

# Issues, Responsibilities and Identities: A Distributed Leadership Perspective on Biotechnology R&D Management

Monica Lindgren and Johann Packendorff

The aim of the research reported here is to contribute to the ongoing development of R&D project leadership studies by applying a distributed leadership perspective in the analysis of a product development project in a small biotechnology venture. A distributed leadership perspective implies that leadership is studied as a process of social interaction, involving several individuals who continuously construct leadership activities together. From a case study of a bio-tech venture, we conclude that leadership work in R&D projects implies construction of issues, responsibilities and identities. That is, what people do – seen from this perspective – when performing leadership activities in this project is that they gradually move the project and the organization forward by processing issues, resolving ambiguities concerning responsibility, and develop their understandings on the identity bases involved.

## Introduction

In this paper, we aim to contribute to the ongoing development of R&D project leadership studies by outlining and using a distributed leadership perspective in the analysis of a product development project in a small biotechnology venture. A distributed leadership perspective implies that leadership is studied as processes of social interaction, involving several individuals who continuously construct leadership activities together (see Gronn, 2002; Parry & Bryman, 2006). These processes of interaction are neither egalitarian nor harmonic by necessity as the actors may have conflicting interests and draw upon different power bases – but they are still processes in which direction, co-orientation and actors' action spaces are collectively constructed (Crevani, Lindgren & Packendorff, 2010). By applying this perspective we intend to develop new conceptual understandings of leadership processes in R&D projects. Such understandings are theoretically relevant as they may add new aspects to the scholarly study of R&D project management, but also empirically relevant as they may result in much needed empirically grounded accounts

of the actualities of R&D project leadership work.

### *Project Leadership Research – the Legacy of Individualism*

R&D project leadership is a central matter in contemporary organizations in the sense that it plays an important role in bringing new products and services to the market. Through well-functioning R&D project leadership, team formation and team collaboration may be enhanced, project planning and monitoring problems may be alleviated, and the creative resolution of advanced technological problems may be stimulated. At the same time, our theoretical understandings of this matter are still limited and in need of increased scholarly attention. In project research, in R&D management research and in general leadership research, the leadership function in R&D projects remains a sparsely studied phenomenon in need of further exploration from new theoretical perspectives (Kangis & Lee-Kelley, 2000; Cooper, 2005; Rickards & Moger, 2006; Hemlin, 2009; Lindgren & Packendorff, 2009). Most research has focused on the extraction of success factors at the level of the individual

project manager (Lindgren & Packendorff, 2009), which is also the main focus of most general leadership research (see Carroll, Levy & Richmond, 2008). Important streams in the R&D project leader literature include the application of situational/contingency approaches (see Kangis & Lee-Kelley, 2000) and the widespread notions of transformational and charismatic leadership (see Ollila, 2000; Berson & Linton, 2005).

While R&D project leadership research is thus rich in theoretical perspectives, it is still focused on the individual project leader/manager. Extant research builds on the basic notion that the phenomenon of project leadership is always practised by the formally assigned project manager, and that project leadership research should investigate what characteristics and competencies that manager needs to have in order to contribute to project success (see Turner & Müller, 2005). In this article, we instead depart from a basic notion of leadership as a social practice, and that research should inquire into how leadership is practised in R&D project settings.

#### *Towards an Alternative Research Agenda: Distributed Leadership*

While clearly appreciating the merits of the existing body of literature on R&D project leadership, we also find a need to employ new research perspectives in order to widen the knowledge on how project leadership is practised and why project processes unfold as they do (see also Rickards & Moger, 2006). A starting point for this is the emerging debate on the practical advantages of participative leadership, where the formal leader invites followers to participate in leadership activities, and shared leadership, where leadership duties are spread across two or more persons in suitable situations (Lawler, Galbraith & O'Toole, 2002; Pearce & Sims, 2002; Spillane, 2006; Yukl, 2008).

In this literature, the advantages of such leadership practices are claimed at several levels of analysis (Pearce & Sims, 2002; Lindgren & Packendorff, 2009). On an individual level, the rejection of unitary command and individualism would imply better possibilities for leaders to cope with their workload and make better informed decisions. It would also be better suited to the expectations from younger generations of non-hierarchical work forms and could also be a way to increase the legitimacy of leadership in society in an era of corporate scandals and power abuse. On an organizational level, there are several claimed advantages of participative and shared leadership perspectives, such as broadened com-

petence basis, improved communication, increased internal legitimacy, less vulnerable leadership functions and better opportunities for on-the-job leadership development.

Our main concern with these literatures is not the practical advice as such, but the lack of basic re-conceptualization of leadership in their founding assumptions. While these literatures point out interesting practical arrangements, they still sustain the leader/follower distinction as a subject-object relation, they still view leadership forms as practical solutions in specific situations rather than as new perspectives on the phenomenon of leadership (Crevani, Lindgren & Packendorff, 2010). Thus, the potential of these literatures to inform any fundamental change in the theory and practice of R&D project leadership remains limited. If we want to take the notion of distributed leadership practices beyond the leader-centred tradition, we must thus also challenge our deeply rooted tendency to make the abstract notion of leadership concrete in the guise of an individual manager (Wood, 2005) who lead hoards of followers towards the achievement of shared goals (Drath et al., 2008). Instead we must try to redefine leadership into terms of processes and practices organized by people in interaction, and study that interaction without becoming preoccupied with what individual formal leaders do and think. Like Parry and Bryman (2006: 455) we want to base our research in:

an alternative perspective that emphasizes the importance of recognizing the need for leadership to be viewed as a widely dispersed activity which is not necessarily lodged in formally designated leaders.

Our alternative research agenda is thus instead based on a perspective on R&D project leadership as a process of social interaction involving several individuals and a need to understand how project leadership is practised in everyday organizational life – *distributed R&D project leadership*. We thus depart from the perspective that leadership is a collective phenomenon, by default distributed on the actors involved – not an individual phenomenon emanating from a single manager. Such an understanding has the potential to inform both researchers and practitioners on the actualities of leadership work, and they can also be a source of new and different prescriptions for practical leadership.

