Posthuman Leadership

by

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Declaration

This thesis is the result of the author's original research. It has been composed by the author and has not been previously submitted for examination which has led to the award of a degree.

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Abstract

Traditional hierarchies and related ways of working are increasingly being challenged in face-to-face and virtual team environments and calls for alternative process-oriented leadership concepts are increasing. To support organisations in exploring new ways of doing leadership requires a departure from traditional leadership development approaches. Existing concepts oftentimes fail to speak to everyday concerns of practitioners and there is a need to develop more dynamic approaches and methodologies that are better suited to engage with the continuities of leadership practice and leadership development.

Leadership-as-Practice is one emerging concept that seeks to re-theorise leadership in ways that reflect its processual dynamics, collective orientation and its appearance in daily, banal routines from which possibilities and direction emerge. This study seeks to remedy the scarcity of empirical research on leadership practice by exploring how appreciative inquiry workshops effected leadership in one face-to-face and one virtual project team, in which team members developed new ways of doing leadership. The results are compared to developments in one face-to-face and one virtual team who did not participate in these workshops. The study radically reconceptualises leadership by adopting an agential realist perspective to move beyond the binary separation of social and material spheres, which encourages a holistic view of how temporality, environments, matter and discourse intermingle and create moments of leadership practice. From this perspective of vibrant materiality, a diffractive research method is developed, which is applied to analyse team meetings throughout the workshop process to explore emerging leadership moments, which produce direction and (re-)define boundaries within the spaces and relationships of the teams. This method is used to trace the temporal unfolding of the material-discursive practice of leadership through its sub-phenomena of producing positions and issues and their material effects.

Findings indicate that: (1) the workshops directly facilitated a reconfiguration of boundaries in human-non-human and human-human relationships, which created new capabilities for action and transformed the ways in which leadership was enacted; (2) the transformation of leadership practice was

different in face-to-face and virtual teams; (3) the progress that the workshop teams made spread out like waves over space and time and affected relationships and boundaries in the teams not participating in the workshops. This study demonstrates the potential of appreciative inquiry to transform leadership practice in face-to-face and virtual project teams and the analysis shows the potential of using a research philosophy of vibrant materiality and a diffractive research method to study leadership practice.

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I dedicate this thesis to my family, without whom none of this would have been possible. Only they know how much work has gone into this. My wife Bonnie motivated and supported me continuously, which enabled me to finalise this part-time doctoral study eventually after many years of hard work. I owe my children Benjamin, Bennet and Bradley the highest respect for allowing me to carry out the research and to work on the thesis during many weekends and mostly before or after work.

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List of Abbreviations

AI	-	Appreciative Inquiry
AIT	-	Advanced Information Technology
AR	-	Agential Realism
CAPEX	-	Capital Expenditure
CER	-	Capital Expenditure Request
CT	-	Communication Technology
FTF	-	Face-to-Face Team
L-a-P	-	Leadership-as-Practice
L-a-PD	-	Leadership-as-Practice Development
IT	-	Information Technology
VT	-	Virtual Team

Preface: Appreciative Inquiry

This thesis is framed and structured as an appreciative inquiry (AI), and I therefore chose to include this section as preface. I will start by briefly describing the main elements of AI to provide a basic understanding of the concept. Afterwards, I will justify my decision to choose AI as framework for this thesis and why it is relevant for leadership.

