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Doing complexity leadership theory: How agile coaches at Spotify practise enabling leadership

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Complexity leadership theory (CLT) is about balancing formal and informal organization to leverage dynamics of Complex Adaptive Systems (CAS) and produce learning, creativity, and adaptation in organizations. Based on interviews with sixteen agile coaches (AC) at Spotify, this study examines how AC practice enabling leadership, a key balancing force in complexity leadership. Coaches practice enabling leadership by increasing the context-sensitivity of others, supporting other leaders, establishing and reinforcing simple principles, observing group dynamics, surfacing conflict and facilitating and encouraging constructive dialogue. The AC as complexity leader values being present, observing and reacting in the moment. Findings suggest flexible structure provided by an attentive coach may prove a fruitful way to navigate and balance autonomy and alignment in organizations.

1 | INTRODUCTION

The challenge of how to manage for innovation and adaptability in dynamic contexts is high on the research agenda (Eisenhardt, Furr, & Bingham, 2010; Uhl-Bien & Arena, 2018; Worley & Lawler, 2010). Past research has suggested several roles managers should take to be effective in dynamic contexts, such as, function as facilitators (Raelin, 2013), creators of conditions favourable for performance (Hackman, 1986), or enablers of informal network dynamics in complex adaptive systems (CAS) (Uhl-Bien & Arena, 2018; Uhl-Bien, Marion, & McKelvey, 2007). Most empirical work has focused on hierarchical, appointed leaders (Dinh et al., 2014; Morgeson, DeRue, & Karam, 2010), suggesting an ever expanding repertoire of behaviours to be performed by managers (Tourish, 2018, p. 7). However, in entrepreneurial firms practising agile software development, leadership roles without managerial authority are also common, and as alternative sources of leadership, an under-researched area (Dinh et al., 2014; Havermans, Den Hartog, Keegan, & Uhl-Bien, 2015; Morgeson et al., 2010; Rapp, Gilson, Mathieu, & Ruddy, 2016). Thus, in this paper, I draw on complexity leadership theory (CLT) to clarify how an alternative leadership role, agile coaches, practise *enabling leadership*: a type of leadership seen as key in balancing freedom and alignment as demanded in highly dynamic contexts (Uhl-Bien et al., 2007; Uhl-Bien & Arena, 2018).

In the world of agile software development, organizations are attempting to practise organizing for adaptiveness and learning (Conboy, 2009; Highsmith & Cockburn, 2001; Lee & Xia, 2010; Vidgen & Wang, 2009). Agile methods of software development, such as scrum, are often team-based, iterative in small increments, and rely on collaborative, self-organizing teams to dynamically adjust to changing customer requirements, needing to balance freedom and responsibility, learning and performance (Hoda, Noble, & Marshall, 2010). Self-organizing teams are teams of "individuals [that] manage their own workload, shift work among themselves based on need and best fit, and participate in team decision making" (Highsmith, 2004). However, they are not leaderless or uncontrolled teams. Direction, alignment, and commitment are still needed (Drath et al., 2008). And instead of traditional managers, teams often have a *coach* or *scrum master* (Hoda et al., 2010), an alternative leadership role.

A family of leadership theories have evolved that have in common a shift in focus, from the formal leader to leadership as the generation of *leadership outcomes*, essentially a collective capacity for change,

adaptation and innovation (Bolden, 2011; Day, 2000; Drath et al., 2008; Fletcher, 2012, p. 86; Uhl-Bien et al., 2007). Of these, complexity leadership theory (Uhl-Bien et al., 2007) takes a special interest in how leadership is practised to balance the formal and the informal, to leverage the dynamics of complex adaptive systems to achieve simultaneous goals of learning and performance, of adaptability and innovation; in CLT this function is termed *enabling leadership* (Uhl-Bien & Arena, 2018). Thus, it speaks directly to management challenges faced by firms who must innovate fast, such as Spotify.

Past empirical research on CLT has focused on formal manager roles, i.e. project managers and line managers (e.g. Havermans et al., 2015), informal leaders, i.e. team members, members of a community of practice (e.g. MacGillivray, 2010), or both (e.g. Plowman et al., 2007). Research on what we might call "alternative" leadership roles is lacking (Havermans et al., 2015). Studies of agile teams on the other hand (e.g. Annosi, Magnusson, Martini, & Appio, 2016; Hoda, Noble, & Marshall, 2013; Moe, Dingsøyr, & Dybå, 2010) have not examined the role of agile coaches specifically or with the perspective of coaches as (complexity) leaders. A search on Scopus in August 2018 with the terms "agile coach" or "scrum master" results in only one peer-reviewed study (Srivastava & Jain, 2017), and three conference papers examining the practices of the roles explicitly at all (Bass, 2014; Parizi, Gandomani, & Nafchi, 2014; Santos, Goldman, & Filho, 2013). This study thus adds to our knowledge about practices of leadership in non-managerial roles, particularly as it applies to the issue of management of emergent processes, by its description of the micro-level basis of accomplishing adaptive space through local, everyday actions of enabling leadership.

This study contributes to the leadership literature in several ways. First, to leadership theory at large by paying attention to how leaders influence processes underlying the emergence of outcomes such as organizational adaptiveness and innovation, as called for by Dinh et al. (2014) and Uhl-Bien and Arena (2018). Second, this paper contributes to the literature on CLT more specifically. In their paper laying out CLT, Uhl-Bien et al. (2007) promise that, while CLT "implies that *leadership* only exists in, and as a function of, interaction; … there are roles for individual *leaders* in interacting with (i.e. *enabling*) this dynamic." The paper contributes an empirical, qualitative account of *how* enabling leadership can be practised (Uhl-Bien & Arena, 2017), and more precisely, how agile coaches contribute to the management of emergent processes (Lord, Dinh, & Hoffman, 2015). Third, the study also contributes to the team leadership literature by its examination of leadership by non-managers (Mathieu, Maynard, Rapp, & Gilson, 2008; Morgeson et al., 2010; Rapp et al., 2016) and a suggestion of a third possible focus of team leadership, process dynamics, over and above the traditional task and relationship focus (Burke et al., 2006).

2 | THEORETICAL BACKGROUND

For organizations for whom rapid production of knowledge and innovation is crucial for survival in complex competitive landscapes (Koch & Leitner, 2008; Uhl-Bien et al., 2007), such as Swedish music streaming firm Spotify, a key management challenge is learning what to structure and what not to structure (Hill, Cromartie, & McGinnis, 2017; McKelvey, 1999; Vidgen & Wang, 2009) or how to strike a balance between order and disorder, often referred to as "the edge of chaos" (Lewin, Long, & Carroll, 1999; McDaniel & Walls, 1997). The edge of chaos provides organizations with both sufficient "stimulation and freedom to experiment and adapt but also with sufficient frameworks and structure to ensure they avoid complete disorderly disintegration" (McMillan, 2004, p. 22). Hitting this sweet spot of generative emergence, organizations can continuously improve efficiency, adaptability and performance of the organizational system (Lichtenstein, 2014).

2.1 | Complexity leadership theory

Complexity is characterized by the greater levels of uncertainty, ambiguity and interdependence that characterizes the operational environments of many organizations today (Clarke, 2013), but especially knowledge-intensive (Clegg, Waterson, & Axtell, 1996; Davenport, 2005, p. 25), high-velocity (Eisenhardt, 1989b), innovation-dependent (Riolli-Saltzman & Luthans, 2001) software development firms. A defining feature of complexity is that the relationships of cause and effect are more obscure or may change rapidly (Osborn, Hunt, & Jauch, 2002, pp. 822–823), meaning that traditional managerial *control* is both less possible, and less useful. Nevertheless, understanding how organizations might wilfully boost the collective capacity to generate adaptive and innovative outcomes is important, and thus, more empirical research into *complexity leadership* has been called for (Avolio, Walumbwa, & Weber, 2009; Uhl-Bien & Arena, 2018; Yammarino, Salas, Serban, Shirreffs, & Shuffler, 2012, p. 392). Understanding and managing emergent processes that *generate* innovative outcomes, to the extent that it is possible, is a "critical strategic issue for organizational leadership" (Lord et al., 2015, p. 275). CLT offers a theoretical framework that focuses especially on the challenge for knowledge-intensive organizations of balancing order and disorder, acknowledging that organizations are composed of bureaucratic, administrative functions as well as emerging, informal dynamics. It is therefore not purely focused on describing leadership as an unfolding collective process of emergence, but has a more normative bent in that it seeks to "foster Complex Adaptive System dynamics while at the same time enabling control structures for coordinating formal organizations and producing outcomes appropriate to the vision and mission of the organization" (Uhl-Bien et al., 2007, p. 300), i.e. it has a focus on how to manage emergent processes. Among leadership theories, CLT stands out as especially centring on the management of emergence and therefore seems well positioned to be used in answering calls for more empirical research on this topic (Avolio et al., 2009; Lord et al., 2015; Uhl-Bien & Arena, 2018; Yammarino et al., 2012).