We suggest that such a research agenda is developed along with the critique formulated by Lindgren and Packendorff (2009), implying three theoretical re-positionings. First, project leadership should be studied as activities emerging in the social interaction in the project team, acknowledging the leadership work

done also by other team members and opening up empirical inquiry for a multitude of potentially differing views of the same processes (Raelin, 2005; Segercrantz, 2009). Second, leadership should be studied in terms of practices, i.e., the everyday activities that constitute project leadership (Cicmil et al., 2006; Blomquist et al., 2010). It implies acknowledging mundane, collective and ambiguous aspects of leadership, instead of the current preoccupation with heroic actions and linear relationships between intentions, interventions and performance. Third, focus should be on interaction processes as such rather than on in which formal organizational unit they unfold (Blomquist et al., 2010). This implies an ontological and epistemological view of projects as constantly 'becoming' in social interaction, where scripts, standards and formal organizational boundaries are treated as aspects of organizing rather than as given facts (Segercrantz, 2009).

With such a re-formulated research agenda, new and different research questions relating to R&D project leadership can be identified. How is leadership practised in everyday work? What are the instances and modes of leadership interactions? What are the contents, activities and outcomes of leadership practices and interactions? How are leadership practices and interactions linked to creativity, innovation, entrepreneurship and performance improvement? How are societal notions of leadership – traditional and non-traditional – brought into practices and interactions in the local/cultural context? In the answers to these and other research questions we may find developed understandings on leadership work and its relations to organizational development and change.

### *Aim and Structure of the Paper*

The aim of this paper is to develop a distributed leadership perspective on project management and to suggest theoretical and practical implications of such a perspective. In the next section, we provide discussion of the distributed leadership perspective, including conceptual aspects, basic scientific assumptions and fieldwork methods. Thereafter, the perspective will be put to use in a case study of a small biotech venture and its main product development project. In the case study, we depart from the above general research questions in order to identify central themes and outcomes in their leadership interactions. The paper ends by a discussion on theoretical and practical consequences of a distributed leadership perspective in R&D project research.

## **Towards a Distributed Leadership Perspective on R&D Project Practices**

As mentioned in the introductory section of this paper, there has been an emerging debate in general leadership research on what has been called distributed leadership (see Gronn, 2002; Parry & Bryman, 2006). Metaphorically, the perspective emphasizes collaboration and relational processes of co-construction as the bases of leadership, pointing at the relational, collectivist and non-authoritarian nature of leadership practices in contemporary organizations (Raelin, 2005; Bolden & Gosling, 2006; Uhl-Bien, 2006). As stated in the introduction, the perspective goes beyond established prescriptive leader-centered perspectives such as participative or shared leadership. In this section, we will develop the distributed leadership perspective further by outlining its main theoretical assumptions and the identification of leadership practices and interactions in fieldwork.

In the general leadership literature we find a number of theoretical ingredients of such a perspective. Gronn (2002) discusses this in terms of level of analysis, i.e., that the level of analysis should be the exercised leadership rather than the single individual leader. Reicher, Haslam and Hopkins (2005) claim that traditional leadership models contribute to the institutionalization of a dualism of identity between leaders and followers in society – a dualism that may be challenged through studies of leadership identity construction and empirical work on practices rather than competencies. A distributed leadership perspective on project work should thus not only focus on observable interactive practices, but also on how competing and conflicting discourses on project work and leadership appear in project settings, including the importance of 'project leadership' as a basis for identity work among R&D project professionals (Hallin & Karrbom-Gustavsson, 2010). A social constructionist research agenda, where project leadership and project leader identities are seen as constantly constructed and re-constructed in project work, should thus be central to advance both project leadership theory and project leadership practices in the direction of distributed leadership (see Carroll, Levy & Richmond, 2008; Raelin, 2011). Following this reasoning, the main assumptions of a distributed leadership approach to R&D project studies are stated in Table 1.

Finally, one may of course ask what empirical circumstances could form the basis for a developed understanding of R&D project

Table 1. Basic Assumptions of a Distributed Leadership Approach to Project Leadership Research (Adapted from Lindgren and Packendorff, 2009)

Ontology/Epistemology/ Axiology	Projects and leadership as socially constructed phenomena. Project leadership theory as based in understanding of leadership practices. Projects and leadership as potentially both good and evil, both moral and immoral.
Aim of research	Create understandings of leadership processes in project settings as co-constructed by several individuals in interaction.
Level of analysis	Distributed leadership, i.e., social interaction around issues related to governance, coordination, policy making and change in projects – manifest in the construction of direction, co-orientation and action space.
Theoretical foundation	Constructionist and relational leadership approaches (e.g., shared, dispersed, collaborative and distributed leadership). The leader-follower dichotomy is dissolved. Practice orientation. Project leadership theory is seen as a performative input into the life worlds of practitioners.
Project leadership	Processes of social interaction where people construct direction, co-orientation and action space in projects.
Project leader	Everybody has potential to be part of constructions of project leadership activities, although not necessarily either in an egalitarian or harmonic way. Formal leaders are (powerful) co-constructors of leadership activities in everyday interactions but leadership can be constructed without them being present.
Empirical settings	Projects, project portfolios, project management offices, project-based organizations (labelled as such by inter-actors).
Research methodology	Participative observation, in-depth interviews, stories, ethnographies, narrative analysis, deconstruction, discourse analysis.

leadership from a distributed leadership perspective. If we are to study leadership in terms of processes, practices and social interactions – instead of in terms of individuals, competencies and fixed organizational units – what will we focus our empirical fieldwork on?

