed phenomenon resulting from the interactions between team members who create a history that shapes and guides future influence is core to the discursive perspective on leadership (Fairhurst, 2009; Fairhurst, & Uhl-Bien, 2012). The discursive perspective largely draws from communication science to conceptualize leadership as a "performative, contextual, and attributional process where the ideas articulated in talk or action are recognized by others" (Barge & Fairhurst, 2008: 232). Whereas the classic linear model of communication considers communication as a one-way information exchange or strategic technique to influence others in an intended direction (i.e., send–message–receiver model; Ruben & Gigliotti, 2016), discursive leadership theory refers to an interactional model of communication. In this understanding, an individual's act (i.e., verbal statement) creates a response by someone else, and the accumulation of these acts creates a two-way interaction flow in which preceding acts influence the direction and meaning of the following acts (Fairhurst & Uhl-Bien, 2012; Ruben & Gigliotti, 2016). As such, actors are considered as present in leadership (rather than as containers of leadership), and leadership emerges as an outcome of social interactions that influences future interactions between the team members (Denis et al., 2012). This understanding implies that it is impossible to ignore the communicative behaviors of all team members, the embeddedness of communication in the team's interaction history, and the prevailing team needs in

different temporal contexts when seeking to understand the antecedents of emergent leadership (Day et al., 2004; Fairhurst, 2009).

A growing body of literature encourages researchers to explicitly consider the role of time in leadership theories (e.g., Castillo & Trinh, 2018; Mitchell & James, 2001; Mohammed & Nadkarni, 2011; Shamir, 2011). However, although most studies on the link between communicative acts and emergent leadership describe process-like functions, such as problem solving, monitoring, and supporting others (e.g., Lanaj & Hollenbeck, 2015; Wolff, Pescosolido, & Druskat, 2002), their effects on leadership are not theorized to change over time (Kozlowski, Watola, Nowakowski, Kim, & Botero, 2009). Furthermore, existing research has largely focused on teams in the early phases of the work process, and presumed that emergent leadership and its behavioral predictors remain relatively stable once established (Wellman, 2017). In contrast to ad hoc teams, who only provide a one-shot setting for team interactions, and established teams, who cycle through reoccurring team performance episodes (Marks, Mathieu, & Zaccaro, 2001; Morgeson et al., 2010), project teams get to know each other better over time and are characterized by a fixed deadline that influences team interactions through temporal pacing over the course of the project. In other words, project teams use time as a metric that affects task activity and the exhibition of social influence (Okhuysen & Waller, 2002).

In order to categorize *what* type of communicative behaviors team members use to construct leadership over time, we rely on a parsimonious framework of three broad meta-categories that have been confirmed by meta-analytical evidence (DeRue, Nahrgang, Wellman, & Humphrey, 2011) and differentiate between task-, change- and relations-oriented behaviors (Yukl, 2012; Yukl et al., 2002). Next, we develop our hypotheses on *when* changes in these verbal behaviors link to emergent leadership over the course of a project team's lifecycle.

Task-Oriented Behaviors

The primary objective of task-orientated behaviors is to accomplish task work in order to achieve high-quality outcomes (Bales, 1950; Kirscht et al., 1959; Lanaj & Hollenbeck, 2015). These communicative acts describe activities such as performing the team task (e.g., problem solving or clarifying others' contributions) and engaging in procedural communication (e.g., time management

or discussing procedures).[1] Since the primary focus of most work teams is their task progress, conceptual and empirical studies largely agree that task-oriented behaviors are functional for reaching team goals, and therefore increase the likelihood of being ascribed leadership (Taggar et al., 1999; Wolff et al., 2002). That is, members who display high task abilities through their behaviors immediately qualify for a leadership role because they increase the team's competitiveness and the likelihood of goal achievement (Littlepage, Robison, & Reddington, 1997; van Vugt, 2006).

The evidence for task-oriented communication as a predictor of emergent leadership was first established by Bales and colleagues (Bales, 1950; Bales & Slater, 1955). The authors found that individuals who expressed many task-oriented statements during group interactions received high emergent leadership ratings from their peers. In a similar vein, Lonetto and Williams (1974) obtained emergent leadership ratings from 62 groups working on an experimental problem-solving task and found that emergent leaders used more task-oriented communication, such as providing or evaluating information. Furthermore, the analysis of the transcripts of 108 groups working on different tasks in a laboratory setting revealed that emergent leadership was positively associated with task-oriented behaviors, such as repeating or seeking information or proposing and evaluating solutions (Morris & Hackman, 1969).

However, it is also conceivable that task-oriented guidance can become superfluous for exhibiting leadership under certain circumstances (Kerr & Jermier, 1978; Jermier & Kerr, 1997), such as when temporal pacing structures the team's task work (Okhuysen & Waller, 2002). If the task steps are clear, or the upcoming deadline requires all team members to focus on the task accomplishment, we expect that task-oriented behaviors will not stand out for the exhibition of social influence (Rauch & Behling, 1984; van Vugt, 2006). The temporal milestone of project finalization likely requires teams to operate in overdrive, and to act on the basis of their accumulated experiences (Ericksen & Dyer, 2004). This

entails that additional task contributions may diminish in relevance for the ascription of emergent leadership.

> *Hypothesis 1. The importance of task-oriented verbal behaviors for predicting emergent leadership decreases over the course of a team's lifecycle, such that task-oriented verbal behaviors are positively associated with emergent leadership at the start and midterm meetings, but not at the final team meeting.*

Change-Oriented Behaviors

Recent research has provided a more nuanced perspective on task-oriented behaviors and suggested that change-oriented behaviors, such as articulating a vision or encouraging change, should be considered as a separate category in functional leadership taxonomies (DeRue et al., 2011; Yukl, 2012; Yukl et al., 2002). The differentiation between task- and change-oriented behaviors takes into account that ascriptions of leadership may be evoked by behaviors that signal a proactive willingness to change the status quo which goes beyond the mere task. The importance of initiating change by acting first in leaderless situations that involve coordination challenges aligns with ethological insights emphasizing that making movement decisions is central for the development of leadership in animal groups (Couzin, Krause, Franks, & Levin, 2005; van Vugt, 2017).

Scholarly work in the leadership field also suggests that change-oriented behaviors, such as providing direction for the team and imitating actions, are particularly important leadership functions in the early team phases. This is because team members search for orientation and seek to understand what the stated purpose of the team entails practically at the beginning of a team's collaboration (Kozlowski, Gully, Nason, & Smith, 1999; Kozlowski et al., 2009). Team members who define a mission, establish objectives, or develop action strategies to achieve the outlined mission help to address this state of unclarity (Morgeson et al., 2010) and set the direction for future task work (De Souza & Klein, 1995), which should be reflected in ascriptions of emergent leadership. In accordance with this idea, a study on the meeting communication of 62 problem-solving teams provided evidence that emergent leaders display a larger number of action proposals than team members who do not exhibit leadership influence (Lonetto & Williams, 1974). However, once a mission is set and activity is initiated, change-oriented behaviors may diminish in importance for emergent

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[1] While we acknowledge that some scholars treat procedural behaviors as a separate category (Pavitt, Whitchurch, Siple, & Petersen, 1997), we follow the vast amount of research that has subsumed these acts under task-oriented leadership behavior (e.g., Burke, Stagl, Klien, Goodwin, Salas, & Halpin, 2006; Kerr & Jermier, 1978; Yukl, 2012).