The CLT framework states that complexity leadership has *three components*: operational, entrepreneurial and enabling leadership. *Operational leadership* is based on authority and position and thus comes with the power to make decisions on behalf of the organization in a top-down way. It represents the formal structures and order of the organization. *Entrepreneurial leadership* refers to more explorative actions and creating new knowledge, skills and products. Balancing the two is *enabling leadership*, which attempts to accomplish *adaptive space*, essentially "creating structures and processes that effectively

engage conflicting and connecting to trigger and amplify emergence into new adaptive order for the organization" (Uhl-Bien & Arena, 2018). The adaptive space does not refer to the action of any one individual but is defined as an emergent, interactive, *dynamic* that produces adaptive outcomes (such as learning, creativity and adaptiveness) in a social system (Uhl-Bien et al., 2007; Uhl-Bien & Arena, 2018). By definition, as a dynamic, it is not tied to any one person but is a distributed, collective process. The concept of adaptive space in CLT is similar to several related concepts in processual, relational and complexity views of organizations and leadership. What they all have in common is describing the "motor" of change in organizations. It has also been described as "relational space"—a "certain high quality of interactions, reflecting a shared context of mutual respect, trust, and psychological safety" (Lichtenstein, 2014), and in relational models of leadership, positive (processual) leadership outcomes are coordinated action, collective achievement and shared accountability (Fletcher, 2012), while Drath et al. (2008, p. 636) count the presence of direction, alignment and commitment as markers of (processual) leadership. In short, these different concepts are similar and I would argue essentially "about" the same thing, but I will use the term adaptive space to refer to this dynamic going forward in the paper.

Enabling leadership is about creating good conditions for accomplishing adaptive space and may involve keeping operational leadership "in check"—making sure it is aligned with, not counter to, the emergence of adaptive processes such as new products, new processes and new organizational configurations (Uhl-Bien & Arena, 2017). Further, enabling leadership has been theorized as catalysing adaptive dynamics (or fostering "adaptive space") by fostering interaction, fostering interdependency and injecting adaptive tension—all mechanisms of CAS dynamics (Uhl-Bien et al., 2007). Looking to find enabling leadership in practice, this is what we might expect to see.

The somewhat paradoxical task for leaders, from a complexity perspective, is attempting to manage something (desired emergent outcomes) that is not directly manageable. Viewing what happens in organizations as *only* an unfolding, emerging process, is not a very useful guide to action for those in organizations, be they managers or not, who wish to influence what happens (Hernes, 2014, p. 89). Further, how individuals influence forces of social construction of leadership has been described as a valuable addition to relational leadership perspectives (Fletcher, 2012, p. 95). CLT as a theoretical perspective is well suited to this context as it manages to focus the collective, interactional generative emergence process as the motor of innovations in organizations, and yet does not lose sight of individual agency; all while not implying that individual agency equals *control* (Lichtenstein, 2016). This paper examines how cases of individual agency are practised to influence the development of emergent outcomes; more specifically, how *agile coaches* at Spotify practise enabling leadership in their work with teams, contributing to a key mechanism of complexity leadership: the generative emergence from agents interacting. The term "practice" is here used to signify "sets of sayings and doings" (Schatzki, 2002, p. 73) that hang together in meaningful "blocks", i.e. practices (Nicolini, 2012, pp. 165–166). Practices thus include directions and "oughtness", i.e. ends, as well as more granular tasks to achieve those ends (Nicolini, 2012).

3 | RESEARCH DESIGN

The purpose of the present study is to explore how agile coaches in an innovative software company are practising *enabling leadership*, a key component of complexity leadership to balance structure and flexibility, and how this contributes to leadership outcomes in teams. A single case study was used to answer the research questions. Spotify was chosen as the researched case as they were believed to likely practise something resembling the complexity leadership theorized in CLT. Spotify has the explicit ambition to constantly challenge and improve their own practices in order to develop exciting new things for customers. In addition they aim to constantly improve the organization, all the while attempting to be neither bogged down by bureaucracy nor torn apart by "too autonomous" teams (presentation given by Kniberg [2014], attended by the author); speaking directly to customers' wishes and attempting to achieve outcomes of learning and innovation while not taking a direct route there through simply giving the right commands. For this reason, at the time of the study, Spotify was deemed a prime example of an organization struggling with balancing structure and non-structure to achieve continuous innovation. Within Spotify, the *agile coaches* are of particular interest because, having no managerial authority, they have to rely on enabling leadership actions in order to improve the organization. While formal managers can also engage in enabling leadership, roles without managerial authority are more restricted to *only* enabling leadership, possibly providing a "purer" view of it. Studying the agile coaches thus allows us to better understand how enabling leadership can work in practice, contributing to our knowledge of this "critical form of leadership for adaptive organizations" (Uhl-Bien & Arena, 2018).

An overview of the company and its general organization is provided below, and a description of agile software development is provided in Appendix A, for context. For a more extensive review of agile development methodologies *in general*, see, for example, Annosi et al. (2016).

3.1 | About Spotify

Spotify is a company offering a streaming music service over the Internet. Having grown quickly from a small startup founded in 2006 to a larger company (growing from 50 to 300 employees between 2011 and 2013, when this study started; to over 2900 in early 2018) while competing to "win the streaming music wars"[1] with competitors such as Apple, Amazon and Google, the organization has been, and still is, figuring out how to balance being "on the edge of chaos" (Lewin et al., 1999), staying innovative and competitive while growing fast (Brown & Eisenhardt, 1997).

Spotify is organized[2] in a multidimensional matrix-like fashion (see Figure 1), with the *squad* as the main producer of value, grouped together in *tribes*. At the time of study, squads were typically supported by a *product owner* (PO) and had access to an *agile coach* (AC). Members of squads also had *chapter leads* (CL), which were also their first line manager. A chapter is the group of employees within a tribe who are of the "same kind", for example, Java programmers. Since squads often are a mix of competencies, members of a squad

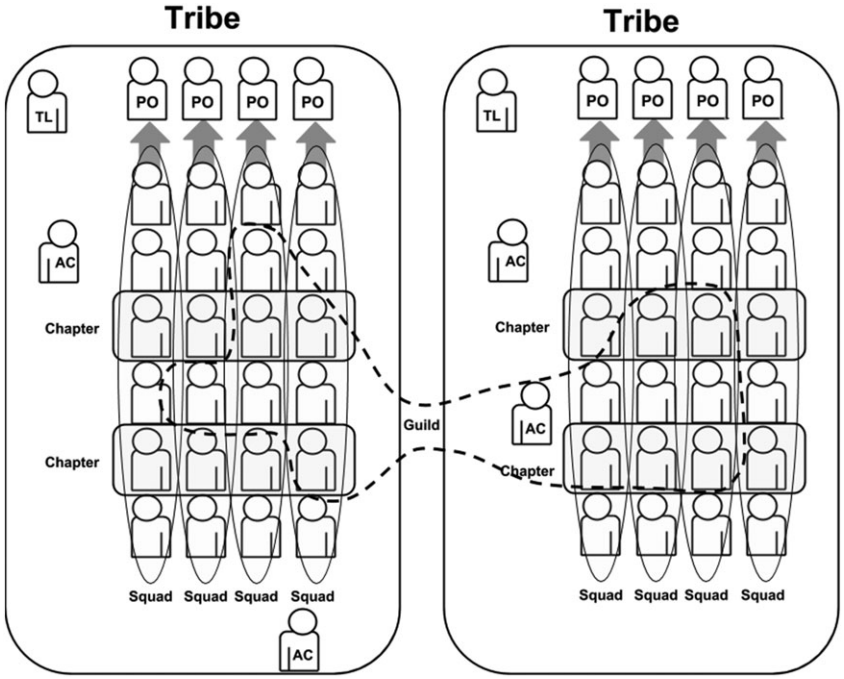

FIGURE 1 Illustration of the matrix organization of Spotify's Technology department at time of study

will have different chapter leads, which may be present in that squad or reside in another squad within the tribe. A chapter lead typically divides their time between being an "ordinary squad member" and managerial duties. Across both squads and tribes are communities known as guilds, similar to "interest groups" that anyone can join.

Related squads form tribes together, headed by a tribe lead (today, this is a tribe leadership team). At the time of the study, examples of tribes in Technology were Infrastructure and Operation (IO tribe), working on more internal systems and services that the rest of the company use, and More Than Music, working on different kinds of collaborations with other companies, e.g. putting Spotify in cars.

3.2 | The setting: The agile coach role at Spotify

Agile coaches were typically based within a tribe and working with several squads (teams) within the tribe while also supporting the tribe as a whole in collaboration with other coaches and leaders. Not a managerial role; the role is formally described very broadly and includes teaching, facilitating, one-on-one and team coaching, providing tools, being more hands-on or more hands-off, modelling agile values, arranging workshops, and so on. In practice, different coaches have different styles and different focuses depending on team needs and their own preferences. Not all squads are working with a coach at all times. Ultimately, the tribe lead can decide that a coach should be working with a team, though this prioritization usually happens in discussion.