Introduction to Appreciative Inquiry

AI is a qualitative, action-research methodology, which was developed by David Cooperrider and Suresh Srivastva (Watkins et al., 2015). It "[…] has the potential to take an organization beyond disenchantment with the past, confusion about the present, and concern about the future through offering alternative conceptions of knowledge […] and exciting directions for approaching change" (Somerville & Farner, 2012, p. 10). AI is an experiential approach to learning and transforming human systems, which develops the capability of people to deal with their own issues (Raelin, 2007). Due to its focus on practice, generativity and collaboration it is often referred to as radically different approach to developing organising processes (Watkins et al., 2015). AI includes the concepts of appreciating and inquiring. To appreciate means to affirm strength and successes. The term inquiring relates to asking questions, exploring and investigating (Whitney & Trosten-Bloom, 2010). AI was originally developed as an action research method to inquire into "what gives life to organizations when they are most alive" (Grieten et al., 2018, p. 101). It was quickly adapted across the world (Fry, 2014) and overshadowed the original idea of generative theory building (Cooperrider, 2013). With social constructionism being widely regarded as underlying philosophy of AI, the concept has been referred to as an organisational transformation tool (Messerschmidt, 2008), a theory of organising (Cooperrider et al., 2008), a study of what gives life to human systems when they function at their best (Ludema & Fry, 2008), a method to foster innovation (Cockell & McArthur-Blair, 2012), a worldview or paradigm (Stratton-Berkessel, 2010), and way of organisational life (Ludema et al., 2012). The transformational impact of AI is widely recognised due to its affirmative focus (Bushe & Kassam, 2005; Cooperrider et al., 2013; Verleysen et al., 2015). When studying problems, groups often find that

both the number and severity of these increase. In the same manner, when groups study best practices and accomplishments, these tend to flourish. AI engages stakeholders on a pathway of re-imagining *what could be* to facilitate the creation of a shared vision (Watkins et al., 2015), which may make AI well suited for leadership development.

AI is an action research approach, which is done by or with insiders to an organisation, but never to or on them. It is oriented to the action those organisational members have taken, are taking, or wish to take to address a particular situation. AI intends to address situations or issues by extending visions of possibility by valuing what gives life to a system and by using the power of imagination (Cooperrider & Srivastva, 1987). AI thereby challenges traditional problem-solving approaches (Stavros et al., 2016) and instead builds on existing strengths within a team, department or organisation, which is also referred to as the positive core (Watkins et al., 2015).

AI is commonly described as a four-stage process: Discover, Dream, Design, and Destiny/Deliver (Stavros et al., 2016; Watkins et al., 2015). A fifth stage, Define, is often added at the beginning to give shape to the planning process (Fitzgerald et al., 2003). AI focuses on an affirmative topic, which an organisation wants to develop or learn about. This affirmative topic sets the frame of what is going to be inquired into.

The 5D cycle is one of the core elements of AI (see Figure 1). It is a process used to focus on what works in any team or organisation to create an affirmative future. The 5D model is continuous, and it is possible to refer both backwards and forwards around the cycle throughout the process. To emphasise the idea of AI being a continuous process, I added the ending ‘-ing’ to each of the different phases of the AI cycle. I now describe the different phases of this process.

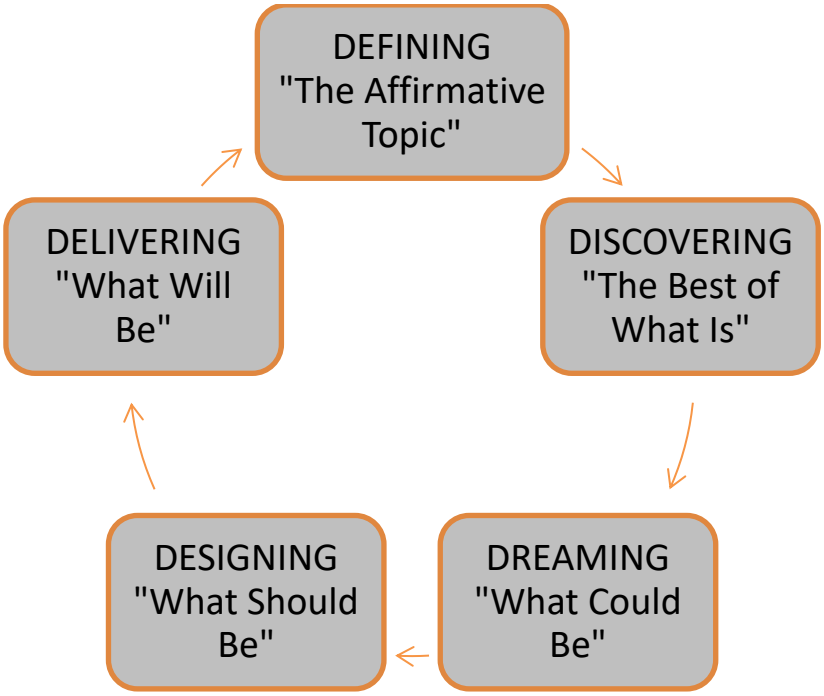

Figure 1: The Appreciative Inquiry 5D Process (own illustration)