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leadership, and task-focused implementation behaviors are required (Morgeson et al., 2010). We therefore assume that change-oriented behaviors are essential for the ascription of leadership in early team collaboration stages, but that their relevance decreases thereafter (i.e., at the midterm and final meetings).

> *Hypothesis 2. The importance of change-oriented verbal behaviors for predicting emergent leadership decreases over the course of a team's lifecycle, such that change-oriented verbal behaviors are positively associated with emergent leadership at the first but not at the midterm and final team meetings.*

Relations-Oriented Behaviors

Relations-oriented behaviors are targeted toward other team members and are aimed at supporting and including others (Fleishman, Mumford, Zaccaro, Levin, Korotkin, & Hein, 1991; Zaccaro et al., 2001). These behaviors serve a more indirect function in reaching goals in self-managed teams, as they do not contribute directly to the task but help to increase the quality of relations within the team. This can fulfill a team need, as a positive social climate is often essential for project teams to be able to work effectively on a task (Morgeson et al., 2010). Nevertheless, existing findings on the association between relations-oriented behaviors and emergent leadership remain ambiguous to date.

On the one hand, scholars have argued that relations-oriented behaviors are less relevant for predicting emergent leadership when they are considered in combination with task-oriented behaviors, because it is the task success that matters for teams and therefore drives emergent leadership ascriptions (e.g., Bales, 1950; Bales & Slater, 1955; Lanaj & Hollenbeck, 2015; Taggar et al., 1999). Although team members who convince others of their relations-oriented contributions may be liked more, it is only those who convince others of their task-relevant contributions who exhibit social influence on the task progress (Bales & Slater, 1955). However, in contrast to this, some studies found that relations-oriented behaviors, such as active listening (Johnson & Bechler, 1998), displaying social competence (Anderson & Kilduff, 2009), and managing team emotions in uncertain performance situations (Pescosolido, 2002), were positively associated with the ascription of leadership in self-managed teams.

An explicit consideration of the temporal team context may be crucial for explaining these contradictory findings. Indeed, some scholars have argued that individuals in (formal or informal) leadership roles need to demonstrate that they also care about the relationships within teams when the members repeatedly interact (Bendersky & Pai, 2018; Riggio et al., 2003). This line of argumentation resonates well with conceptual work that argues that the leadership function of supporting the social team climate is essential in times of task-focused action because it helps prevent increasing social strain from interfering with the task work (Morgeson et al., 2010). Hence, we expect that, once team structures that have evolved from leadership ascriptions based on team members' change- and task-oriented contributions become more established, and task work becomes more stressful, emergent leadership may be associated with an increasing engagement in relations-oriented behaviors in the final meeting. In this temporal context, relations-oriented behaviors are particularly functional for reaching the team purpose because the social environment is susceptible to team members' emotional distress as team members become increasingly aware of the impending team dissolution (Lacoursiere, 1980). This makes maintaining a collective calmness important for motivating the team members as they finalize the task (Ericksen & Dyer, 2004; Zaccaro et al., 2001).

> *Hypothesis 3. The importance of relations-oriented verbal behaviors for predicting emergent leadership increases over the course of a team's lifecycle, such that relations-oriented verbal behaviors are positively associated with emergent leadership at the final but not at the first and midterm meetings.*

Aligning Theory and Methods

Theoretical and empirical contributions often go hand in hand (van Maanen, Sørensen, & Mitchell, 2007). This entails that behavioral-based theorizing on leadership as a communicative phenomenon that occurs between team members needs to be aligned with methods that illuminate the communicative building blocks at the heart of social influence (Van Quaquebeke & Felps, 2018). In recent years, the emergent leadership literature (e.g., Lanaj & Hollenbeck, 2015; McClean, Martin, Emich, & Woodruff, 2018) has been dominated by survey-based designs that ask participants post hoc (i.e., after the social interactions have taken place) to assess the behaviors shown by their fellow team members. While these studies have brought about interesting insights into understanding leadership perceptions, they are not particularly well suited

to capturing the moment-to-moment interactions between individuals that result in the ascription of emergent leadership (e.g., Collinson, 2005; Day et al., 2004; Uhl-Bien, 2006). This is because survey designs fall short in measuring the social embeddedness of behaviors that predict emergent leadership (Fairhurst & Uhl-Bien, 2012), often rely on imprecise instruments that confound the measurements of behaviors with attributions about their effects (Hoffman & Lord, 2013; van Knippenberg & Sitkin, 2013), and tend to produce biased results due to common method bias and endogeneity problems (Antonakis, Bendahan, Jacquart, & Lalive, 2014; Banks, Gooty, Ross, Williams, & Harrington, 2018). Furthermore, team members' perceptions can differ considerably from the behaviors shown by the assessed person (Courtright, Fairhurst, & Rogers, 1989; Fairhurst, Green, & Courtright, 1995). Thus, survey designs risk measuring individuals' positive or negative attitudes toward their fellow team members, rather than their team members' actual behaviors (Baumeister, Vohs, & Funder, 2007; Frone, Adams, Rice, & Instone-Noonan, 1986).

Therefore, an additional contribution of our research is the exploration of new avenues for matching underlying theoretical assumptions about the micro-level behavioral foundations of emergent leadership with the research implementation process (Fairhurst & Antonakis, 2012). In order to achieve this aim, we reanimate earlier work that used an interaction analytical approach to study emergent leadership in self-directed teams (e.g., Bales, 1950; Bales & Slater, 1955; Pavitt et al., 1997). An interaction analytical approach relies on an external observer who applies a predefined coding scheme (Poole & Folger, 1981; Poole & Hewes, 2017) and makes use of his or her shared cultural understanding with the speaker to assign a behavioral code that grasps the conceptual meaning of a statement (e.g., task, change, or relations oriented). To specify our theoretical framework in terms of concrete behavioral codes that can be used to test the conceptual model (Figure 1), we build on existing behavioral descriptions of the task-, change-, and relations-oriented meta-categories (Yukl, 2012; Yukl et al., 2002). We extend these based on the team interaction coding literature (Kauffeld & Lehmann-Willenbrock, 2012; Lehmann-Willenbrock, Meinecke, Rowold, & Kauffeld, 2015) to define concrete task-, change-, and relations-oriented communicative acts that can be measured during the moment-to-moment conversational dynamics that comprise team interactions (see Table 1).