At Spotify, the agile coach role has evolved from the role of "scrum master" to be less about scrum specifically and more about team dynamics and performance in general (see Appendix A for an explanation of scrum roles). However, they still consider themselves to be working within a decidedly agile framework or mindset (explained by a Spotify agile coach at "How agile coaches help us win", an event open to the public, March 2014). Though they had left the title "scrum master" behind, the history matters. An agile coach is not to be confused with, for example, an executive coach working with individual executives on their leadership style and personal development (Shoukry & Cox, 2018), or executive teams (Kets de Vries, 2005). At least in this study, they are more likely to have a degree in software engineering than in psychology or business, and often had worked as developers themselves at some point and later transitioned into "people roles."

3.3 | Sample and procedure

The overall design framework is a descriptive case study, a type of case study used to describe a phenomenon and its real-life context (Yin, 2003). The guiding questions in the design and data collection of this study were as follows: "What do agile coaches do here?", "Why do they do it?", and "Why is the coach role needed here; what function do they provide?"

Contact with Spotify was initiated through another study, through which the role of agile coach was discovered. This author was later invited back to continue research on the broad topic of self-organizing practices. An informational letter was sent out, inviting interested employees to be interviewed or shadowed. In addition to interviews, this researcher was allowed access to offices and in an initial phase held informal interviews, observed in meetings and read documents from the intranet (see Table 1 for a summary of data sources). It was decided to proceed by focusing the study on the organizing function provided by the agile coach. This study is based on an analysis of interviews with agile coaches.

Semi-structured interviews were conducted with 16 agile coaches in Spotify during a time span of about one year, mostly during 2014. At the time of interview, the coaches were aged 27–44 years (M = 35.0), with the shortest tenure being 5 months and the longest 3.5 years (M = 18 months). Three of the interviewed coaches also

TABLE 1 Data sources of case study, including pre-study sources and formal study participants. Pseudonym in paper, age, and manager status

Sources		Approx. time used
Pre-study sources		
Text sources	Intranet documents regarding team meetings, agile coaches, coaching tools, and culture Blog posts by Spotify employees about agile coaching, teams, and culture	
Informal interviews	Developer Leader developer in HR Agile coach	~1 hr ~1 hr ~1 hr
Observations	Quarterly planning meeting Daily stand-up Retrospective "POTLAC" meeting (Product Owner, Chapter Lead, and Agile Coach for a squad meet and discuss squad) Public presentation on "Agile Coach the Spotify Way"	~45 mins ~30 mins ~1 hr ~45 mins ~2 hrs
Formal study sources		~1–1.5 hrs
Interviews	Coach 1, age 44 Coach 2, age 38 Coach 3, age –, CL Coach 4, age 30 Coach 5, age 27 Coach 6, age 28 Coach 7, age 31 Coach 8, age 41, CL Coach 9, age 31 Coach 10, age 33, CL Coach 11, age 36 Coach 12, age 34 Coach 13, age 32 Coach 14, age 41 Coach 15, age 41 Coach 16, age 43	

CL = chapter lead of agile coaches

had a formal leadership position as "chapter leads", or line managers, of other agile coaches (see Table 1). Of the coaches interviewed, there were 11 men and five women.

Interviews were conducted individually at Spotify offices in Stockholm, Sweden, except in the case of a New York-based employee, which was conducted through Skype. Interviews were in Swedish or English, about 1 hr long, and recorded and transcribed by the author. Interviews were transcribed and analysed in the original language. Quotes have been translated into English as needed for this text.

Respondents were encouraged to use detailed, concrete examples in their answers and, when applicable, to think of specific people and situations to illustrate what they mean, in order to ground the data material in episodic memory—to start with what respondents remember happening and doing, rather than what they think they "know" (Shondrick & Lord, 2010), the main purpose being to get at everyday knowledge grounded in concrete circumstances (time, space, people, events, situations) (Flick, 2000). However, participants were also asked to explain what they were trying to achieve by doing certain things, exploring motivations, attributions and causal inferences made by participants—assuming they are "knowledgeable agents" who know what they want to do and are capable of explaining their intentions and actions (Gioia, Corley, & Hamilton, 2013). To build internal validity, inconsistencies were probed (Eisenhardt, 1989a).

Following a thematic analysis procedure (Braun & Clarke, 2006), the analysis was conducted with three main concerns in mind: (1) What are coaches trying to achieve for/with teams? (2) What

TABLE 2 Example of how text was inductively coded

Sample quote	Coded as
"at the most basic level a regular chance for people to talk	
about *how* they're doing things instead of what they're doing.	Metacognition
And less in a technical sense and more like, how are we	
working together, how are we working with our	Awareness of context//Think
stakeholders? And give them a chance to give a bit of	
feedback to each other, to the PO, in a safe environment and	Feedback//Trust
hopefully a fun one. And get them to think about like, so	Fun
here's a problem, or here's something that is not ideal. What	Surfacing//Increase transparency
could we do? What possible things could we do to address it?	Action bias//Shift responsibility to team
And encourage them to come up with at least one possible	Concretize
thing that they are willing to commit to try."	Commitment

practices are coaches using in trying to achieve (1)? (3) What is the coaches' reasoning about their practices—what effects do they think their practice has and why? Essentially the goal of the analysis was to find out how coaches practise enabling leadership and to understand those practices. This meant attending to the frames, activities, motives and relationships described by participants (Chreim, 2015). Coding of the data was conducted with a mix of a priori, theory-based codes, and codes emerging from reading the material. A priori codes were based on the original research questions and components of CLT (Uhl-Bien et al., 2007), especially the three leadership components: on capturing the three elements above, i.e. goals/aims, practices (saying & doings), and beliefs about mechanisms; and on a common-sense idea of categories such as "Coaches describing their own role," "Interfaces with other roles," "Describing Spotify context". The contents of the a priori high-level categories were coded more inductively, for example, markers of successful or mature teams, or what it is that coaches *do*. All interviews were first coded by hand, and then another round of coding was done using NVivo 9 software, providing both a second review of codes and finer granularity of coding. Table 2 provides an example of inductive coding of a snippet. Once coding was completed codes were clustered together based on similarity and relatedness. See Appendix B for the final codes and clusters of the results presented in this paper. All coded snippets in a cluster were re-read to provide a new sense of what that cluster was really about, how it should be described and named.

directly, and with the surrounding organization, to create conditions favourable for teams to create value. What these favourable conditions are more specifically, and how coaches act to try to achieve them for teams, i.e. how they practise enabling leadership, is what this results section centres on. Some coaches also emphasized their role as culture bearers and change agents, driving continuous improvements and explaining, teaching and modelling Spotify culture.

The purpose of the coach role is to help teams be high performing, but what does that mean more specifically? Being a "mature" team, high performing, or a team that "works well" was described both in terms of team outcomes and in characteristics of team interactions within and between teams. A summary can be found in Figure 2. The primary outcomes that mark a team as high performing, from the agile coach point of view, are (i) delivery and (ii) continuous improvement.

The team goal outcomes (B) are the "point of it all", but what the coaches seem to focus more on is Box (A) of the figure, which are intermediary states that are believed to lead to or generate the desired outcomes. Through the lens of CLT, these are markers of the adaptive space that generate learning, creativity and adaptation. Coaches reason that if a team's way of working—their dynamics—can be characterized as in Box A, the goal outcomes (B) are likely to also be happening, or at least not be far away. The coach's activity is therefore generally geared towards improving the states in Box A, roughly corresponding to the adaptive space in CLT, i.e. that which *generates* outcomes, in this local context.

4 | RESULTS

4.1 | The goal of agile coaches: Accomplishing adaptive space

The goals of the agile coach role, according to the coaches themselves, are to help teams find good ways of working (and keep improving them), have a sense of autonomy and ownership, be motivated, and feel like coming to work on Mondays is fun. The thought is that teams create value, and coaches support teams by working with them

4.2 | Coaches practising enabling leadership to accomplish adaptive space dynamics in teams

Having established their goals, as summarized in Figure 2, we now turn to what coaches *do*, and what function coaches provide for the emergence of adaptive space dynamics in teams. These enabling actions are summarized in Table 3, and each is explored further in this section.