Gronn (2002) proposes the study of ‘concerative actions’ such as spontaneous collaboration patterns, intuitive understandings that emerge between colleagues, and institutional arrangements supporting self-managed teams and other formal practices. Drath et al. (2008) claim the need for an ‘integrative ontology’ of leadership, in which the three basic concrete entities of traditional leadership research (leaders, followers and shared goals) need to be replaced by an alternative ‘DAC ontology’ where empirical inquiry is focused on the outcomes of leadership – Direction, Alignment and Commitment. Crevani, Lindgren and Packendorff (2010) and Lindgren, Packendorff and Tham (2011) appreciate both these suggestions, although remarking that notions of ‘out-

comes’ are problematic given that leadership is analysed in terms of interactions and processes – maintaining that the DAC ontology tends to focus on converging processes of leadership, thereby emphasizing the common and the collective. While preserving the concept of *direction* as a core feature of leadership processes (construction of organizational paths, overall goals, aims and mission), they instead propose the concepts of *co-orientation* (enhanced understandings of possibly diverging arguments, interpretations and decisions of all involved parties) and *action-spacing* (construction of possibilities, potentials, opportunities and limitations for individual and collective action within the local-cultural organizational context; see Holmer-Nadesan, 1996).

In line with the above argumentation we will therefore focus our empirical case study on *interactions in which direction, co-orientation and action space is constructed*. This was carried out among actors simultaneously handling a



number of R&D projects in their job to develop a small biotech venture into a profitable firm. Members of the organization and the project teams were asked to tell their stories on the project processes and how they had been managed, and these narratives were then analysed with the intent of extracting empirical themes. These themes were then used as the basis for conceptualizing distributed leadership in a R&D project setting. As the empirical study is limited to one project team in one small company, it should be read as an exploratory study applying a distributed leadership perspective to such settings. Further case studies on other R&D project settings are needed if stronger claims of validity are to be made.

## Fieldwork Methodology

The study is based on recurrent interviews, participant observation and documentation, here with a focus on the narratives articulated by the actors (see Ingelgård et al., 2002). Since we view leadership processes as collective interaction, it is also important to speak to several of the inter-actors. The interviewees were asked to speak openly about the development of their operations, how they had worked together, what problems they had experienced (Cooper, 2005). We thus collected stories about traditional leadership activities, such as decision making, definition of areas of responsibility, management accounting and control, accountability, strategy work, formal and informal influence, etc. – but with the focus on these activities as organized collectively rather than emanating from the CEO, as instances of production of direction, co-orientation and action space.

The empirical setting was a small, entrepreneurial biotech company – here called BioCorp – that is publicly listed on one of the small electronic stock markets in Sweden. It was founded by the current CEO in 2000 in order to exploit new knowledge on infection mechanisms that had been developed at the nearby Celltown University. After an initial public offering (IPO) in 2003, BioCorp received additional funding and could start to recruit the people necessary to manage the development projects and the relations with a number of collaborating universities. Since then, the company has been involved in preclinical development work and preparations for Phase I testing, often in collaboration with university and industry partners.

BioCorp now has a small headquarters in Celltown where the CEO and the three main managers (a research manager, a product

development manager and an administrative manager) have their offices. In addition, BioCorp also has a laboratory temporarily located at the university campus business incubator. The laboratory is the main responsibility of the research manager, but the daily work there is led by a laboratory manager. In this paper, we draw on narratives of the project management team members in BioCorp (see Table 2), who were all interviewed as co-constructors of leadership activities. The interviewees were selected as they were all involved in the management of the project at the same time as they were all members of BioCorp's management team.

Interviews were carried out at locations chosen by the interviewees by one or both of the authors. They were carried out in a semi-structured manner in order to cover different aspects of the R&D work while maintaining openness to emerging themes and spontaneous reflections. All interviews lasted for about two hours and were tape-recorded and transcribed. The transcripts were then subject to a manual content analysis where the material was divided across the set of interviewees into micro-stories and critical incidents as exhibits of interactions in which direction, co-orientation and action space was constructed (Lincoln & Guba, 1985). Each such story/incident was then further analysed in order to identify the underlying mode and subject of interaction. From this analysis, a number of themes were formulated, such as construction of projects, processing of common organizational matters, meeting habits, continuous decision making, positions and positioning, boundary work and networking, and identification with scientific and managerial professions. The themes were then further condensed into three main themes that capture most of the distributed leadership work studied: construction of issues, construction of areas of responsibility, and construction of professional identities.

## Narrative Themes in the Project

Below we will describe the three main themes in some detail and provide some illustrative quotes from the narratives.

### *Issue Processing: Decision Making and Problem Solving*

The daily conversations between the members of the company constitute leadership activities and processes – and the construction of shared notions of the company as such. At the core of

Table 2. List of Interviewed Actors in BioCorp. All Individuals, Organizations and Geographical Locations have been Renamed to Preserve Anonymity

<b>People interviewed and cited in this paper</b>	
Stephen (male, 67 yrs)	CEO, co-founder and one of the major shareholders. Long experience from the biotech industry, both nationally and internationally, both in managerial and research positions. BioCorp is his last professional project before retirement.
Pat (female, 42 yrs)	Research Manager and project manager. Holds a PhD in molecular biology from Celltown University, BioCorp employee for three years after spending her entire career in academic research.
Matthew (male, 36 yrs)	Product Development Manager and project manager. Holds a BSc in molecular biology from Celltown University, 15 years of managerial experience from the life science industry, especially within clinical testing. Had previous work experience in one of Stephen's companies. BioCorp employee for one year.
Barbara (female, 56 yrs)	Administrative Manager. Background in engineering, worked in administration in one of Stephen's previous ventures before becoming a BioCorp employee four years ago.
Claire (female, 30 yrs)	Laboratory Manager. Holds a PhD in molecular biology from Celltown University. BioCorp employee for three years.
<b>Associated actors often mentioned in the narratives</b>	
Howard (male, 62 yrs)	Professor of molecular biology at Celltown University, co-founder and large shareholder in BioCorp, leader of the research group that discovered the infection mechanism and supervisor of Pat's and Claire's PhD theses.
Mike (male, 42 yrs)	Chief chemist at BioCorp and part-time researcher in organic chemistry at Celltown University.

these discussions, we find the ongoing product development projects – the main concern of all BioCorp employees:

We have a project plan and a project goal, which is to find something that does not yet exist. We always ask ourselves if we are creative enough to find the final substance, if we have the right selection and test methods. We have figured out how to work, we have developed new routines. We know how to work as a company and a team. (Pat)

The daily work in the projects is currently focused on substance testing, which requires continuous decision making regarding priority setting. Actors are thus in a constant collective process of defining and deciding upon in which direction to take the upcoming testing work.