TABLE 1
Meta-Categories of Verbal Behaviors and Corresponding Behavioral Codes

Task-oriented verbal behaviors	Change-oriented verbal behaviors	Relations-oriented verbal behaviors
Primary objective: To achieve a high-quality solution for the project	*Primary objective: To guide and initiate actions*	*Primary objective: To increase the quality of relations*
Performing the team task • Description: Solving problems and sharing or clarifying task-related knowledge • Behavioral codes: Identifying and describing problems or solutions, outlining connections with problems or solutions, sharing knowledge, referring to others who might possess required knowledge, weighting the costs and benefits of a solution, clarifying and summarizing others' contributions, visualizing content	*Envisioning goals* • Description: Articulating visions or goals to build commitment to actions • Behavioral codes: Defining or pointing out a goal or vision, prioritizing tasks and procedures in line with the goal or the vision	*Recognizing team members* • Description: Using praise and other forms of recognition to show appreciation of other team members • Behavioral codes: Active listening, supporting others' suggestions, offering praise by making positive remarks
Monitoring the team task • Description: Ensuring that the work progresses as planned • Behavioral codes: Time management, discussing procedures, raising procedural questions, delegating tasks during the discussion	*Facilitating change* • Description: Encouraging and supporting change • Behavioral codes: Signaling interest in change and new ideas, taking on responsibility for implementing change and innovation, action planning	*Integrating team members* • Description: Addressing others to actively involve them in the team and encourage participation • Behavioral codes: Involving others through questions, encouraging participation

Note: To run the analysis, we used the aggregated behaviors at the meta-categories' level.

METHODS

Participants and Design

We collected data from 42 self-managed project teams at the first, midterm, and end meetings during an eight-week consulting project for a large automobile manufacturer. One hundred and thirty-six students from an international university in Germany voluntarily signed up for the project work as part of their elective advanced studies. The setting closely mirrored the daily work of organizational consulting teams, which entailed that the participants worked in a highly competitive environment. Competition occurred between teams but not within teams, because the top management of the automobile manufacturer evaluated the project results on the team level. Team performance was directly related to rewards. The participants attended no lectures, but only worked on the consulting project.

The project work concerned a problem faced by the automobile manufacturer's management (e.g., defining factors that increase employer attractiveness and developing strategies to deal with a skills shortage). The teams had to present their solutions in week 8 to the top management of the company. The best solutions were implemented at the company plant and the teams that had suggested these solutions were rewarded with material rewards or temporary positions at the automotive manufacturer. Company representatives approached the teams as junior consultants and directly communicated with them (i.e., without involvement of the university staff) to provide information about the problem. All participating junior consultants had to sign a non-disclosure agreement from the automobile manufacturer to ensure that confidential company information would not be shared with third parties outside the consulting project.

The junior consultants were randomly assigned to teams consisting of three to five members ($M = 3.26$, $SD = 0.54$), with the proviso that the team members were not previously acquainted to ensure that they had not worked together before the consulting project. The teams therefore had neither a pre-established hierarchy nor a formal leader. The study's sample was 53.7% male, with an average participant age of 20.27 years ($SD = 1.23$), and an international background (i.e., 30 nationalities).

In the first session, we informed the teams that we intended to videotape three of their team meetings and collect a questionnaire after each of them. Taking part in the study was unrelated to the teams' chances of success in the final presentation of their project solutions for the automobile manufacturer's top management. Three teams decided they did not want to take part in the data collection. Forty-two teams provided their informed consent before the first meeting and were guaranteed that their data would not be accessible to company or university contacts other than the research team.

We videotaped the teams' meetings in weeks 1 (first meeting), 5 (midterm meeting), and 7 (last meeting before the final project presentation)[2] in order to subsequently code team members' verbal behaviors using a quantitative interaction coding procedure. Meetings lasted between 13 and 67 minutes ($M_{\mathrm{MTP1}} = 38.22$, $SD_{\mathrm{MTP1}} = 14.45$; $M_{\mathrm{MTP2}} = 42.19$, $SD_{\mathrm{MTP2}} = 15.96$; $M_{\mathrm{MTP3}} = 39.09$, $SD_{\mathrm{MTP3}} = 13.67$; MTP = meeting time point). Participants filled in a questionnaire directly after each videotaped meeting to provide emergent leadership ratings of their fellow team members.

Task-, Change-, and Relations-Oriented Verbal Behaviors

Table 1 shows the behavioral operationalization of the three theory-based meta-categories (i.e., task-, change-, and relations-oriented behaviors). While we concur that a verbal statement can be relevant for more than one of the meta-categories (e.g., every task-oriented piece of advice also contains a relational message; see Keyton & Beck, 2009; Watzlawick, Beavin, & Jackson, 1967), we focus our interaction coding on the main purpose of a statement in terms of its contribution to the primary goal of the meta-category (Yukl, 2012). Statements that fall into the "task-oriented" category refer to verbal behaviors that focus on performing the team's tasks; for example, through identifying and describing problems or solutions, sharing knowledge, referring to specialists, weighting the costs and benefits of a solution, or clarifying and summarizing the contributions of others (Yukl et al., 2002). Furthermore, task-oriented behaviors capture communication that fulfills operational monitoring functions; for example, time management, discussing procedures, raising procedural questions, or delegating tasks during the discussion (Burke et al., 2006; Mintzberg, 1973; Yukl et al., 2002).

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[2] A subset of 42 muted 15-second clips from these videotaped team meetings was also used for a study on naïve observers' automatic attention to emergent leaders using an eye-tracking experiment (see Gerpott, Lehmann-Willenbrock, Silvis, & van Vugt, 2018).

"Change-oriented" behaviors describe statements that envision goals by defining or pointing out visions and prioritizing tasks and procedures that are in line with these visions (i.e., agenda setting). These behaviors are distinct from operational task work in that they have the primary aim of changing the status quo, thereby challenging others or directing their attention toward desired outcomes and signaling a commitment to accomplish goals (Kirkpatrick & Locke, 1996; Yukl et al., 2002). Change-oriented behaviors facilitate change through statements such as signaling interest in new ideas, taking on responsibility for implementing change, and planning concrete actions to accomplish the vision or goals (Ekvall & Arvonen, 1991; Yukl et al., 2002).

"Relations-oriented" behaviors refer to verbal acts aimed at enhancing relationships and supporting a positive social climate within the team (Morgeson et al., 2010; Yukl et al., 2002). The operationalization of this category includes statements that express recognition of others, such as providing support for others' suggestions, active listening, or praise. Additionally, the category comprises statements that aim to include all team members in the discussion, for example by asking for others' opinions or addressing quiet participants.

Four extensively trained research assistants conducted the interaction coding of team members' verbal behaviors in the 126 videotaped team meetings. To establish interrater reliability, we applied a fully crossed design with a subset of videos rated by multiple coders, meaning each research assistant double-coded eight complete videos from the data set with an expert coder. All research assistants received a satisfying Cohen's kappa value (Cohen, 1960) of at least $\kappa = .70$.