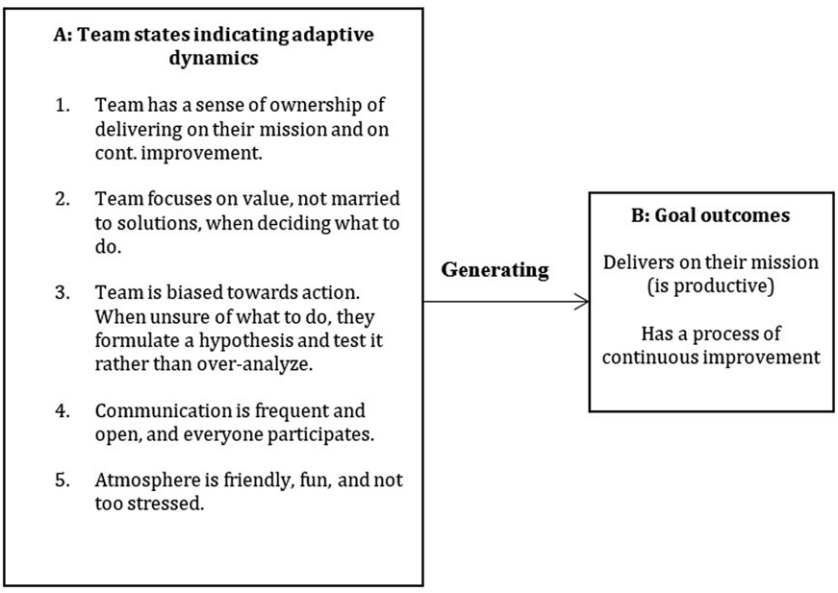

FIGURE 2 Team states indicating adaptive dynamics, generative of goal outcomes for teams

TABLE 3 How enabling leadership is practised by agile coaches

Practice	Examples	Illustrative quotes
(a) Increase *sensitivity to context*	1-on-1 coaching about how to think, what to consider; at any time it seems prudent, encourage to consider the consequences of one's actions as individual and team, their impact on others, consider that others may not know what you know, and vice versa.	A1. Encouraging paying attention to context and considering what others understand: *"I talk a lot about journeys. 'What is it that you know, that they don't know? And what have you done to explain it to them, so we all know we're going to Paris and not London?' / … /People become much more aware of their surroundings and what is happening around you, how people see you, how you see them."* [Coach 8] A2. Encouraging considering consequences on others: *"Thinking about how they affect others in a group with their behaviour, both positively and negatively. A lot of that is either new to people, they've never been asked or challenged to think about it before. And for some, it's very difficult."* [Coach 7] A3. Coach describing an episode of getting people to understand each other's different perspectives better (increasing sensitivity); consider consequences of actions: *"[About developers sometimes being snarky reviewing each other's code]. So, we pulled together all the Android developers, from several teams, in a discussion on how we work with this, how we could improve and so. So that was a way to get each individual to see their role in the whole, and that how you act actually affects others and so on."* [Coach 10] A4. Describing a conflict episode; increasing sensitivity through guided individual reflection, increase empathy: "*In this situation where two team members can't communicate, I talk to them one by one, I hear what the problems are. I explore with them – 'so what do you think will happen if you never confront each other about this?'"* [Coach 5] A5. Describing the ideal of being aware of context, including considering the end user, what team as a whole need to do, how does team work effectively and how do "I then play into that": *"What is the ideal team member. They will have full understanding of the end user and their needs, what the team needs to do, how the team works most effectively to deliver that with as good quality as possible."* [Coach 10] A6. Coach answering the question "**Why is it important to visualize the work?"**: *"I think it is just a simplified way to understand and grasp the context and get a sense of how we're doing, what we are working on. And it is one of the more powerful ways of doing that, I would say."* [Coach 12]
(b) Boost and support other leaders in the team, particularly the PO	Work with PO; Coach PO how to lead, how to be a PO; How to lead in the Swedish setting; Helping CL prepare for difficult conversations.	B1. *"[The squad] were doing one thing and then, due to some reorganizations, they had to take on another piece of work. And it was the PO who was stressed about having to do that extra work, it put pressure on him, and he kind of delivered it like, 'well we've been told we have to do this so there's no choice, we have to get on with it and do it.' And so that happens and we settled everything back down and it got better, and then he did the same thing again maybe two weeks ago so, uh, that is something I am working more personally with that person."* [Coach 15] B2. Coach working with a part of the organization deemed as troubled, with no teams, no teamwork, and many interpersonal conflicts: *"I'm preparing everyone to get [to the point of being able to discuss how to organize themselves]. Right now, I am working with the management team, we're reading a book on shared goals and how that affects a team, and how you can't be a team without a shared goal. Soon they'll be like 'oh, we need a goal for each team!'. At the same time, I'm talking to individuals, preparing them and gauging where they are and how they feel about working in a team. / … /If we had everyone in a room and I asked 'what works and what doesn't?' we couldn't do anything with the output. Some would say we should have four teams and others, two teams. We can't do anything with that, because the manager*

(Continues)

TABLE 3 (Continued)

Practice	Examples	Illustrative quotes
		hasn't formulated a vision yet. We need to consider where we're going [before discussing how to organize.]" [Coach 13] B3. AC helping CL conflict resolve: "*We had a case where two squad members disagreed over something and it was pretty heated and it came up in the retrospective, so I did a retrospective that sort of aired it. And then I worked pretty closely with their CL, to support him in conversations that he had with the two individuals. The CL had conversations with the individuals involved and then we facilitated a conversation between the two of them, and they sort of got to a better place. I helped the CL prepare for it and then he facilitated it. Setting clear expectations for people on what professional behaviour looks like and how to handle a disagreement professionally. Helping him think through, like, how to get beyond the who's right, who's wrong conversation. Help individual participants sort of move past that, help him to understand the broader effects on the team that this type of conflict has. Help articulate them to the engineers."* [Coach 3]
(c) Establish and remind of simple principles, interpreted locally	*Some of the principles:* "Value first"; "Function over form"; 12 principles of agile manifesto; Action bias; How people interact – higher bandwidth is better, i.e. face to face. Interact with respect and receptiveness.	C1. Focus on value and function over form as "simple rules": *"especially engineers fall in love with a particular technical solution that seems fun to implement or that seems very good. But there I have to help the team to not focus so much on the solution but to focus on the value we really want to achieve. And then you might find that a solution that is 10% as big will also solve the problem. And what I see is that it is very difficult to focus on value because it is fluffier, it's much easier to say 'this is what we'll do.'"* [Coach 9] C2. How a coach reinforces the simple rule of action bias by prompting team to distil their thoughts to something doable: Agile Coach 6 (AC): *What is one action you can do?* / Team member 1 (M1): *We're gonna run a regression on one squad and I think Squad Q is a good candidate.* / AC writes a 2 do on the board: 'Determine metrics statistically for one squad'. /Team member 2: *Squad Q are completely unaware of what metrics, but Squad X are quite independent.* / Product Owner: *We have to sit with the squad.* / AC*: So what will you have done?* / M1*: This is expanding the scope and we're already pressed, we still have to program the statistical stuff.* / AC*: So what is the least you can do?* C3. Coach reinforcing an agile manifesto principle "in the wild", i.e. not in a coach-run meeting but just present in ordinary work: "*I try to be present and listen to dialogues between team members, both to listen and give opinions and coach a little bit, as it happens, to emphasize certain principles, values and so on. I might hear for example 'we're having some problems with them, they're not responding.' And I would say: 'remember that face-to-face communication is always better than sending an email.' Little things like that."* [Coach 1] C4. Coach talking about the value of fostering a respectful culture through how you interact: "*How do I act: am I happy, am I open, am I receptive … It's more about* how *one communicates than* that *one communicates face-to-face/ … / I actually* don't *think agile coaches* [in general, not at Spotify] *think like that. I notice when I interview people that many disregard it, it stays at the agile principles and they don't consider culture, or maybe we should call it behaviour, very much."* [Coach 12]
(d) Observe team, pay attention to dynamics, and monitor	*What is observed*: Mood of team; Helping behaviours; Smiling; Talking; Being civil towards each other; What is not said; Team members mentally present; Patterns, like failing to deliver using certain planning method.	D1. Coach mentions observation as important and common/What is observed (mood, things going well): *"Often my role is just observing, to gather the*

(Continues)

TABLE 3 (Continued)