We decide most things about our daily work here at the laboratory. We all know the main priorities, within them we decide our-

selves. Sometimes we have some time left and can test some wild ideas. Since we are all in the same project we always talk about everything we do. We have research meetings once a month with Pat and Matthew, where we also invite our consultants Howard and Mike. We present our views from the laboratory and are given feedback. Occasionally, I also sit down with Pat, Matthew and Stephen to discuss prioritizations. (Claire)

There is thus always decision making and meetings going on, formally and informally. Even the CEO of BioCorp shares this view of a never-ending collective decision making, arguing that it has to be that way. He often chooses not to exercise his formal individual influence as CEO and major shareholder in order to keep an action space open for defining, processing and closing down organizational issues.

From my point of view, we are a team. I do not feel like being in a position of power, but others do, of course. I feel that we have open discussions and that I delegate almost everything to them, and they often come to me spontaneously with suggestions and reports. We have a lot of meetings and a long-term target which they are all supposed to know: we shall start clinical testing during the next year, which is not a secret to anyone. How we are supposed to achieve that target, well, that is something we always discuss. Everybody gives input to that discussion and I am open to anything. (Stephen)

Behind the collective decision making ideals, there is an academic ideal where good ideas and good arguments are always listened to, even in a hierarchical organizational form. Co-orientation around issues and the evolving set of organizational issues thus happen in a local/cultural setting where professional autonomy and respectful team interaction are core values.

We are all specialists in our respective fields. You take care of your own matters, the rest we discuss. Some of us are sceptical, we even have an outright pessimist, but that is needed in order to be able to have balanced discussions. To be able to see things both ways is important, so that you do not exaggerate the importance of a set of test data in either direction. So it is very important that you can work together as a team! (Claire)

Besides the ongoing product development projects and the continuous discussions and decision making related to project progress in terms of substance testing and interaction with relevant authorities, there are also other issues involved in the construction of BioCorp as a company. For example, all employees had very strong opinions on the future need to merge the administrative office and the laboratory into one physical location in order to improve internal communication and daily problem solving.

### *Construction of Rules and Areas of Responsibility*

Another major narrative theme among BioCorp employees is the constant search for organizational order and clarity. The organization is perceived as changing along with technological progress in the development projects, implying constant ambiguity on task content and task distribution. There are both confusion and discontent concerning this matter:

I am not sure if we actually have a formal management team. I meet regularly with Pat and Stephen, but not in a formal sense with set dates and so on, rather when someone feels that there is a need to meet. We also have an extended management team, involving Claire and Mike at the lab. That's the way I look at it. Someone else might have a different view of if we have a formal management team or not. One of the others may give you a different answer. (Matthew)

We have formed a management team. It is me, Claire, Matthew, Stephen and Barbara – almost the whole company (laugh). Mike is part of it also. We formed the team almost a year ago, I think, but we have probably not had any meetings since then, a real planning meeting, I mean. It would be good if it continued as intended. (Pat)

One emerging issue in the ongoing daily R&D work is how to draw the line between the research manager and the product development manager. In the narratives, there are several examples of this issue being retold as a constant and unsolved problem, as a silent cry for formalization. While no one can identify any practical incidents following the lack of administrative rigour, most interviewees are of the opinion that the CEO should issue standing orders where areas of responsibility are concerned, thereby individually providing a firm basis of direction and co-orientation:

Seen as a whole, I think the company would benefit from a more precise definition of areas of responsibility. I assume that Stephen wants us to bring this up ourselves, but in our current situation I think we need to sit down and sort out who is responsible for what and who can make decisions about what. I have always appreciated our open and tolerant climate, you can always propose anything, everything can be discussed. In that way, Stephen is a very good leader. But some clear demarcations of what each employee is supposed to do would definitely be needed. (Pat)

The CEO, on his hand, rejects this expectation and refers the issue back to the various meetings for collective decision making. From his perspective (based in his negative experiences from large bureaucratic pharmaceutical companies), perceived action space should always be open to change and re-definition. This also implies a trust-based notion of accountability – the team members are trusted to co-construct the everyday organizational routines in a sensible and responsible manner within the bounds of the long-term goal.

There are no formal work orders; the research manager can formulate such orders if she wants to. Some people in BioCorp want a work description, I have not written any. The task is to start Phase I testing during the next year, that's what it is all about. We do have meetings, of course. We had so many as nine meetings with the board of directors last year, but that was because we raised new capital and got a new main owner. There are management team meetings every week, but I am not part of them. I have daily meetings with the administrative manager and then bigger meetings every second week. You need formal meetings. (Stephen)

### *Co-Construction of Professional Identities*

A third theme in the narratives on the construction of direction, co-orientation and action space is the issue of professional identity – i.e., what images the employees hold of themselves and how those images are related to expectations on how a commercial company should work in order to reach its goals. In BioCorp, leadership activities related to this are (partly) narratively constructed in terms of co-orientation involving two professional identity bases: the academic scientist and the business professional. Identities are in the making, through articulation, discussion and confrontation between professional value bases.