The research assistants used the software Interact (Mangold, 2010) for the coding, which allows coders to cut the videos into sequences, note who was speaking (i.e., team member A, B, C, D, or E), and then assign a corresponding behavioral code. In this fine-grained procedure, every sense unit is coded, which is the smallest speech segment that expresses a complete thought (Bales, 1950). To illustrate, the sentence "The problem is that the company's traditional recruitment channels no longer work; let's develop something completely new!" would be coded into two sense units, with the first part being a *problem statement* and the second part an expression of *interest in change*. The research assistants assigned one code to each sense unit (i.e., mutually exclusive coding), and coded all utterances during the team meeting (i.e., collectively exhaustive

coding). To ensure that all statements could be coded, we used additional codes (e.g., for silence or off-topic statements; see Kauffeld & Lehmann-Willenbrock, 2012). Since these additional codes were not relevant for our theory-based meta-categories, we did not consider them in our analysis (for a similar procedure, see Lehmann-Willenbrock & Allen, 2014; Lehmann-Willenbrock et al., 2015). Because the meeting lengths varied, we followed established standards in the interaction coding literature (VanLear, 2017) and standardized the frequency of each verbal category per person per hour by dividing the number of codes per category by the number of minutes that each participant was present and multiplying this value with 60. Overall, this procedure resulted in 39,966 coded behaviors for the meetings at the project start, 56,504 coded behaviors for the midterm meetings, and 43,622 coded behaviors for the final meetings.

Emergent Leadership Ratings

We measured emergent leadership with a round-robin rating design in which all team members rated one another using four items adapted from previous research (Lanaj & Hollenbeck, 2015; McClean et al., 2018). Participants replied to these items on a 6-point Likert scale (1 = *completely disagree*, 6 = *completely agree*). Example items were "Team member A [B, C, D, E] has taken a leadership role in our team" or "Team member A [B, C, D, E] has tried to influence the team." Cronbach's alpha values for the scale were $\alpha_{MTP1} = .87$, $\alpha_{MTP2} = .91$, and $\alpha_{MTP3} = .92$.

To justify aggregating perceptual variables across raters (i.e., using the mean value of all other team members' emergent leadership ratings of one person), we calculated the interrater agreement (i.e., intraclass correlation; hereafter, "ICC") for each time point (Bliese, 2000; McClean et al., 2018). For the emergent leadership ratings across raters after the first project meeting, ICC(1) was 0.66 and ICC(2) was 0.80. For the midterm meeting, ICC(1) was 0.67 and ICC(2) was 0.80, and for the final meeting, ICC(1) was 0.52 and ICC(2) was 0.70.

Analytical Approach

The data had a three-level structure with repeated measures (level 1) nested within individuals (level 2) and nested within teams (level 3). To test our hypotheses, we used multilevel modeling (Heck, Thomas, & Tabata, 2014; Ployhart & Ward, 2011) in SPSS (mixed command, restricted

maximum-likelihood approach with listwise exclusion of missing data).

At the first level, we included the fixed effects of task-, change-, and relations-oriented behaviors, as well as the meeting time point, the interaction between meeting time point and task-oriented behaviors, the interaction between meeting time point and change-oriented behavior, and the interaction between meeting time point and relations-oriented behaviors. For the second level, we used the SPSS repeated command with an unstructured variance–covariance matrix to account for the correlated measurements of the participants. This approach implicitly assumes non-parallelism when the variances are unequal, which entails that team members' emergent leadership trajectories can vary over time. For the third level, we added a random intercept to account for the nested data structure (i.e., participants in teams).[3] In other words, this means we modeled the dependency in our data by including the unstructured variance–covariance matrix as well as the random intercept at the team level.

RESULTS

Table 2 displays the descriptive statistics and intercorrelations between emergent leadership and the verbal behaviors in the first, midterm, and final meetings. The team members' communication can be characterized as task focused as task-oriented behaviors were the most frequently shown behaviors at all the time points, followed by relations-oriented communicative acts. The data further reveal that, within the categories, there were an almost equal number of task- and relations-oriented behaviors at the first and final meetings, but they show a steep increase at the midterm meeting. By contrast, change-oriented behaviors had a low base rate, but the amount of change-oriented communication remained stable over the course of the project. The correlations between task- and change-oriented behaviors ($r_{\mathrm{MTP1}} = .60$, $r_{\mathrm{MTP2}} = .44$, $r_{\mathrm{MTP3}} = .45$),

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[3] We also ran an alternative analytical approach (see Singer & Willett, 2003); namely, a growth curve model with linear and quadratic effects for time. This approach obtained essentially the same result pattern—that is, the interaction effect between time (linear and quadratic) and task-oriented behaviors was not significant, and the interaction effects between time and change- as well as relations-oriented behaviors were significant. The results of this alternative way of modeling our data are reported in Appendix A.

task- and relations-oriented behaviors ($r_{\mathrm{MTP1}} = .38$, $r_{\mathrm{MTP2}} = .66$, $r_{\mathrm{MTP3}} = .48$), and relations- and change-oriented behaviors ($r_{\mathrm{MTP1}} = .30$, $r_{\mathrm{MTP2}} = .48$, $r_{\mathrm{MTP3}} = .35$) are moderate, indicating that there might be a general tendency for talkative team members to utilize these behaviors more. The correlations of the emergent leadership ratings at the meeting time points 1, 2, and 3 indicate certain dynamics in leadership ascriptions, but they also indicate an increasing stabilization at later time points (i.e., $r = .58$ between meeting time points 1 and 2, $r = .71$ between meeting time points 2 and 3).

At the teams' first meeting, the correlation between emergent leadership and change-oriented verbal behaviors was the highest ($r_{\mathrm{MTP1}} = .39$, $p < .01$), followed by task-oriented statements ($r_{\mathrm{MTP1}} = .27$, $p < .01$). Emergent leadership and relations-oriented verbal behaviors were not significantly associated at meeting time point 1 ($r_{\mathrm{MTP1}} = .13$, $p = .16$). At the midterm meeting, emergent leadership was positively associated with task-oriented behaviors ($r_{\mathrm{MTP2}} = .43$, $p < .01$), followed by relations-oriented ($r_{\mathrm{MTP2}} = .33$, $p < .01$) and change-oriented communication ($r_{\mathrm{MTP2}} = .29$, $p < .01$). At the last meeting before the final presentation, emergent leadership showed the highest positive correlation with relations-oriented behaviors ($r_{\mathrm{MTP3}} = .35$, $p < .01$), followed by task-oriented ($r_{\mathrm{MTP3}} = .30$, $p < .01$) and change-oriented communication ($r_{\mathrm{MTP3}} = .21$, $p < .05$). The correlations between emergent leadership ratings and age ($r_{\mathrm{MTP1}} = .06$, $r_{\mathrm{MTP2}} = .08$, $r_{\mathrm{MTP3}} = .05$) and gender ($r_{\mathrm{MTP1}} = .08$, $r_{\mathrm{MTP2}} = .03$, $r_{\mathrm{MTP3}} = -.05$; $1 = $ female, $2 = $ male), were not significant, and, for parsimonious reasons, were not considered in the following analyses.