Practice	Examples	Illustrative quotes
	Philosophy: Observing interactions more important than "applying techniques". Spreading work between too many teams hampers the opportunity for this observation.	*mood of the team and whether things are going well or not, you know."* [Coach 7] D2. Coach describing observing negative team dynamic: *"I had observed that the team didn't always help each other on tasks. Some individuals didn't want to leave their comfort zone."* [Coach 11] D3. Coach talking about when to engage and when not to engage (how do they know): *"That is by far one of the hardest parts of this role, I think. Knowing how and when to engage. But, that is what we're thinking about, whereas, often, people in the team* aren't *thinking about that."* [Coach 6] D4.*" … not in a meeting but when people sit here and work and try to move forward with their tasks. And also when you see that people might benefit from working more together in the team, doing pair programming and things like that."* **Researcher: "How do you notice that?" "***I hear people talking a lot, but at a distance, or I hear that people would benefit from some help but maybe a different set of skills and instead of trying on their own they should have an interactive session. 'Wouldn't it be better if the two of you focus together on this thing for a half-day?' – examples like that."* [Coach 12] D5: Coach on deciding more time for observation was necessary: "*I had four [squads] and Coach 10 had three and it felt like you were there and, sort of, sprinkled some fairy dust, did a thing, and then rushed off to the next team. I always felt a little late, a little unprepared and like I came popping in like 'Now were doing this! Bye!' you know? And so we decided we should be focused, focus on a single squad and work only with them, build trust and get to know them and their everyday and, like, be much more participating in what they do."* [Coach 9]
(e) Make the unseen more visible and tangible (surfacing conflict) through mirroring and questioning	Visualizations of work and work process, e.g. using boards, sticky notes, digital visualizations. The retrospective meeting itself. Various agile games.	E1. Coach on surfacing through questions: "*Tell me how you're doing this. When someone comes in and sort of pokes at these things they haven't thoroughly looked at before, it opens the possibility that someone says 'this is how we do it' and then someone else says 'we do? Because I never did it that way …' So my job is to come in and ask a lot of questions, and just plainly ask them to tell me how things work and in that way, open up a dialogue in the team."* [Coach 5]
	Example of questions used in surfacing: "Tell me how you're doing this"; "what does 'done' look like?"; "What would help make this decision easier for you?"; "What is one small thing you could try?"	E2. Coach on helping lower the bar for action, surfacing paths for action: *"If there is a disagreement between people as to how they might proceed, I might ask them, 'what would help make the decision easier for them?' Or, 'Are you missing any information right now that would help you to know better which way to go?'"* [Coach 6] E3. Coach on getting commitment to act by surfacing and questioning: *"Get them to think about like, so, here's a problem, or here's something that is not ideal. What could we do? What possible things could we do to address it? And encourage them to come up with at least one possible thing that they are willing to commit to try."* [Coach 7] E4. Coach on surfacing unique information and views within the group, facilitating team reflexivity and learning: "*If you facilitate a situation where you get the team to really look at these things, it is my experience that more or less always they will start to see that 'actually, we don't agree on this, we don't understand this at all'. / … / So they start to see that the team actually had differing views and opinions on this. For me it comes with experience, seeing these things. If I as a coach cannot understand, there is a high chance others also do not understand."* [Coach 1] E5. Questioning to surface paths for action, and also practice (c) reinforcing simple principle of action bias, of face-to-face communication: *"I ask like, 'so when*

(Continues)

TABLE 3 (Continued)

Practice	Examples	Illustrative quotes
		are we going to get feedback from the team we're doing this for?' And really encourage them to go face-to-face and show people, and demo, and do as much of that as possible, whereas traditionally we tend to fall away from it … and just kind of do what we think people want rather than having a real open dialogue, that's always been a challenge for this tribe." [Coach 7] E6. Coach describes episode of starting to organically create collective ways of working by surfacing and reflecting on concrete problems: *"Many times it's like this – we don't know what each other is doing. We had an integration bug. And I'll show like this 'the last month we have had three integration bugs each day at 4 pm, could we have been more aware of that somehow?' – 'Yeah, maybe we should meet every morning and talk about what we will commit in the afternoon?' Then wow, great, suddenly you have started doing daily stand-ups – and you didn't have to say a word about 'agile'. Unless the team realizes they have a problem they won't want to solve it. So, for me it is a lot about helping the team see their problems, because once they see them, they will solve them themselves."* [Coach 13]
(f) Facilitate and encourage constructive dialogue as the generator of new forms	Setting a format; "Tossing" an open question; Live directing (calling on people); Acting as a surrogate (asking "stupid questions"); 1-on-1 coaching to instil civil and constructive ways of interacting. *Aiming for*: no one should dominate, everyone should contribute, self-organized or facilitated less important.	F1. *"As a coach you don't want to steer the discussion, but also make sure no one is dominating it completely. So you learn as a coach to find formats that make this better or worse. I know which of my teams I can pose some open questions to and they will together find such a dialogue and come to a decision, and which of my teams don't work well under such conditions and will never have a very productive dialogue, so I find ways for them to do it. / … / Finding something to make their interaction different."* [Coach 5] F2. A coach describing the constructive dialogue dynamics they are looking for: *"A very clear signal is communication. And seeing, like, how much are they communicating? Who are communicating? How? Is this a constructive dialogue, like 'I was thinking of this – oh yeah, we could do that but we could also consider this.' That they're bouncing ideas, mulling over ideas. Is it questions or more like I think we should do it like this, period. So I see how much they communicate, what parts of the team are communicating, how they're doing it, and at what times. Are they doing it only at specific meetings or can I see them doing it daily? Are they communicating about things other than work? Can they give each other feedback, are they doing that? A team that isn't communicating has not come very far. And a team where you don't dare speak openly about most things, like not dare question a solution someone suggested or say their own part, a team like that has quite a ways to go yet, too."* [Coach 10] F3. Coach describing that when teams are really good at constructive dialogue, they themselves do not even have to be there anymore: *"Normally I facilitate those meetings [retrospectives], so a very positive sign is if I'm away, let's say I'm on vacation or I'm travelling to Stockholm, and one of the teams I work with, they've run that meeting by themselves. So one of them runs the meeting and they follow the same format that we often follow, and they come up with really good, what I would say are good actions out of that meeting. Then to me that is a team that has really started to own their own process and continuous improvement and that's a great sign."* [Coach 3]

4.2.1 | Increase sensitivity to context

An important way that coaches enable adaptive space is by affecting the sensitivity of others, mainly squad members, towards particular cues within their work environment. What signals are being picked up? What kinds of cues do people respond to? And how do they respond? Different ways of interacting may give rise to different results and affect possibilities for alignment. Another way to phrase this is that coaches try to affect what team members *pay attention to*. What cues are relevant is highly context-dependent but one example, for one team, was to look for specific opportunities to help other teams develop A/B testing so that there would be a positive, tangible

example for the rest of the company to see (so that others too would want this team's help to improve A/B testing).

Practice c in Table 3 describes a major rule of thumb coaches emphasize, that may also affect context-sensitivity: to consider the value of any solution or action, and so making this something to "look for" or factor into decisions about what to do. Other examples include trying to enhance team members' awareness of context, how their actions affect others in their team, and how the team's actions affect others in the organization (quotes A1–A5). Coaches also encourage working on improving empathic skills, taking other's perspective to understand stakeholders and colleagues, and oneself, better. Encouraging team members to consider the consequences of their actions for others (quotes A2, A4), and be more attentive to the needs of others, strengthens mutual interdependence within the system, a factor of CAS. Being more sensitive to context works in tandem with making the context more transparent and rich, which is the focus of practices b and e in Table 3.

4.2.2 | Boosting and supporting other leaders

The PO often has a central role in providing context for teams and interpreting what it means for a team to provide as much value as possible. When a coach is working with a newly formed team, preparing the PO is an important opportunity to have great impact on the team-to-be. If the PO has previous experience from more traditional organizations, some "unlearning" might be necessary to make sure they use a more democratic style, share information and so on (quote B1). The PO is supposed to help and support the team in building "the right things", that is, focus on what is valuable for stakeholders rather than be a manager with all the answers—ideally.

The coach might also support the Chapter Leads, the line managers in a tribe. This was typically brought up when talking about interpersonal conflict—for example, helping the CL prepare for a difficult conversation with a team member (quote B3). Further, all roles in the team leader triad—the PO, the CL and the AC—meet regularly to discuss issues around the teams in their care.

Thus, coaches have a great possibility for influence in their tribes through influencing others' ways of interacting, promoting agile principles of transparency, and helping others be better leaders and colleagues.

4.2.3 | Establish and remind people of simple principles

Agile coaches enable adaptive space by promoting and focusing on simple principles, interpreted locally. Coaches all agree that *value* is the guiding principle for their work at Spotify, focusing on the "why" before deciding "what" or "how": this idea was present in all interviews and one of the most common codes overall (see quote C1). It becomes a "simple principle" because it is that which actions, or other rules, are measured against, helping people prioritize and act wisely. Choosing a lens of "value" over particular solutions enables alignment in a lightweight and adaptive way across levels of organization, in line with agile software development principles (Poppendieck & Poppendieck, 2003). It works both as a discussion catalyst on a team level and as a question to ask oneself to enable re-alignment of one's own work with the purpose of creating value.

Principles can be used as rules of thumb, for example the 12 supporting principles of the agile manifesto. If a coach spots deviations from what these principles are intended to help with, that is a typical moment where the coach might intervene to remind people, in a meeting or "in the wild", i.e. just normal work if the coach happens to be there; see quote C3 on preferring face-to-face communication over email (a rule of thumb derived from an agile principle).