Defining:

AI begins with a thoughtful and often continuous exploration of what to inquire into (Watkins et al., 2015), during which the affirmative topic is defined. The Defining phase clarifies the focus, assumption and roles and responsibilities in the inquiry (Watkins et al., 2015) and could therefore be seen as the initial planning phase. These assumptions lead to inquiry questions (Gupta & Van Wart, 2016), which influence the direction of the inquiry from the beginning.

Discovering:

Discovering identifies what gives life to an organisation by zooming in on peak experiences from the past (Cooperrider et al., 2008). Participants share stories of exceptional accomplishments that enable participants to move towards core life-giving aspects of an organisation. AI seeks to use those accounts as a foundation (Cooperrider et al., 2008). Interviews are conducted, stories are shared, and themes are identified that cut across these experiences. “The data collected during these interviews help the AI team identify, illuminate, and understand the distinctive strengths that lend the organization life and vitality when it is functioning at its best” (p. 104).

Dreaming:

The Dreaming phase is when participants project what is best into their hopes and plans for the future (Watkins et al., 2015). It is a process of finding common ground, in which individual ideals become shared visions by exploring discoveries from the previous phase (Ludema et al., 2012). Provocative propositions are developed as intentions to design the systems required for a successful Delivering phase. These are uplifting statements focusing on how to co-create a common future (Cooperrider et al., 2008).

Designing:

After having opened up the shared vision during Dreaming, Designing determines what should be. “Once people’s hopes and dreams have been articulated, the task is to design the organisation’s social architecture - norms, values, structures, strategies, systems, patterns of relationships, ways of doing things - that can bring the dreams to life” (Ludema & Fry, 2008, p. 283). From this phase onwards, the team is aligning movements with the shared vision to move towards it.

Delivering:

In this phase “the organization evolves into the preferred future image created during the dream phase, using the work done in the design phase” (Watkins et al., 2015, p. 37). A collective vision is driving continuous learning, adjusting as well as improvising, and the potential for innovation and implementation is high (Cooperider et al., 2008, p. 46). This process has no end point, because the commitment results in new affirmative topic choices (Cooperrider et al., 2008).

There are also certain principles that have been defined for AI and that anchor the 5Ds. These principles have developed over time. In this section I will only briefly mention the original core principles, which were originally formulated by Cooperrider and Srivastva (1987):

Research into the social potential of organisations should

1) start with appreciation;
2) be applicable;
3) be provocative; and
4) be collaborative.

The first principle is based the idea that in every organisation there exists something which works well. Consequently, the first phase in an AI is to identify, formulate and explain those situations in which an organisation is capable and most alive. The second principle highlights that the inquiry should lead to the creation of applicable knowledge, which can be validated in action (Cooperrider et al., 2008). The principle of the inquiry being provocative means that it encourages members of the organisation to act on them and to generate a preferred future. The last AI principle being collaborative means the inquiry process and its content are closely interrelated (Cooperrider et al., 2008).

Rationale for Applying Appreciative Inquiry

In this section I will discuss the rationale for adopting the AI framework in this thesis, which is different from traditional thesis frameworks.