First, we tested the main effect of task-, change-, and relations-oriented behaviors as well as their interaction effects with the meeting time point (see fixed effects in Table 3). A significant interaction effect between a behavioral meta-category (i.e., task-, change-, or relations-oriented behaviors) and the meeting time point indicates that the relevance of this type of communication for predicting emergent leadership changes at different meeting time points. This means that the relationship between the category and emergent leadership is not stable, but, rather, is influenced by the meeting time point.

The interaction effect between meeting time point and task-oriented verbal behaviors for predicting changes in emergent leadership was not significant, $F(2, 190.44) = 0.88$, $p = .42$ (see Table 3). This entails that task-oriented communication did not predict emergent leadership differently at each of the

Q:4

TABLE 2
Descriptive Statistics and Correlations of the Three Behavioral Meta-Categories and Emergent Leadership

	Mean (SD)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Task-oriented behaviors$_{\text{MTP1}}$	2.28 (1.34)											
(2) Change-oriented behaviors$_{\text{MTP1}}$	0.28 (0.23)	.60**										
(3) Relations-oriented behaviors$_{\text{MTP1}}$	1.24 (0.71)	.38**	.30**									
(4) Task-oriented behaviors$_{\text{MTP2}}$	3.12 (2.12)	.44**	.18	−.05								
(5) Change-oriented behaviors$_{\text{MTP2}}$	0.24 (0.19)	.25*	.19	.19	.44**							
(6) Relations-oriented behaviors$_{\text{MTP2}}$	1.78 (0.97)	.28*	.14	.10	.66**	.48**						
(7) Task-oriented behaviors$_{\text{MTP3}}$	2.36 (1.31)	.39**	.27**	.14	.61**	.21*	.50**					
(8) Change-oriented behaviors$_{\text{MTP3}}$	0.27 (0.20)	.05	.15	.16	.12	.15	.24*	.45**				
(9) Relations-oriented behaviors$_{\text{MTP3}}$	1.20 (0.62)	.08	.16	.30**	.14	.21*	.24**	.48**	.35**			
(10) Emergent leadership$_{\text{MTP1}}$	3.89 (0.82)	.27**	.34**	.13	.23*	.20	.18	.16	.11	.11		
(11) Emergent leadership$_{\text{MTP2}}$	4.07 (0.96)	.23*	.15	−.02	.43**	.29**	.33**	.15	.10	.03	.58**	
(12) Emergent leadership$_{\text{MTP3}}$	4.21 (0.89)	.20*	.19	.07	.39**	.32*	.28**	.30**	.21*	.35**	.48**	.71**

Notes: Verbal behaviors per minute at meeting time points (MTPs): MTP1, $N_{\text{MTP1}} = 125$; MTP2, $N_{\text{MTP2}} = 123$; and MTP3, $N_{\text{MTP3}} = 127$. For parsimonious reasons, demographics are not included in the table; neither age ($r_{\text{MTP1}} = .06$, $r_{\text{MTsP2}} = .08$, $r_{\text{MTP3}} = .05$) nor gender ($r_{\text{MTP1}} = .08$, $r_{\text{MTP2}} = .03$, $r_{\text{MTP3}} = −.05$; 1 = female, 2 = male) correlated significantly with emergent leadership.

** $p < .01$
* $p < .05$

meeting time points. In contrast, the data revealed a significant interaction effect between meeting time point and change-oriented behaviors, $F(2, 195.57) = 3.99$, $p < .05$, as well as between meeting time point and relations-oriented behaviors, $F(2, 181.04) = 4.68$, $p < .05$, for predicting emergent leadership. This means that the predictive relationships between emergent leadership and change- as well as relations-oriented behaviors varied at the different meeting time points.

In the next step, we analyzed in more detail how the relationships between emergent leadership and change- as well as relations-oriented behaviors changed at meeting time point 1 compared to meeting time point 2 and at meeting time point 2 compared to meeting time point 3 (Table 4; meeting time

TABLE 3
Test of Fixed Effects (Dependent Variable: Emergent Leadership)

Q:5

	Denominator df	F	Sig.
Intercept	131.82	1128.41	.00
Task-oriented behaviors	316.83	5.81	.02
Change-oriented behaviors	258.86	4.72	.03
Relations-oriented behaviors	255.91	12.98	.00
Meeting time point	174.78	0.92	.40
Meeting time point × Task-oriented behaviors	190.44	0.88	.42
Meeting time point × Change-oriented behaviors	195.57	3.99	.02
Meeting time point × Relations-oriented behaviors	181.04	4.68	.01

Note: Akaike information criterion (AIC) = 784.95, Bayesian information criterion (BIC) = 812.05.

TABLE 4
Estimates of Fixed Effects (Dependent Variable: Emergent Leadership)

	Est. (*SD*)	df	t
Intercept	3.39 (0.14)	133.46	24.94**
Task-oriented behaviors	0.08 (0.03)	253.84	2.64**
Change-oriented behaviors	0.92 (0.27)	134.75	3.40**
Relations-oriented behaviors	0.06 (0.09)	133.99	0.73
Meeting time point 2	0.26 (0.16)	188.02	1.66
Meeting time point 3	0.15 (0.17)	191.61	0.88
Meeting time point 2 × Change-oriented behaviors	−0.66 (0.38)	186.14	−1.72
Meeting time point 3 × Change-oriented behaviors	−0.91 (0.37)	215.06	−2.50*
Meeting time point 2 × Relations-oriented behaviors	0.01 (0.11)	197.45	0.10
Meeting time point 3 × Relations-oriented behaviors	0.38 (0.12)	213.89	3.11**

Notes: Reference point is meeting time point 1. Est. = estimate, *SD* = standard deviation. Information criteria: AIC = 778.84, BIC = 805.98.
** *p* < .01
* *p* < .05

point 1 is used as a reference point). We also performed post hoc tests of the contrasts to determine how the three behavioral meta-categories jointly predict emergent leadership at meeting time points 1, 2, and 3 (Table 5). Because the interaction effect between task-oriented behaviors and meeting time point was not significant, we used the time-invariant estimator of task-oriented behaviors in the post hoc analysis. For change-oriented and relations-oriented behaviors, we used the time-varying estimators.

Our post hoc tests revealed a positive relationship between task-oriented behaviors and emergent leadership, $t(253.84) = 2.64$, $p < .05$ (Table 5). This entails that task-oriented behaviors were a stable positive predictor of emergent leadership at all meeting time points during a team's lifecycle. These findings contradict Hypothesis 1, which posited a decreasing relevance of task-oriented behaviors for emergent leadership at the final team meeting.

The estimates of fixed effects for the interactions between meeting time point and change-oriented behaviors were negative, indicating a decreasing relevance of change-oriented behaviors for emergent leadership over the course of a team's lifecycle (see Table 4). In particular, the difference between meeting time points 1 and 3 was significant, $t(215.06) = -2.50$, $p < .05$, whereas the difference between meeting time points 1 and 2 was not, $t(186.14) = -1.72$, $p = .09$. When considered in combination with task- and relations-oriented communication at the different meeting time points, change-oriented verbal behaviors were a significant predictor of emergent leadership at the beginning of the project, $t(134.75) = 3.40$, $p < .01$, but not in later meetings (i.e., meeting time points 2 and 3; see Table 5). These findings provide support for Hypothesis 2.