This practice is grounded in the coach belief that *how people interact* matters a great deal for what comes out of interactions, the emerging culture or climate (see quote C4). A "high bandwidth" style of communication, such as face-to-face, is seen as preferable, more efficient, and more effective; it is also the sixth agile principle. Rather than providing directive leadership about 'what to do', or being laissez-faire and doing nothing, coaches promote the use of the rules of thumb teams and individuals can employ to themselves generate aligned decisions about what to do in novel situations.

4.2.4 | Observe the team, pay attention to dynamics, and monitor

The most frequently coded activities agile coaches report doing are observing and listening. In a general way, what they are paying attention to is how the team is working as a team, and how that compares with their image, mostly based on experience, of what good teams do (see Figure 2; see quotes D1, D2). This, of course, will mean different things in different settings depending on the specific team, situation and individuals. It should be emphasized that the observation is not passive, but open, sensitive to whatever might arise in the moment, and tempered by continual judgement of when to engage and when to stand back. Judging this correctly was brought forth as one of the hardest parts of the job, and also difficult to explicate in words exactly how it was done, suggesting a more implicit knowledge (see quote D3). Having experience with good teams was frequently mentioned as what created the ability to judge whether a specific team presently displayed favourable dynamics (for a specific example of judging, see quote D4). Monitoring the team dynamics vis-à-vis the states in Figure 2, agile principles, and the coach's experience at least seems to be the basis for judging when some action is needed on the coach's part.

What an agile coach uniquely brings to the table is time and willingness to attend to the dynamic of the team (quotes D1, D2). It guarantees that there is someone paying attention to how the team itself is functioning without requiring any one individual to multitask, especially not one who is uninterested in such things. When everyone on a team is focusing on the person talking, the coach is the one observing the listeners, for example, "what people are not saying" (Coach 6) or whether "they are mentally present" (Coach 9). The coach thus lends a kind of metacognitive function to the team—observation practices, combined with feeding back through surfacing practices, enables team reflexivity—helping the team observe its own dynamics.

Some coaches felt they had responsibility for too many teams, leading to too much "context switching" (Coach 7) and leaving little time for necessary contemplation or to just sit with a team and get to know them better. Several coaches mentioned at the time of

interview that they had just decided in their tribe to work in a more focused way with fewer teams (for example reducing from four to one).

Most coaches seem to think that the core of their job, at least ideally, is to observe, reflect and judiciously perturb the team as needed, and in order to do this best, spending time on site with a team is necessary. Being present and having the time and space to think, research and discuss, let coaches relate to people and what is happening as it happens, rather than "popping in" and applying some technique "to" the team without much reflection (quote D5). To make wise decisions about what teams really need, one needs not so much the most "techniques" as one needs time to sit with teams and observe their interactions, coaches seem to agree. Of course, what is suggested is not really that less knowledge of techniques is better but rather that use of techniques should be more mindful and sensitive, and less context-switching helps with this goal.

4.2.5 | Make the unseen more visible and tangible—surfacing conflict

Following observation, the most commonly coded things agile coaches do is questioning and mirroring what they see. They often go together, such that the coach first observes something, tells the team or individual, "This is what I see", and then asks, "Is this what you see too?" or "Why is that?" or "Is this important to our stakeholders?" Questions and mirroring can be about anything, but the basic function they provide is to make the unseen or unspoken more visible and more tangible.

According to CLT, enabling leadership builds an atmosphere where diverse ideas interact, the thought being that heterogeneity pressures interdependent agents to adapt to their differences (Uhl-Bien et al., 2007, p. 311). Asking questions can be a way for the coach to introduce internal tension (Uhl-Bien et al., 2007)—or bring it to the surface—by making conflicting views, priorities and incongruities apparent and thus possible to work through (quotes E1–E4).

Moving towards action is an important overall ideal that coaches try to achieve for teams, and for Spotify as a company. "When in doubt, make a decision", one coach quotes the CEO as saying. Coaches seem to believe that making the unseen more visible, or the abstract more concrete and detailed, makes action more probable (see quote E6). As such, teams typically work with some form of visualization of their work—on a wall or digitally—and communicate around it, for example in daily stand-up meetings or interacting with the written notes on the wall. If visualizing and talking in themselves are not enough to make team members commit to a course of action, the coach might try to "lower the hurdles" even more by suggesting a course of action (more likely when the action is related to continuous improvement of the work process rather than some technical area in which the coach is not proficient), or by further questioning to reach "one small thing" that the team will commit to trying (see quotes E2, E3, E5).

Together, observing and surfacing—through questions or mirroring—create a learning loop for the team that covers a great deal of what the coaches are trying to do for teams. It is also the main point of the retrospective, a regular meeting facilitated by the agile coach for teams to reflect on how their ways of working are working for them. And if coaches suspect team members might not fully understand what is discussed, they might give voice to such a concern themselves, whether or not they themselves do understand what is discussed (quote E4). Additional facilitation techniques can be anything from certain meeting formats to visualization techniques to playing agile games to simulate various ways of working or decision situations, and so on. Agile games are utilized to teach and give an internalized understanding of principles of agile software development. Examples of such games mentioned by coaches are "the name game"—teaching the value of finishing a task before starting the next rather than multitasking (https://www.crisp.se/gratis-material-och-guider/multitasking-name-game); the "lean dot game", teaching about flow (http://blog.crisp.se/2014/04/03/peterantman/learning-flow-with-the-lean-dot-game); and "elephant carpaccio", an exercise in creating ever smaller user stories (slicing the elephant) (http://alistair.cockburn.us/Elephant+Carpaccio+exercise).

4.2.6 | Enable and encourage constructive dialogue as the generator of new forms

In describing the tell-tale signs of a high-performing team (HPT), what was most commonly mentioned was *communication*. HPTs communicate a lot, interact respectfully, and ensure everyone is heard, coaches describe. A team may be able to do this more or less on their own, but it is important that it happens as this *constructive dialogue* is generative of novel and better solutions.

As suggested in Table 3, quote F1, constructive dialogue does not *have* to be self-organized. While the team is trying to come up with solutions, the coach is trying to enable a team *dynamic that will generate* great solutions. For a concrete example of what coaches may look for in a situation, see quote F2. There is a broad spectrum of actions described by coaches here, from doing nothing and having the team completely self-organize (for example, by not even being present, quote F3), to "throwing" them an open question to run with, to setting a format/technique that will enable dialogue, to directing the dynamic "live" by dialling up and dialling down people who should maybe talk more or less, to acting as a surrogate and asking the question that others want to ask but don't, to simply contributing a personal perspective to the discussion as a participant.

Making a dialogue constructive is not just about everyone having a say, but also about what they are saying. Team members need to contribute with their best judgement and voice dissent when necessary. One coach explains, "'Politely question your colleagues'—politely. We're tough on our products but not our colleagues". The goal is an open environment where people feel safe to express even "half-finished" thoughts without risking being torn down, and coaches are always monitoring dynamics in relation to this. Are people contributing? Is someone dominating the conversation? Are people interacting respectfully? Are they mentally present and engaged? If not, the coach may intervene as above. Of course, a coach is still just one individual and not a panacea to all possible group dysfunction. See, for example, quote B2 for a description of a coach acting in a less functional setting, doing more "preparatory" work.

5 | DISCUSSION

This article has explored the role of leadership practices in managing emergent processes, in the context of agile software development in a high-velocity environment, using the lens of complexity leadership theory. CLT is tailored to fit knowledge-oriented organizations in a context characterized by a complex competitive landscape, and for whom the rapid production of knowledge and innovation is crucial for survival (Uhl-Bien et al., 2007). At the time of the study, Spotify fit the bill of a knowledge-oriented organization competing in a globalized market with rapid technological innovation. Spotify is attempting to balance autonomy and variety with alignment through the use of agile coaches, who lack managerial authority. This coaching role was deemed an interesting subject for studying the practice of enabling leadership, which has been highlighted in literature as a key component of complexity leadership (Uhl-Bien & Arena, 2018). More specifically, this study thus set out to learn more about *how enabling leadership is practised* by agile coaches, and how it might *contribute to the management of emergent processes*.

Past empirical research on CLT has neglected to examine alternative leadership roles, and studies of agile teams have rarely examined the agile coach role explicitly or with the perspective of coaches as leaders. A single peer-reviewed study (Srivastava & Jain, 2017) has previously examined the practices of the scrum master role (from which the agile coach role is derived) explicitly at all. This study thus adds to our knowledge about leadership in non-managerial roles, particularly as it applies to the issue of management of emergent processes, by its description of the micro-level basis of accomplishing adaptive space through local, everyday actions of enabling leadership.

What especially sets the coach role apart from either manager roles or team member roles is their intense focus on the quality of interactions in and surrounding a team, i.e. on the dynamics of the team. Coaches have a functionalist view of these dynamics in that outcomes matter more than the particulars of who does what, and step in themselves only if they deem it necessary. Further, coaches make use of two levers, the context-sensitivity of actors and the signal salience in the context, to promote alignment and influence what cannot be directly managed, emergent organizational outcomes.