Firstly, "[d]issertations in the social sciences are not what they used to be" (Anderson & Herr, 2014, p. 1). In recent years, qualitative action research studies, with a more emergent design and narrative style, have challenged the traditional positivist way of writing. This practical study takes an AI action research approach and therefore adopts a different structure. Due to the unique dilemmas action researchers face around validity, positionality, design, write-up, ethics, and defense of the thesis, there is not one defined way of writing an action research study (Anderson & Herr, 2014). One challenge is that traditional theses include public knowledge, which can be transferred to other situations and written up in a way that readers can understand the application in their specific circumstances. Action researchers, on the other hand, aim to create local knowledge, which is fed back into the setting. An action research thesis therefore is quite unique in terms of how to structure it and how to narrate the findings. Action research also should not be understood as a linear process with a defined ending, as projects can carry on for years, and as it usually involves an emergent design and cyclical revisions of research questions (Anderson & Herr, 2014, p. XIV). It was my purpose to choose a structure that brings across the practical experience and emergent nature of the project. The AI structure is well-suited for this purpose because it is grounded in actual experience (Giles & Alderson, 2008), and it is a fluid process that views change as ongoing and unpredictable (Whitney & Trosten-Bloom, 2010, p. 61/p. 174). The AI structure helped me to employ various define-discover-dream-design-deliver cycles to this emerging document. I, for example, repeatedly had to reshape the topic and the research questions. One of the objectives of this research project was to facilitate a transformation of leadership in practice. According to Reed (2007), change in practice depends on change in research, and change in research depends on change in practice. The structure of this thesis reflects that in this research project, a different way of research and evaluation were adopted. "Unlike traditional dissertations that insist on a dispassionate, distanced attitude toward one`s research […]" (Anderson & Herr, 2014, p. XV), I chose an action research approach and a

different thesis structure because I am passionate about the chosen topic, setting, and participants.

Moreover, I chose the 5D process to demonstrate that, although the thesis has now been written, the influence of this research project on the teams and myself still is and will be ongoing. It is my intention that the study findings spread out and influence future research projects. One more reason for me to choose this structure was to provide a richer understanding of the process the teams and myself experienced. As I introduce the field in chapter 1.1, I share some elements of a typical working day at an early stage of the project. This short story demonstrates my own but also the team members´ problem-focused thought processes before the AI workshops had started. The original motivation for this study was to focus on a problem to find a solution, which stands in contrast to the strength-based AI philosophy (Whitney & Trosten-Bloom, 2010). More specifically, “Appreciative Inquiry does in fact address issues, challenges, problems, and conflict, but it does so by shifting the focus and language from one of deficits to one of hope and possibilities based on what has worked in the past” (Preskill & Catsambas, 2006, p. 26). I will refer to the research motivation in the next chapter. The other chapters mark milestones and demonstrate the progress of this project, which allows me to tell the story of this AI project in a rich way and to provide a thorough description of the practical experience. According to Bushe (2011), AI as a transformative process does not solely impact broad organisational visions, but also the banal routines and details in daily practice. While working with AI, I more and more absorbed its key aspects. After a while, it seemed logical to me not just to use AI as a method of data collection, but to adopt its elements in the thesis.

Finally, adopting the AI framework in this thesis is consistent with the AI principle of wholeness. This thesis is different from traditional frameworks, and this may provide a more practical and deeper understanding of this research project, because “[t]he experience of wholeness […] emerges […] in understanding, accepting, and enjoying differences. The sense of understanding the whole story – with all its differences and distinctions – brings with it a kind of contentment that does not require agreement” (Whitney & Trosten-Bloom, 2010, pp. 66/67).

As this thesis is structured as an AI, the headings of the chapters all refer to the 5Ds that I have introduced in this section.

1 Defining: The Scope of the Inquiry

1.1 Introducing the Field

This thesis represents a transformative AI process, and this chapter marks the beginning. In this section, I will provide an overview of the research context and some of the challenges I was confronted with in the early stages of this project. Based on this, I will articulate the research motivation.

1.1.1 Research Context

This study was conducted at the German production site of a company with the pseudonym ‘W-Tech’ with more than 850 employees worldwide. The employees are located mainly in Germany, but also at sites across the USA, the UK, France, and Italy. W-Tech produces a range of different products, as for example power resistors and measurement systems for the automotive industry. In line with other organisations, W-Tech faces great transformations based on increasingly interrelated and faster moving environments. Collaborative work is increasingly carried out cross-boundary, reaching across functional, hierarchical, geographical, temporal, and organisational boundaries (Caulat & Pedler, 2012). Business processes could not be achieved anymore within the traditional boundaries of local departments and geographically dispersed teams were introduced with professionals being located at different sites or even outside the business.

Before this project started, W-Tech had expanded globally. The global expansion came along with challenges as manufacturing processes were not standardised across the different sites. This led to inefficiencies and quality issues. Until 2015, these issues had not been formally addressed, and responsibilities not clearly defined. In 2015, four project teams were formed to standardise production processes across different sites. The teams were also accountable for analysing, developing and rolling out improvements on existing products or processes at different production sites.