The overall significant interaction effect between relations-oriented communication and meeting time point for predicting emergent leadership resulted from a significantly changed relationship between meeting time point 1 and meeting time point 3, $t(213.89) = 3.11$, $p < .01$. By contrast, the change in

TABLE 5
Coefficient Estimates for All Meeting Time Points (Dependent Variable: Emergent Leadership)

Verbal behaviors	Meeting time point 1			Meeting time point 2			Meeting time point 3		
	Est. (*SE*)	df	t	Est. (*SE*)	df	t	Est. (*SE*)	df	t
Task-oriented	.08 (.03)	253.84	2.64**	.08 (.03)	253.84	2.64**	.08 (.03)	253.84	2.64**
Change-oriented	.92 (.27)	134.75	3.40**	.26 (.31)	122.22	0.84	.00 (.28)	124.39	0.01
Relations-oriented	.06 (.09)	133.99	0.73	.07 (.06)	133.20	1.15	.45 (.09)	127.13	4.76**
Adjusted R^2	$\eta^2 = .2845$			$\eta^2 = .2354$			$\eta^2 = .2244$		

Notes: Est. = estimate, *SE* = standard error. Information criteria: AIC = 778.84, BIC = 805.98. Since we did not find an interaction effect between task-oriented behavior and meeting time point (see Table 3), we used a time-invariant estimator of the effect of task-oriented behaviors and time-varying estimators of the effects of change- and relations-oriented behaviors.
** *p* < .01

relationship between meeting time point 1 and meeting time point 2 was not significant, $t(197.45) = 0.10$, $p = .92$. The estimates of relations-oriented behaviors were 0.06 at meeting time point 1, 0.07 at meeting time point 2, and 0.45 at meeting time point 3, thus reflecting the steep increase in the importance of emergent leadership at the final project meeting. When considered in combination with task- and change-oriented communication at the different meeting time points, relations-oriented behaviors were a significant predictor of emergent leadership at the final meeting, $t(127.13) = 4.76$, $p < .01$, but not at the first and midterm meetings (Table 5). These findings provide support for Hypothesis 3.

DISCUSSION

Despite the considerable interest in uncovering the behavioral antecedents associated with emergent leadership, the passage of time as a central dimension of this relationship has received relatively little scientific scrutiny (Bluedorn & Jaussi, 2008; Castillo & Trinh, 2018; Shamir, 2011). This study developed a temporal account of the importance of verbal behaviors for the ascription of emergent leadership over the course of a team's lifecycle. The results of our fine-grained interaction analysis mostly provided support for the hypothesized relationships. We found that change-oriented communication predicted emergent leadership in the first team meeting, and diminished in relevance at the midterm and final meetings. Relations-oriented verbal behaviors increased in importance over time, and were significantly positively associated with emergent leadership at the project teams' final meeting. Contrary to our expectations, the relevance of task-oriented communication for emergent leadership did not change during the teams' lifecycles. Instead, task-oriented behaviors were a stable positive predictor of emergent leadership at all the time points.

Theoretical Implications

Our study offers three main contributions to organizational theory and research. First, our temporal perspective on the changing relationships between behavioral antecedents of emergent leadership as a dynamic outcome of interactions extends previous work that outlined that emergent leadership is not a stable but a dynamic phenomenon and one that can shift between the members of self-managed teams (e.g., Aime, Humphrey, DeRue, & Paul, 2014; Bendersky & Shah, 2013; Wellman, 2017). Drawing

from functional leadership theory, we explicate that the functions that task-, change-, and relations-oriented behaviors serve for the achievement of team-project goals vary due to the exogenous temporal demands that pace the team's work, and that ascriptions of emergent leadership reflect the time-varying importance of these behaviors. Behaviors that help teams to navigate the changing demands over the course of their lifecycle should therefore not only be considered in order to understand effective leadership in formal power positions (Kozlowski et al., 2009), but also in order to develop theories on the dynamics of informal leadership. Theorizing on the relationship between specific behaviors and emergent leadership will probably fall short if it does not consider time as a pivotal boundary condition.

Second, our study advances previous work that has created a theoretical puzzle with regard to the behaviors that are important for emergent leadership in self-managed teams. To begin with, we add to preliminary attempts to consider change-oriented communication within the context of emergent leadership. Whereas previous research has outlined the importance of change-oriented behaviors for formal leadership (DeRue et al., 2011; Yukl et al., 2002) and group processes (Ilgen et al., 2005), our work extends these perspectives by finding that change-oriented statements constitute behavioral acts that are important for the ascription of emergent leadership in early collaboration phases. Furthermore, a debate in the leadership literature has evolved around the question of whether relations-oriented behaviors matter for the ascription of leadership. For example, recent work by Lanaj and Hollenbeck (2015) emphasized the importance of task-oriented behaviors over relations-oriented behaviors for perceptions of emergent leadership in self-managed teams, although the authors noted that future research should examine the impact of both behaviors on emergent leadership at different stages of a team's lifecycle. Our work responds to this and argues by theorizing, and subsequently empirically demonstrating, that relations-oriented behaviors constitute a time-dependent predictor of emergent leadership, such that this type of communication is only important at the end of a team's lifecycle. Furthermore, and contrary to our prediction, we found that task-oriented behaviors were a relevant predictor of emergent leadership throughout the teams' lifecycle. In combination, these findings provide impetus to the idea that individuals must continuously prove their task-related expertise in order to avoid disappointing the expectations of others regarding their contributions, and thus losing their leadership status (Bendersky & Shah, 2013). By

contrast, relations-oriented behaviors appear to be insufficient for establishing leadership in the first place but can be used to exhibit social influence in the final meeting when the team members are more familiar, informal hierarchies are more established, and the situational requirements are more demanding for a positive social climate that can ensure task performance than in the initial meeting.

Third, in addition to demonstrating the dynamics of verbal behaviors and emergent leadership over the course of a team's lifecycle, this work makes a more general contribution to the theoretical understanding of leadership. Our conceptual argument positions temporality and change as essential characteristics of leadership and its behavioral antecedents; in this way, our research is fully integrated with the recent fundamental shift in the literature toward conceptualizing leadership as resulting from the moment-to-moment interactions between individuals (e.g., Collinson, 2005; Day et al., 2004; Uhl-Bien, 2006). We illustrate how building conceptual links between leadership studies, the communication literature, and team research helps to build theory that specifies the behavioral building blocks underlying the construction of leadership in social interactions, thereby considering communication not just as acts of transmission (i.e., sender–message–receiver model), but as embedded in social interaction streams (Fairhurst & Uhl-Bien, 2012). This addresses a major problem of previous emergent leadership research; namely, that of acknowledging the importance of the process, but, at the same time, relying on a research paradigm that asks participants to work together on a task, after which "magic happens and a leader emerges from the group at the end of the discussion period" (Guastello, 2007: 357). Such an individual-focused, static, post hoc, and asocial measurement approach runs counter to a conceptualization of emergent leadership as a collectivistic process in which all team members are present and construct leadership together in the situation (Denis et al., 2012). In this regard, our work can also be seen as a contribution to a "post-heroic" understanding of social influence that seeks to expand the study of the attributes of individual emergent leaders to investigate leadership as a process-generated phenomenon produced by a group of people within specific contexts (Barge & Fairhurst, 2008; Fairhurst, 2009; Ruben & Gigliotti, 2016).