5.1 | Steering complexity from within

Results offer a response to Dinh et al.'s (2014) call for research to understand how leaders influence underlying processes that affect the emergence of organizational outcomes, suggesting the agile coaches' intense attention to the quality of interactions as a possible way to manage emergence "from within". Though coaches do work on structuring conditions around teams, for example by coaching POs, collaborating in weekly meetings with both PO and CL about teams, coaches seemed to feel they were most successful at their jobs when able to bring presence and attention to situations, spend a lot of time with a team and being and responding to things in the moment, rather than when "applying" some meeting format (see especially practice d in Table 3). Relational leaders recognize the importance of the present moment, and being present in the moment, to respond to what matters in the moment (Cunliffe & Eriksen, 2011). Sensing and responding in the moment by "looking, listening, and anticipating" (Shotter, 2010), i.e. paying attention, is both something ACs describe they do very much and something they encourage in POs and other team members, in one-on-ones and calling attention to simple rules (practices d and c in Table 3 especially). They also encourage people to consider the consequences of their actions on others, consider others' point of view, and behave in ways that open up dialogue rather than close it down. In this way, coaches not only take a relational stance themselves, but actively promote it in others, partly by creating "situations", such as their retrospective meetings, and by the direct influence on individuals. Thus, a key mechanism in coaches' enabling leadership is dynamically judging *when* to provide more structure to a situation and when not to.

Consider what many coaches refer to as "constructive dialogue" (practice f in Table 3). These moments tie together team literature and literature on leadership in complexity. ACs believe themselves to create the most value when they provide, or help enable, opportunities for reflection and dialogue, a description similar to team learning behaviours (Edmondson, 1999; Mathieu et al., 2008). If we, in line with several researchers (Dutton, 2003; Hemlin, 2009; Lichtenstein, 2014; Raelin, 2016), see high-quality interactions, such as constructive dialogue, as the motor of continuous improvements and innovation, coaches are likely correct in this belief. Research on teams shows that team learning behaviours—e.g. "sharing, discussing, and reflecting on knowledge and actions" (Koeslag-Kreunen, Van den Bossche, Hoven, Van der Klink, & Gijselaers, 2018) or "asking questions, seeking feedback, experimenting, reflecting on results, and discussing errors or unexpected outcomes of actions" (Edmondson, 1999, p. 353), and not least team reflexivity (e.g. overtly reflecting on and communicating about goals, process, and outcomes; Schippers, Edmondson, & West, 2014)—are related to innovation (Schippers, West, & Dawson, 2015; Widmer, Schippers, & West, 2009) and other adaptive outcomes (Mathieu et al., 2008). Further, team research has shown that team learning behaviours are not automatic, as they can be personally risky. For example, sharing an idea or critiquing someone else's idea means taking interpersonal risk. Leadership behaviours can be critical in supporting an emerging dynamic of learning behaviours (Koeslag-Kreunen et al., 2018; Zaccaro, Ely, & Shuffler, 2008). Results from this study support the importance of leadership in supporting team dynamics, and extend previous findings by adding a fine-grained description of practices by a non-managerial leadership role.

Both research on team learning behaviours (Koeslag-Kreunen et al., 2018; Zaccaro, Rittman, & Marks, 2001) and organizational ambidexterity (Havermans et al., 2015) point out the value of "managerial energy" or leadership to the accomplishment of episodes of the desired dynamics. A way of understanding this is through the complex systems concept of dissipative structures (Davis, Eisenhardt, & Bingham, 2009). Dissipative structures are dynamic patterns that can remain only for as long as energy is continually infused into the system. The results of this study contribute to this view, from a different empirical setting, and paint a picture of a complexity leader different than a manager focusing mainly on conditions around interdependent agents interacting (Dutton, 2003; Fletcher, 2012, p. 86; Uhl-Bien et al., 2007). The wide range of actions coaches take in or around

accomplishing constructive dialogue include some that might be seen as rather "intrusive" in the dynamic itself, such as calling on a team member, preventing another from dominating the conversation, or posing questions themselves. Coaches in these situations adopt a stance congruent with McGrath's (1962) functional leadership or "leader-as-completer"—the coach monitors the dynamics closely and provides only what they deem necessary to nudge the dynamic closer to what is described in Figure 2. The AC as a complexity leader values the chance to be present and "tune in" to what a team dynamic needs right this moment, tries to instil relational ways of thinking, considering the consequences of one's actions, and overall has a large focus on the *quality of interactions*.

Results extend theory on different leadership foci—though coaches make use of both some relational- and task-focused leadership actions (Burke et al., 2006), their preoccupation with situational dynamics indicates a departure from such mainly object-oriented ontologies of person or tasks in favour of a more process-oriented ontology (Drath et al., 2008) of prioritizing what happens in the in-between, what we might then term "process dynamic focused leadership."[3] Previous research on team creativity has suggested that how people relate to and interact with each other is the "single most important stimulus" for encouraging creativity (Hemlin, 2009), suggesting coaches are on the right track when they prioritize this over, for example, applying particular agile techniques.

"Constructive dialogue" is a place for asymmetric interaction related to preferences (which include knowledge, skills, beliefs, etc.) that are *generative* of adaptive outcomes (Uhl-Bien et al., 2007). Empirical studies of CLT has previously found that holding space for constructive dialogue and surfacing or injecting conflict are important practices of enabling leadership (Havermans et al., 2015; MacGillivray, 2010; Plowman et al., 2007), which is supported here. The descriptions from the coaches (see especially practice f in Table 3) resemble "the ideal speech situation" in Habermas's (1990) theory of communicative action, "collaborative agency" (Raelin, 2016) in the leadership-as-process literature, and team learning behaviours (Koeslag-Kreunen et al., 2018) in the team literature (Edmondson, 1999), in which people speak freely and listen to each other deeply, there is diversity in point of view and taken-for-granted values and structures are challenged. By fostering heterogeneity, transparency, and respectful ways of interacting, agile coaches are strongly enabling the emergence of adaptive space.

This links back to complexity and the leadership of it through viewing a certain kind of dialogue as a motor of organizational change (Raelin, 2013) and continuous innovation, driving a state of generative emergence (Lichtenstein, 2014) which is the core of CLT's *adaptive space*. Though adaptive space is not reducible to only cases of constructive dialogue, the described moments of constructive dialogue are examples of a dynamic accomplishment of adaptive space.

5.2 | Two levers for fostering emergence: signal salience and context-sensitivity

Results from this study strengthen previous studies' findings (Davis et al., 2009; Eisenhardt et al., 2010; Plowman et al., 2007, p. 350; Regine & Lewin, 2000, p. 10) that using simple principles as guides is central to complexity leadership. By bringing to bear certain simple rules to be interpreted locally, anew for new situations, problems and constellations of people, coaches help bring about new order, continuously, while keeping things aligned, to some degree, with the company vision and mission. Brown and Eisenhardt (1997) refer to this as "semi-structure," and describe it as something lying "between the extremes of very rigid and highly chaotic organizations." In a simulation study, Davis et al. (2009) show that in dynamic environments there is a reverse V-shape relationship between structure and performance, akin to the "edge of chaos" (Regine & Lewin, 2000). Maintaining an optimum amount of structure under such conditions is difficult and requires constant attention and energy, which means the optimum amount of structure cannot be "set" but must be updated and regulated continuously; i.e. it is a dynamic accomplishment (c.f. Havermans et al., 2015). Simple rules act as local and flexible organizing elements and so are able to create order while keeping flexibility (Davis et al., 2009; Eisenhardt et al., 2010).

In this study, the role of agile coach at Spotify is a role almost entirely dedicated to this dynamic accomplishment of adaptive space at the level of teams, and so can indeed be said to be practising enabling leadership: contributing to the creation of structure and process that engage both conflicting and connecting to trigger and amplify emergence (Uhl-Bien & Arena, 2018). The study demonstrates that it is not always necessary to rely on bureaucracy even for orientation or coordination as suggested in Uhl-Bien et al. (2007, p. 314), but that orientation and coordination, too, *can* emerge under CAS dynamics, i.e. in adaptive space. A CAS is an open system with interrelated components (agents) that is capable of adaptation and evolution. This means certain conditions must be met for CAS to emerge and function effectively—for example, agents have to be able to interact with each other and their environment (Uhl-Bien et al., 2007). The coaches strengthen the ability of the system to generate emergence through two main levers, on an abstract level, by (i) increasing the *signal salience in the context* and (ii) increasing the *context-sensitivity* of organizational actors.