Pat and Claire have left academic life to work with corporate R&D. For them it is a big mental adjustment, as a researcher you always expand your horizons and go for the most interesting and promising ideas. In a company like this one, we have decided what we are going to achieve. Everything we do here is done with that final aim in mind, and we continue in that direction until we are told to do something else. (Matthew)

I feel very strongly about this company. We are on our way towards a fantastic product that will save the world. It is quite an idealistic thing for me. Stephen tries to raise me to become a businesswoman, but my ideals are still there. I know that we are here to make money, but it is important that we develop products that are important. It is not a substance that will prevent my hair from turning grey, it is a substance intended to save lives. But I want to earn money; I want the company to earn money. (Pat)

As the main focus in the daily work is still in research rather than in clinical testing, there seems to be a tendency for the employees to refer back to their academic background rather

than to their current positions in the pharmaceutical industry. For some people in BioCorp, leadership itself is becoming an emerging professional identity as the organization grows and new managerial posts are created. In handling the insecurity about leadership work, they construct action space by drawing upon rather vague popular notions of leadership work.

It's quite hard to change clothes from scientist to leader. I would like to know more about leadership. I learned to discuss things in academia, but I also feel that it's in my personality to make the final decision. But I don't know about conflict management. It was always the professor's job to solve conflicts, and as a researcher I could always just tell him to go to hell, it didn't matter. You must be the one who stays focused, moves things on, and avoids getting stuck. And leading personnel, I think about my lack of knowledge there. I have coached junior sports, but that's all. If you need to fire someone . . . see, you cannot tell who is a good leader until there is a crisis. The bad leaders I have seen so far have always been people that could not stand up and fight when facing a problem. (Pat)

As with academic and pharmaceutical professions, leadership can thus be constructed as a set of skills and behaviours that you must acquire in order to be successful. In that sense, leadership theory and practice constitutes a performative system of norms that is internalized by leadership practitioners who then maintain current leader-centric ideals notwithstanding the collectivist ideals by which the daily operations are handled.

### **Distributed Leadership Practices: Construction of Issues, Responsibilities and Identities**

Our interpretation of the empirical themes in the previous section is that a distributed leadership perspective on R&D project work implies an emphasis on the construction of issues, responsibilities and identities. That is, what people do – seen from this perspective – when performing leadership activities in this project is that they gradually move the project and the organization forward by processing issues, sorting out mutual ambiguities concerning responsibility, and develop their understandings on involved identity bases such as 'scientist', 'business person' and 'leader'. In the following, we will make these notions subject to a closer analysis in an attempt towards a conceptualization of



distributed leadership in R&D projects, using the theoretical framework of direction, co-orientation and action spacing as basis. The discussion is summarized in Table 3.

There are constantly several *issues* being processed in BioCorp, and actors spend much interaction time in defining what these issues are actually about and why they unfold as they do. Issue processing is an integral part of everyday leadership interactions also outside R&D project settings, but it is usually acknowledged at higher managerial levels (see Gioia & Thomas, 1996; Brown & Eisenhardt, 1997). The issues are constructed not only as areas of responsibility, but also in terms of existence, content, participants and rules – thereby forming building-blocks in the continued construction of organizational direction (Crevani, Lindgren & Packendorff, 2010). Among issues in BioCorp we find decision processes, past and future events, strategic goals, common concerns such as the geographical divide of the company, and various ongoing or planned development projects. Most issues are intimately connected to each other and are combined and re-combined with each other in a process of co-orientation in the continuous organizing of the projects. When formal decisions are indeed made by formal leaders, such as starting up a new project or changing the testing priorities in the laboratory, they are preceded by long processes of informal collective co-orientation through which the issues were raised, defined, discussed and established as commonly held facts.

Closely related to the social interaction around strategic issues are the ongoing discussions on the practical implications of the formal organization – interactions on the notion of *areas of responsibility*. Much time in meetings and different managerial groups is spent discussing who is to do what, who is responsible for what, and who should make such decisions. While tensions and ambiguities tend to appear in most organizational settings where formal arrangements are concerned (Brown & Eisenhardt, 1997), they should be especially important to understand in an R&D project setting such as BioCorp due to the emerging nature of the project and the lack of stable structural arrangements in a small hi-tech venture. Even when such arrangements seem quite stable at a formal level, they may be constantly negotiated in practice due to changes in interest, ability or availability among the actors, or due to requests from external actors (Brown & Eisenhardt, 1997; Ingelgård et al., 2002; Sölvell, 2008). Through these discussions, aiming at co-orientation on how to handle day-to-day matters in the project, direction is

constructed and spaces of action opened and closed.

An important part of leadership activities in BioCorp is also the ongoing *identity construction* processes of the actors, processes that imply changes in the perceived possibilities for current and future actions (see Holmer-Nadesan, 1996). Identity construction processes are based both in the actors' personal and professional backgrounds, the organizational context, and in the ongoing reflection that takes place as they travel through life (Lindgren & Wåhlin, 2001; Segercrantz, 2009). It is constructed as others and of otherness in relation to self, such as the demarcations against both university colleagues and pharmaceutical multinationals made by the product developers in BioCorp as they navigate between their former identities as university scientists, the new expectations on being business-minded and product-oriented, and the emerging organizational identity of a successful hi-tech venture. Identities are thus always in the making, not least during experienced discontinuities such as intense periods in the projects or radical changes in the governance structures of the company.

Since the very concept of leadership constitutes an important performative discourse in business life, one part of the leadership construction processes in BioCorp is also the construction of the notion of leadership itself. While the CEO has a long history of managerial positions behind him, the other managers are new to the concept and explicitly seek to improve their abilities as leaders. The general leadership discourse becomes the source of performative ideals (Bresnen, 1995; Alvesson & Sveningsson, 2003), from which BioCorp managers deviate but at the same time strive towards – thereby both reinforcing Stephen's masculine patriarchy and allowing the equality of modern knowledge-intensive firms at the same time.