Managerial Implications

Our findings inform practitioners in several ways. From a hands-on perspective of those responsible for leadership development programs, training programs could sensitize members of self-managed teams to acknowledge that teams progress through a number of developmental phases characterized by different needs. These phases may influence which types of communication are effective at different time points in exhibiting social influence. It is important to note that our interactionist perspective on leadership implies a holistic understanding of communication as embedded in social contexts and is therefore opposed to the conclusion that employees should be trained to engage in only one specific type of behavior at one time point. Such a strategic approach would likely run counter to team members' general expectations of meeting communication, and thus increases the likelihood of being perceived as manipulative (Courtright et al., 1989). Instead, we assume that a high situational awareness, combined with considerable behavioral flexibility, is key to adapting verbal behaviors depending on the temporal team situation in a well-balanced manner, thereby potentially engaging in some behaviors more without neglecting others. Hence, we suggest that training programs could focus on developing individuals to correctly read the signs that occur in team interactions and to vary their behavior accordingly. In more concrete terms, an action-training approach could focus on learning through experiences (Frese, Beimel, & Schoenborn, 2003); for example, by videotaping a meeting involving the training participants and providing them with a detailed description of their verbal behaviors during the meeting. These descriptions could then be contrasted with participants' self-ratings of their engagement in task-, change-, and relations-oriented communicative acts. The trainer and the participants could then discuss differences between objective and perceived verbal behaviors in order to improve participants' abilities for realistic self-assessment (Bass, 1990). Afterward, participants could learn to flexibly adjust their leadership behaviors to the situational requirements; for example, through role-plays with subsequent feedback (Antonakis, Fenley, & Liechti, 2011).

In the long term, a one-time training session is probably insufficient to develop the necessary behavioral flexibility for identifying and adaptively responding to the temporal team context. Therefore, short-term trainings would ideally be embedded in a lifelong development process that seeks to increase organizational members' awareness that leadership is not a "property" of an individual, but is continuously created in interactions that are inseparably

linked to the past, present, and future communications between interaction partners (Clifton, 2012). This understanding is particularly helpful in light of the increasing number of self-managing team structures (Magpili & Pazos, 2018) and it could also help managers in formal leadership positions to more effectively exhibit social influence and be recognized as leaders in the moment-to-moment "language game" of leadership (Walker & Aritz, 2014). Organizations could, for example, provide continuous feedback from multiple sources, coaching programs to increase self-awareness, and programs that improve perspective-taking (Yukl & Mahsud, 2010). Furthermore, the need to reflect on the intended and unintended influence processes that occur in interactions provides new impetus to leadership developmental approaches such as reflective practices (Schön, 1983) through which individuals learn strategies to influence their communication by means of (post hoc) reflection on action and (in situ) reflection in action.

Limitations and Directions for Future Research

This research has several limitations that can serve as a starting point for future research. First, to develop our conceptual model, we assumed that all teams are faced with the challenges of goal alignment and mobilization in the initial meeting, then increasingly focus on the task, and are predominantly concerned with their goal attainment in the last meeting (Ericksen & Dyer, 2004; McGrath, 1991). However, other conceptual perspectives on team development may suggest a different pattern of relationships. For example, we adopt a counterbalancing perspective toward group development scholars who position interpersonal issues relatively early in a team's lifecycle (e.g., Tuckman, 1965; Tuckman & Jensen, 1977), which entails that relations-oriented behaviors may also be relevant for the ascription of leadership right from the start because they help to establish positive social relationships in the early team phases. Furthermore, some group development models propose an intense transition phase at the midpoint (e.g., Gersick, 1989; Hackman & Wageman, 2005), which implies that change-oriented behaviors are required to set a new direction for the team and thus to exhibit social influence in the midterm meeting. While our findings do not provide support for these alternative relationships between specific behaviors and emergent leadership, it is important to note that the scope of our study did not include a comparison of different patterns of group development. In an extension of our work, future research may want to systematically vary the predominant team activities at different time points of their lifecycle in order ascertain whether this influences the relevant behaviors for emergent leadership. For example, researchers could experimentally manipulate the amount of social conflict or the degree of goal clarity through formal instructions (Okhuysen & Waller, 2002) in order to investigate the effect of this on team members' verbal behaviors and the accompanying emergent leadership ascriptions.

Second, it remains to be seen whether the behavioral manifestations of emergent leadership are generalizable to project teams in other organizational settings. Although the investigated teams performed real consulting engagements and experienced high performance pressure due to the considerable reward relevance of their presentation to the client's top management, they were still embedded in a university setting. Even more notably, consultancy projects are characterized by a focus on problem-solving tasks and may provide an environment in which signaling task-related competence is particularly important. By contrast, project teams that collaborate in a different setting, such as caregiving work, may place more emphasis on relations-oriented communication (Keyton & Beck, 2009). This means that, in different settings, relations-oriented behaviors could be more important for exhibiting leadership right from the start.

Third, our longitudinal analysis of emergent leadership covered a team's complete lifecycle over the course of a project. It would also be interesting to apply a more fine-grained approach to different time periods within a single meeting. For example, scholars could use breakpoint analysis (Chiu & Lehmann-Willenbrock, 2016) to segment a meeting into statistically meaningful phases, such as periods of high versus low time pressure, and then investigate whether the verbal behaviors relevant for emergent leadership shift between these within-meeting phases.

Finally, the application of an a priori coding scheme presents limitations in terms of capturing the various meanings of interactions. Because each statement is coded according to its primary purpose or function (Kauffeld & Lehmann-Willenbrock, 2012; Yukl et al., 2002), the applied interaction approach cannot fully reflect a statement's various potential connotations, such as the simultaneous communication of objective information and interpersonal emotional meaning (Watzlawick et al.,

1967). The relational meaning of a statement beyond its explicit function in the interaction process is often communicated implicitly and nonverbally, and must be interpreted from the context (Watzlawick et al., 1967). In order to capture the relational dimension of communication in more detail, future work could apply coding procedures that capture both the content and the interpersonal meaning of a message. For example, a relational control coding approach describes the interaction partners' positions relative to one another as constructed in the ongoing communication (Courtright et al., 1989; Fairhurst et al., 1995). This approach could be used to code the occurring interacts with regard to whether the interaction partners accept, resist, or modify their relative power positions, and, in doing so, co-construct leadership over the course of a meeting through the redefinition of the nature of their relationships (Rogers & Cummings, 2017).