The interest of the organization is not to have just *any* emergence. There is no a priori guarantee that what emerges is either fit for its environment or in line with the organization's vision and mission (Uhl-Bien et al., 2007, p. 300). This is where the *signal salience* lever comes in. To achieve the desired emergence, the cues that are relevant to the organization's mission can be made more salient to agents in various ways (Hazy, 2006; Holland, 1995). Cues are signals to act. They can, but do not have to, be signalled intentionally or by a human being. They may come from the physical environment, computer systems, changes in the external environment, colleagues and managers. Agents getting their context delivered only through a manager will have a poorer, or thinner, context than agents in a context rich with signals. For example, encouraging team members to focus on value before form is drawing attention to cues regarding the company vision, increasing their salience. Strengthening individual team members' confidence to speak their minds, and making sure the conversation format encourages them to share their best judgement, makes the environment richer with higher quality signals for their colleagues and thus enables more informed decisions.

Coaches also work on the second lever to increase *sensitivity* to user needs, awareness of context, and the consequences of ones own actions on colleagues and even themselves and their own behaviours. Making others more sensitive, and linking their sensitivities to the company vision and mission on different levels strengthens the interdependency between system agents and thus, the capability for emergence. Agents sensitivities will determine what they attend to and how, and thus, what signals in an environment that will be understood or interpreted as actual *cues*, i.e. as signals *to act* (Salancik & Pfeffer, 1978; Weick, 1995, p. 50). Work on this dual-lever mechanism runs across all practices in Table 3 but is perhaps most clearly illustrated in practices a, b and f.

5.3 | Practitioner implications

Results highlight two important implications for managerial practice: (1) fostering opportunity for constructive dialogue, as this is a motor of continuous improvement and change; and (2) the value of human attention to the quality of interactions. Some teams can enact constructive dialogue on their own, while others need more help in the form of structure giving, a few prompts, or more hands-on direction. As a manager, it is important not to dominate nor let any individual employee dominate the dialogue too much, but rather foster the sense of psychological safety needed for honest communication to arise. That could mean that a manager should not even be present each time. But someone, and preferentially someone without their own invested interest in any particular outcome, may help a constructive dialogue come about through facilitation such as is described in the results, practice f.

Taking complexity leadership seriously means acknowledging that organizational outcomes emerge from interactions and that most good organizational outcomes cannot be ordered but must be enabled or fostered less directly. Emergence refers to bottom-up processes where interactions among lower level entities, for example individuals, create phenomena that manifest at a higher, collective level, and that is not caused by any one individual's actions but borne from the in-between of individuals (Bradbury & Lichtenstein, 2000). Taking an interest in *how* your people interact, therefore, should be prioritized for those wishing to lead complexity, whether or not coaches are used. Influencing the rules of thumb people employ in their interactions will influence what organizational outcomes eventually emerge. Having an actual human being designated to pay attention to this is likely necessary for it to happen regularly.

5.4 | Limitations and future directions

This study is not without limitations. While it seeks to contribute to the literature on leadership as something emergent, distributed and processual rather than something done to "followers" by "leaders", how to properly capture this, or where exactly to look for it, is a concern. In the end, the study nonetheless is focused on this particular group of employees, the agile coaches at Spotify. Rather than proving what "really works", this study gives a rich account of how people practising this fairly new organizational role of agile coach view the function of that role, and what they do to enable adaptive space in pursuit of producing quality software and continuous improvement. Having studied one particular organization only, the generalizability of the findings may be limited.

The nature of knowledge-oriented organizations and their environments seem to dictate the increased use of networked, collective ways of working where the sum of interactions is greater than individual parts—called adaptive space in CLT. This study shows how the role of agile coach contributes to enabling such dynamics. As the coaches themselves suggested, however, it was sometimes possible for teams to more or less practise this on their own. Future research might focus on the relationship between individual team member actions and the accomplishment of adaptive space, and compare teams that appear high and low on entrepreneurial leadership. To what degree is it necessary to have a human being paying attention to the interaction dynamics, such as a coach? To what degree can that, too, be distributed among team members? Can entrained ways of interacting completely substitute the need for either coaches or leaders? To what extent can ways of interacting transfer with individuals as team compositions shift?

6 | CONCLUSIONS

Complexity leadership is about balancing formal and informal organization to leverage dynamics of complex adaptive systems and produce learning, creativity and adaptation in organizations. Results from this study present an alternative focus for complexity leadership than has previously been theorized. Rather than focusing one's practice on the management of enabling conditions, it is possible to practise enabling leadership from the "inside out" by adopting a more micro-level focus on the *quality of interactions* amongst employees. Coaches are able to affect the quality of interactions through structuring situations, but the most by being very much in the thick of things, posing questions or mirroring observations, calling on people, reminding of rules of thumb, by capitalizing on teaching moments or actively doing one-on-ones. This could be seen as entering "into" complexity and trying to steer or affect it from the inside while avoiding pitfalls of micromanagement as coaches' authority relies on explaining and convincing, and their focus is on a particular kind of dynamic (of generative emer*gence*) rather than particular emerg*ents*. Coaches can both provide, and help teams develop on their own, the level of structure they need in situations to gain transparency in and understanding for their own work, working through problems, and so on. I suggest that a key to complexity leadership, dynamic as it must be by its nature, is not to uncover once and for all "what" to structure and what not to structure, but is more a question of dynamically judging *when* to structure and when not to, a function embodied in this study by agile coaches.

ENDNOTES

[1] See http://time.com/3109273/streaming-music-services-compared/ (accessed 3 April 2018).

[2] A note about time: It is impossible for a paper moving at the speed of academic publishing to keep up with the changes at a company like Spotify. As of December 2018, the PO role has grown into a Product Manager role, and the CL has evolved into an Engineering Manager role.

New layers of hierarchy have been added as the company has grown tenfold over the years. Do not rely on this study as the most current and accurate description of Spotify's internal structure.

[3] Thank you to an anonymous reviewer for suggesting this perspective.

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APPENDIX A

A.1. | About agile software development

The agile manifesto (http://agilemanifesto.org) is the "founding document" of agile software development philosophy. It has four tenets: (1) Individuals and interaction over processes and tools. (2) Working software over comprehensive documentation. (3) Customer collaboration over contract negotiation. (4) Responding to change over following a plan. Further, it has 12 principles about how to work, for example favouring face-to-face communication, using working software as the primary measure of progress, and building a supportive environment for motivated individuals you trust to get the work done.

The agile manifesto was a reaction to increasingly heavyweight development methods based on waterfall models. Waterfall models are predictive in that they divide planning, building, testing, and deployment into phases separated by stage gates. Agile methods, such as XP (extreme programming) and Scrum, are instead *adaptive* and iterative. In scrum, at the end of each 1–4-week sprint, "potentially releasable increments" are delivered (Schwaber & Sutherland, 2017). The three core roles in Scrum are the product owner, who represents the stakeholders, the development team, and the scrum master, who is a facilitator of the Scrum method. The scrum master is accountable for removing impediments to the teams' ability and buffering the team from distracting influences (Schwaber & Sutherland, 2017). For more information about the specifics of Scrum, I encourage you to visit the Scrum Alliance website, www.scrumalliance.org

APPENDIX B

B.1. Mapping of codes to general themes of main results

1st order codes	2nd order code	General theme
• Delivers on mission • Has process of continuous improvement • Learns • Challenge themselves	Team is productive Team is continuously improving	**Goal outcomes**
• Shows sense of ownership • "Not married to solutions" • Action bias • Inspect • Use data • Communicate, talk more • Respectful interactions • Trust • Zero friction • Feel better • Fun	Sense of ownership Focus on value over form Bias toward action, trying, experiment rather than analyse Communication frequent and open, everyone participates Atmosphere is friendly, fun, not stressed	**Team states** indicating adaptive dynamics generating "goal outcomes"
• Encourage to think differently • Consider the consequences of actions • Awareness of context	(a) Increase sensitivity to context	**Practising enabling leadership**

(Continued)

1st order codes	2nd order code	General theme
• Encourage empathy: Perspective taking, understanding others point of view • Interface PO-TL-AC (leader triad around teams) • Shared-leadership, interchangeability • Interface PO • Interface CL • Interface other leaders	b) Boosting and supporting other leaders	
• Model • Action bias • Try it: "when in doubt make a decision" • Experiential learning • Share work, e.g. pair programming, knowledge exchange • Rules of action • Ways of interacting • Teach • Focus on value and effects	c) Establish and remind people of simple principles	
• Frame • Adapt stance, situational sensitivity • Observe • Mirror • Monitor, when to engage • Observing what • Be with team physically, spend time	d) Observing group dynamics	**Practising enabling leadership (contd)**
• Feedback • Make suggestions • Question • Question leads to clarity • Concretization • Surface discrepancies, tensions • Surfacing leads to change • Conflicting constraints • Transparency, make things more visible and understandable	e) Surfacing conflict	
• Visualize • Separation of participating and structuring • Structure • Holding space • Facilitation techniques • Metacognition • Team self-reflects • Directing dynamic directly • Team take turns talking • Heterogeneity, all voices heard	f) Facilitate and encourage constructive dialogue	