## Discussion

In this paper we set out to develop a distributed leadership perspective on R&D project management and to suggest theoretical and practical implications of such a perspective. We suggested that the perspective would imply the following re-positionings in relation to the main stream of current R&D leadership research: (1) from a focus on individual leaders to a focus on leadership processes; (2) from a focus on competencies to a focus on practices; and (3) from a focus on the project unit to a focus on situated social interaction. In this concluding section, we will briefly outline

Table 3. *Distributed Leadership Practices in BioCorp*

	<b>Issue processing: Decision making and problem solving</b>	<b>Construction of rules and areas of responsibility</b>	<b>Co-construction of professional identities</b>
<i>Direction:</i> Construction of organizational paths, overall goals, aims and mission.	<i>Direction through issue set processing.</i> Processing and distinguishing issues and issue sets. Identifying, connecting, combining, discarding issues. Short-term vs. long-term issues.	<i>Direction through task distribution.</i> Task distribution among actors. Opening/closing/discarding tasks. Assigning/removing task responsibilities.	<i>Direction through identity work.</i> Linking organizational and individual transitions. Shifting emphasis between different identity bases.
<i>Co-orientation:</i> Enhanced understandings of possibly diverging arguments, interpretations and decisions of all involved parties.	<i>Co-orientation through issue handling.</i> Defining and redefining issues. Decision making processes. Informal day-to-day interactions.	<i>Co-orientation through handling task ambiguities.</i> Meetings and sorting out ambiguities on need for, participants of and content of meetings. Assuming and resisting responsibilities. Formalization work.	<i>Co-orientation through professional value articulation.</i> Value discussions, value conflicts. Socialization of newcomers, re-socialization of old-timers. Distancing to some value bases, embracing others.
<i>Action-spacing:</i> Construction of possibilities, potentials, opportunities and limitations for individual and collective action within the local-cultural organizational context.	<i>Action-spacing through issue infusion.</i> Problem handling as issues immerse into the organization. Closing down problems – removing action space. Opening up problems – creating action space.	<i>Action-spacing through responsibility definition work.</i> Closing/opening action areas referring to areas of responsibility. Construction of trust, accountability and need for monitoring and control. Construction of the meaning of responsibility, trust and accountability in the local-cultural context.	<i>Action-spacing through linking identity and values.</i> Constructing identity-related action space – what can be said and done by different actors. Construction of reasonable or unreasonable views of self and others. Identification and dis-identification with specific issues or responsibilities.

theoretical and practical consequences of these re-positionings, based on the case study of BioCorp.

When re-focusing from individual leaders to leadership processes, we are able to discern far wider social interactions in which project leadership is constructed. In the BioCorp project it appears that several individuals, both inside and outside the company, involve themselves in the ongoing construction of project direction. Instead of viewing, for example, changed testing priorities, agreements with inspection authorities or the division of duties at the laboratory as formal decisions made by the project leader, we are enabled to acknowledge the far more complex interactions leading up to these decisions in terms of leadership (see Ingelgård et al., 2002; Segercrantz, 2009). The daily processing of ambiguities come into focus instead of formal decision making, which is often the outcome of such processing rather than the start of it.

Likewise, re-focusing project leadership research from leadership competencies to leadership practices implies new understandings of R&D project leadership as a practical and empirical phenomenon. Instead of focusing the analysis on what attributes and characteristics formal managers bring into the project interactions, focus is placed on the practices unfolding as people interact based on the shared notion of a R&D project. As main themes in these practices we have identified the ongoing construction of issues, responsibilities and identities. Through these practices, the involved actors shape the overall direction of the projects and the company as a whole (see Cooper, 2005) while they try to resolve tensions and ambiguities. Instead of viewing organizational tensions and ambiguities as detrimental for mutual learning and development (Ingelgård et al., 2002), the distributed leadership perspective enables us to see them as integral parts of leadership interactions where technology and organization is co-constructed (see also Brown & Eisenhardt, 1997).

When going beyond the formally defined project as unit of analysis, we are able to see that project leadership activities also involve actors that would elsewhere be seen as more or less external stakeholders. The project – or any other formal organizational unit for that matter – is important to actors in the sense that they are boundary constructs that contribute to a desired sense of order and clarity, and that is also the way we as researchers should analyse them (Lamont & Molnár, 2002). That means that formally defined organizational boundaries are important to understand as constantly being co-constructed by actors, but

that empirical fieldwork and analysis on, for example, leadership or organizing processes should not be confined to these very boundaries. Again, the formally designated project leader may be a part of leadership work 'external' to the project, just as 'external' actors may be a part of project leadership activities.

The ongoing social construction of issues, responsibilities and identities also tends to draw upon performative conceptual notions of phenomena such as 'projects' and 'leadership'. In both these cases, the use of these concepts implies that long-lasting traditions and expectations are brought into daily work by means of labelling (see Cicmil et al., 2009). The name, label or metaphor that is used for a certain phenomenon invokes a set of assumptions and social constructs through which situations and expectations are interpreted and defined. When labelling a development process 'a project', the whole tradition of project management is brought into the situation, leading to expectations and actions emphasizing rational planning, deadlines, a project manager function and perhaps also the deployment of governance structures such as Project Management Offices (Pellegrinelli, 2010). Likewise, when using terms such as 'leader' and 'leadership', institutionalized expectations upon the roles and behaviours of both the assigned managers and their subordinates are immediately invoked (Bresnen, 1995; Alvesson & Sveningsson, 2003). The importance of labelling and the social construction of concepts and metaphors for understanding how tensions and ambiguities are resolved in R&D settings should not be neglected.