A second aspect of our coding scheme that deserves further attention concerns the potential conceptual and empirical overlap between task- and change-oriented behaviors. While we consider it an important endeavor to separate the proactive, visionary aspects of leadership from its operational, task-focused components through a behavioral-based definition of change-oriented communication that avoids confounding activities with effects (Antonakis, Bastardoz, Jacquart, & Shamir, 2016; van Knippenberg & Sitkin, 2013; Yukl et al., 2002), we cannot rule out that there could be systematically co-occurring aspects in task- and change-oriented behaviors (i.e., correlation of $r = .60$ at meeting time point 1, which decreases to $r = .48$ and $r = .45$ at meeting time points 2 and 3, respectively). Thus, we encourage scholars to continue developing theory on the conceptually unique aspects of the change-oriented component of leadership behaviors in order to avoid construct redundancy (Banks et al., 2018; DeRue et al., 2011).

CONCLUSION

Recent research expresses the hope that the leadership field is in the midst of a "revolutionary shift" (Wellman, 2017) toward the development of new, socially embedded models that contribute to an understanding of leadership as shaped in fundamental ways by the team context. We think that such advancements are not only urgently needed in order to move beyond the static conceptualization of emergent leadership and its behavioral antecedents in organizational theory, but also to provide relevant contributions for organizations that continue to implement self-managed work teams in highly interactive and dynamic environments. In this sense, we hope that our work inspires future research to attain new insights into the "magic that happens" (Guastello, 2007) when teams come together and leadership emerges as an outcome of their interactions.

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APPENDIX A

Following the approach suggested by Singer and Willett (2003), we fitted and compared three increasingly complex models (see Table A1). We included the within-person measure at level 1, random intercepts and random slopes by time at level 2 (within subjects), and random intercepts for teams at level 3. Model A was an unconditional growth model. Model B added the main effects of task-, change-, and relations-oriented behaviors as fixed effects. Model C added the interaction between time (linear and quadratic) and the time-varying predictors, which is formally stated as follows:

$$
\begin{aligned}
Y_{ijk} = {} & \pi_{0ij} + \pi_{1j}\, TimeLin + \pi_2\, TimeQua + \pi_3\, Task \\
& + \pi_4\, Change + \pi_5\, Relations + \pi_6\, Task\ TimeLin \\
& + \pi_7\, Change\ TimeLin + \pi_8\, Relations\ TimeLin \\
& + \pi_9\, Task\ TimeQua + \pi_{10}\, Change\ TimeQua \\
& + \pi_{11}\, Relations\ TimeQua + \varepsilon_{ijk}
\end{aligned}
$$

$$
\pi_{0ij} = \gamma_{oi} + \zeta_{oij}
$$

$$
\pi_{1ij} = \gamma_1 + \zeta_{1ij}
$$

$$
\gamma_{oi} = \mu_0 + \eta_{oi}
$$

where:

$$
\varepsilon_{ijk} \sim N\!\left(0, \sigma_\varepsilon^2\right) \text{ and }
\begin{bmatrix} \zeta_{oij} \\ \zeta_{1ij} \end{bmatrix} \sim N\!\left(\begin{bmatrix} 0 \\ 0 \end{bmatrix}, \begin{bmatrix} \sigma_{0i}^2 & \sigma_{01i} \\ \sigma_{10i} & \sigma_{1i}^2 \end{bmatrix} \right)
$$

$$
\text{and } \eta_{oi} = N\!\left(0, \sigma^2\right)
$$

and i is team number, j is team member number, k is time point, *TimeLin* is the linear effect of time, *TimeQua* is the quadratic effect of time, *Task* is task-oriented behaviors, *Change* is change-oriented behaviors, and *Relations* is relations-oriented behaviors.

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TABLE A1
Results of Growth Curve Models to Predict Emergent Leadership

	Model A	Model B	Model C
Fixed effects			
Composite Intercept	4.03 (0.09)***	3.43 (0.12)***	3.63 (0.13)***
model TimeLin	0.06 (0.01)**	0.06 (0.01)***	0.00 (0.03)
TimeQua	0.00 (0.01)	0.02 (0.07)**	−0.02 (0.02)
Task		0.08 (0.03)**	0.08 (0.04)
Change		0.44 (0.19)*	0.55 (0.33)
Relations		0.12 (0.05)*	−0.02 (0.08)
Task × TimeLin			0.02 (0.01)
Task × TimeQua			−0.00 (0.01)
Change × TimeLin			−0.18 (0.07)
Change × TimeQua			−0.01 (0.04)**
Relations × TimeLin			0.05 (0.02)*
Relations × TimeQua			0.03 (0.01)*
Variance components			
Level-1: Within-person	0.22 (0.03)***	0.20 (0.03)***	0.17 (0.02)***
Level-2: In intercept	0.39 (0.07)***	0.28 (0.06)***	0.28 (0.05)***
In rate of change	0.01 (0.00)**	0.01 (0.00)**	0.01 (0.00)***
Level 3: Team	0.10 (0.06)	0.12 (0.05)*	0.13 (0.05)*
Goodness of fit			
AIC	824.11	778.61	773.29
BIC	851.44	817.66	835.78

Notes: These models (using maximum likelihood) predict emergent leadership as a function of the time-varying predictors task-, change-, and relations-oriented behaviors. Model A is an unconditional growth model. Model B adds the main effects of task-, change-, and relations-oriented behaviors as fixed effects. Model C adds the interaction between time (linear and quadratic) and the time-varying predictors.

*** $p < .001$
** $p < .01$
* $p < .05$

AUTHOR QUERIES

PLEASE ANSWER ALL QUERIES

Q:1_The reference "Bales, 1953" does not appear to have been cited in the text. Please add an in-text citation(s) or delete the reference. Thank you.

Q:2_Please advise/insert the name of the editor(s) of *Audio visual communication review*, vol. 4, if applicable. Thank you.

Q:3_The reference "McGrath, 1984" does not appear to have been cited in the text. Please correct an existing in-text citation, add a new in-text citation, or delete the reference. Thank you.

Q:4_Consider adding a further note to Table 2's legend that explains what the shaded cells in the main table body mean. Thank you.

Q:5_In Table 3, would it be correct (i.e., following *AMJ*/APA Style) to replace the column header "Sig." with "*p* value"? Please confirm. Thank you.

Q:6_Please note that, under APA Style (which *AMJ* broadly follows), if a if a value has the potential to exceed 1.0, a leading zero should be used (i.e., a 0 before the decimal point); only if the value can never exceed 1.0 should no leading zero be featured. In Table 5, should the *SE* values therefore each feature a leading zero? Please advise. Thank you.

Q:7_Relatedly, the estimates in Table 5 do not feature a leading zero, but these same values do take a leading zero when reported in the main text. Please advise which approach is correct, and ensure that it is applied consistently throughout the final paper. Thank you.