## Conclusion

The theoretical contribution of the proposed distributed leadership perspective on R&D project leadership is that it enables us to recognize leadership work irrespective of where and by whom it is co-constructed, and to analyse leadership as situated in a local cultural setting. In contrast to individualized, context-free conceptions of heroic leaders who may bring their competencies into any suitable place and create successful projects, the proposed perspective leads us to discern a multitude of leadership practices co-constructed by culturally situated actors who interact around organizational issues, formal responsibilities and identity ambiguities. Instead of making the abstract phenomenon of 'leadership' concrete into an individual leader (Wood, 2005), we can instead analyse 'leadership' in terms of processes of construction of direction, co-orientation and action-space (Crevani,

Lindgren & Packendorff, 2010). In the case of BioCorp's R&D projects, we could identify a *leadership culture* evolving around the continuous processing of issues, responsibilities and identities, a culture in which both convergence on long-term targets and divergence between different interpretations of formal structure are important aspects of everyday organizing. As noted above, the specific context of leadership interactions studied here – the small BioCorp project – should be complemented by future research looking into other R&D project settings, e.g., projects in larger organizations (Ingelgård et al., 2002), other areas of technology (Segercrantz, 2009), or a variety of project characteristics and environments (Kangis & Lee-Kelley, 2000).

In practical terms, the proposed perspective has the potential to become a source of new leadership norms and practices, in line with the emerging interest in shared leadership forms in project-based work (Lindgren & Packendorff, 2009). For example, it will contribute to the rejection of dominating heroic conceptions of project leadership where success is ultimately dependent upon self-sacrificing individuals (Lindgren & Packendorff, 2006), instead emphasizing the importance of well-functioning team interaction in the processing of both technological and organizational matters (Hemlin, 2009). It will also induce some healthy scepticism concerning the likelihood of rational control of projects through the insertion of allegedly competent and certified individuals into project leadership positions (Cicmil et al., 2006, 2009; Segercrantz, 2009), instead emphasizing leadership as a local cultural construct 'in becoming' that precedes any project episode and continues to evolve afterwards. It will also lead to an emphasis of all team members and also 'external' actors as being partly responsible for leading the project (Raelin, 2005). In that sense, an R&D project should be seen as an episode in which a technical result and the organizational setting evolve simultaneously and interdependently through leadership interactions.

A final matter is the link between our proposed distributed leadership perspective and the outcomes of R&D project activities – such as new products and services or enhanced innovative capabilities of organizations. Our single case study does not enable us to determine what patterns of leadership interactions would be most effective, and the aim of the paper was indeed not to draw that kind of conclusion. Still, the distributed leadership perspective and the results from the BioCorp study do relate to earlier research on R&D project management and organizational

change in several ways. For example, the notion of R&D-intensive organizations and hi-tech project work as more or less continuous organizational change processes (in contrast to the classic idea of punctuated equilibrium), and the notion of structural ambiguities as beneficial to innovation (in contrast to ubiquitous project portfolio governance models) resonate well with Brown and Eisenhardt (1997) who find constant organizational change and fuzzy 'semi-structures' to be beneficial to organizational creativity and innovation. What our distributed leadership perspective may contribute in relation to this are insights into how these processes are organized in daily interaction between many actors, rather than orchestrated by individual managers. While Brown and Eisenhardt (1997) describe successful R&D project management practices as invented, created, exported, imported and enacted by single managers moving in and out of different organizational settings, we would instead see these practices as collectively constructed and integral to the continuous co-production of the organization. From a distributed leadership perspective, an enhanced understanding of how innovative projects evolve through constant issue processing, redefinition of formal structure and re-construction of professional identities should be central to an exploration of the relation between leadership work and innovation in future research.

## References

- Alvesson, M. and Sveningsson, H. (2003) Managers Doing Leadership: The Extra-Ordinarization of the Mundane. *Human Relations*, 56, 1435–59.
- Berson, Y. and Linton, J.D. (2005) An Examination of the Relationships between Leadership Style, Quality, and Employee Satisfaction in R&D versus Administrative Environments. *R&D Management*, 35, 51–60.
- Blomquist, T., Hällgren, M., Nilsson, A. and Söderholm, A. (2010) Project-as-Practice: In Search of Project Management Research that Matters. *Project Management Journal*, 41, 5–16.
- Bolden, R. and Gosling, J. (2006) Leadership Competencies: Time to Change the Tune? *Leadership*, 2, 147–63.
- Bresnen, M. (1995) All Things to All People? Perceptions, Attributions, and Constructions of Leadership. *Leadership Quarterly*, 6, 495–513.
- Brown, S.L. and Eisenhardt, K.M. (1997) The Art of Continuous Change: Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations. *Administrative Science Quarterly*, 42, 1–34.
- Carroll, B., Levy, L. and Richmond, D. (2008) Leadership as Practice: Challenging the Competency Paradigm. *Leadership*, 4, 363–79.



- Cicmil, S., Williams, T., Thomas, J. and Hodgson, D. (2006) Rethinking Project Management: Researching the Actuality of Projects. *International Journal of Project Management*, 24, 675–86.
- Cicmil, S., Hodgson, D., Lindgren, M. and Packendorff, J. (2009) Project Management behind the Façade. *Ephemera: Theory and Politics in Organization*, 9, 78–92.
- Cooper, P. (2005) A Study of Innovators' Experience of New Product Innovation in Organizations. *R&D Management*, 35, 525–33.
- Crevani, L., Lindgren, M. and Packendorff, J. (2010) Leadership, Not Leaders: On the Study of Leadership as Practices and Interactions. *Scandinavian Journal of Management*, 26, 77–86.
- Drath, W.H., McCauley, C.D., Palus, C.J., Van Velsor, E., O'Connor, P.M.G. and McGuire, J.B. (2008) Direction, Alignment, Commitment: Towards a More Integrative Ontology of Leadership. *Leadership Quarterly*, 19, 635–53.
- Gioia, D.A. and Thomas, J.B. (1996) Identity, Image, and Issue Interpretation: Sensemaking during Strategic Change in Academia. *Administrative Science Quarterly*, 41, 370–403.
- Gronn, P. (2002) Distributed Leadership as a Unit of Analysis. *Leadership Quarterly*, 13, 423–51.
- Hallin, A. and Karrbom-Gustavsson, T. (2010) Digging Wider and Deeper – Revealing the Hegemony and Symbolic Power of 'Project' Studies and Practice. *International Journal of Project Organisation and Management*, 2, 1–15.
- Hemlin, S. (2009) Creative Knowledge Environments: An Interview Study with Group Members and Group Leaders of University and Industry R&D Groups in Biotechnology. *Creativity and Innovation Management*, 18, 278–85.
- Holmer-Nadesan, M. (1996) Organizational Identity and Space of Action. *Organization Studies*, 17, 49–81.
- Ingelgård, A., Roth, J., Shani, A.B. and Styhre, A. (2002) Dynamic Learning Capability and Actionable Knowledge Creation: Clinical R&D in a Pharmaceutical Company. *The Learning Organization*, 9, 65–77.
- Kangis, P. and Lee-Kelley, L. (2000) Project Leadership in Clinical Research Organizations. *International Journal of Project Management*, 18, 393–401.
- Lamont, M. and Molnár, V. (2002) The Study of Boundaries in the Social Sciences. *Annual Review of Sociology*, 28, 167–95.
- Lawler, E.E. III, Galbraith, J. and O'Toole, J. (2002) When Two (or More) Heads are Better than One: The Promise and Pitfalls of Shared Leadership. *California Management Review*, 44, 65–83.
- Lincoln, Y.S. and Guba, E.G. (1985) *Naturalistic Inquiry*. Sage, Newbury Park, CA.
- Lindgren, M. and Packendorff, J. (2006) What's New in New Forms of Organizing? On the Construction of Gender in Project-Based Work. *Journal of Management Studies*, 43, 841–66.
- Lindgren, M. and Packendorff, J. (2009) Project Leadership Revisited: Towards Distributed Leadership Perspectives in Project Research. *International Journal of Project Organisation and Management*, 1, 285–308.
- Lindgren, M. and Wåhlin, N. (2001) Identity Construction among Boundary-Crossing Individuals. *Scandinavian Journal of Management*, 17, 357–77.
- Lindgren, M., Packendorff, J. and Tham, H. (2011) Relational Dysfunctionality: Leadership Interactions in a Sarbanes-Oxley Act Implementation Project. *European Journal of International Management*, 5, 13–29.
- Ollila, S. (2000) Creativity and Innovativeness through Reflective Project Leadership. *Creativity and Innovation Management*, 9, 195–200.
- Parry, K.W. and Bryman, A. (2006) Leadership in Organizations. In Clegg, S.R., Hardy, C., Lawrence, T.B. and Nord, W.R. (eds.), *The SAGE Handbook of Organization Studies*, 2nd edn. Sage, London.
- Pearce, C.L. and Sims, H.P. Jr. (2002) Vertical versus Shared Leadership as Predictors of the Effectiveness of Change Management Teams. *Group Dynamics: Theory, Research, and Practice*, 6, 172–97.
- Pellegrinelli, S. (2010) What's in a Name? Project or Programme? *International Journal of Project Management*, 29, 232–40.
- Raelin, J.A. (2005) We the Leaders: In Order to Form a Leaderful Organization. *Journal of Leadership and Organizational Studies*, 12, 18–30.
- Raelin, J.A. (2011) From Leadership-as-Practice to Leaderful Practice. *Leadership*, 7, 195–211.
- Reicher, S., Haslam, S.A. and Hopkins, N. (2005) Social Identity and the Dynamics of Leadership: Leaders and Followers as Collaborative Agents in the Transformation of Social Reality. *Leadership Quarterly*, 16, 547–68.
- Rickards, T. and Moger, S. (2006) Creative Leaders: A Decade of Contributions from Creativity and Innovation Management Journal. *Creativity and Innovation Management*, 15, 4–18.
- Segercrantz, B. (2009) Towards a (More) Critical and Social Constructionist Approach to New Product Development Projects. *Ephemera: Theory and Politics in Organization*, 9, 182–94.
- Sölvell, I. (2008) *Formalization in High-Technology Ventures*. EFI, Stockholm.
- Spillane, J.P. (2006) *Distributed Leadership*. Jossey-Bass, San Francisco, CA.
- Turner, J.R. and Müller, R. (2005) The Project Manager's Leadership Style as a Success Factor on Projects: A Literature Review. *Project Management Journal*, 36, 49–61.
- Uhl-Bien, M. (2006) Relational Leadership Theory: Exploring the Social Processes of Leadership and Organizing. *Leadership Quarterly*, 17, 654–76.
- Wood, M. (2005) The Fallacy of Misplaced Leadership. *Journal of Management Studies*, 42, 1101–21.
- Yukl, G. (2008) *Leadership in Organizations*. Prentice-Hall, Englewood Cliffs, NJ.

Dr Monica Lindgren earned her PhD in Business Administration from Umeå University, Sweden and is currently Professor of Industrial Management at the School of Industrial Engineering and Management, KTH – Royal Institute of Technology, Stockholm. Her research interests centre on issues of social constructionism, project work, entrepreneurial processes, gender and organization, and identity theory. She is currently part of an international group of scholars arranging workshops on project work from critical research perspectives, and she is also co-leading a research programme on leadership from a constructionist perspective.

Dr Johann Packendorff earned his PhD in Business Administration from Umeå University, Sweden and is currently Associate Professor of Industrial Management at the School of Industrial Engineering and Management, KTH – Royal Institute of Technology, Stockholm. His research is focused on issues relating to project work, entrepreneurship, gender and social constructionism. Involved in the organizing of a series of international research activities related to project management and critical theory, Dr Packendorff currently co-leads a research programme on leadership from a constructionist perspective.