When this research project started, my role was to manage a production department with more than 55 employees while also being responsible for these four project teams. Two of these teams were traditional face-to-face teams and the members were based in Germany. The team members of the geographically dispersed teams were based at different sites in the USA, UK, France, Italy, and Germany. To communicate, these professionals relied on communication technology. In this study, I employ the term ‘virtual team’ to refer to the geographically dispersed teams. I decided to use the term as it is widely used in the literature to refer to teams who work across time, space, and organisational boundaries while interacting primarily through electronic communications (e.g. DuFrene & Lehman, 2015; Ebrahim et al., 2009; Gazor, 2012).

The virtual team members had worked with computer technology already prior to working in the virtual teams. Before joining the virtual teams, most of the employees had been employed well over ten years in the organisation and had worked at their local sites. As the virtual teams were formed, however, team members were required to communicate through communication technology (CT) and they had to change their communication and work practices.

1.1.2 A Problematic Working day

This section contains a description of a typical working day in the first month of this research project. It is representative of many other preceding working days and demonstrates some of the key challenges I faced regularly. The intention of this section is to paint a rich picture of the situation at W-Tech in the beginning of the project before I lay out the practical motivation for this project. It also shows the problem-focused mindset at this stage of the project.

When I arrived at my workplace in the morning, I used to carry out shop-floor walks to talk to operators, engineers, and team leaders. I needed to understand any issues that could negatively influence metrics or project goals, which would then need to be discussed with the relevant team to get solved and to put preventive measures in place. Occasionally I met Roland, an experienced process engineer who was responsible for optimising processes. He had been working for W-Tech for 40 years, and with only one year left until his retirement, he always had something to tell. He

asked me about my project, and I told him I study leadership. I shared my own work experience and explained what made me study the leadership phenomenon. The topic was engaging. Roland told me that many operators were frustrated. “Look at them. They are dissatisfied. Managers don’t listen to them when implementing changes. William never comes down here. I think I haven´t seen him down here within the last three months. Do you think it makes anyone happy when they realise that only KPIs count? It has gone just too far. It is important to motivate the guys again. As a leader, you need to act differently.” William was one of the senior managers, and production operators only rarely saw him. Some of them did not even know how he looked like. Roland also had to say something about Victor, one of the team leaders: “And they always complain about Victor. Sometimes he just needs to be more tactful. It´s not a good environment. You should talk to him about this.” I realised that Roland told the same story many others told as well. However, he was able to highlight the problem but struggled to offer an alternative way of doing things.

After my shop-floor walk I met both face-to-face teams at the German site. We carried out daily meetings that typically lasted no longer than 15 minutes, and each team member updated the team about the latest progress. Furthermore, issues and concerns were raised and addressed. I presented updates from the other project teams and sites. After the meeting, I informally talked to some of the team members, like Robert, who was responsible for quality management. He asked me how it was going, and I told him it could be better. I asked him if he had already contacted Alexander in the USA, as he had asked for advice regarding a process improvement a week before. “Sorry, it did not work out yet. It´s always a bit difficult due to the time zone. I called, but he didn´t pick up the phone. I will give it another try”, Robert answered. I told him that Alexander probably will not be available today due to other meetings, and that he will be off from tomorrow for a week. Another thing to worry about.

I then carried out routine work, partially on the shop-floor, partially on the computer and the smartphone. This mainly involved responding to e-mails, managing the diary, investigating customer complaints, discussing issues with team members and peers, and creating reports.

At around 2:50 pm I started setting up a project meeting via Skype with one of the virtual teams. Due to the time zone differences between the USA and Europe,

meetings always had to be held in the afternoon. The members were expected to join the meeting at 3:00 pm. At 3:05 pm, Gordon from the Italian subsidiary joined. I asked him where Christina was and he answered: “Ah, she cannot join unfortunately. She finishes a presentation for Luca. They have a leadership meeting today.” Luca was Christina`s line manager. I regularly experienced that team members could not join due to local priorities. Unfortunately, the video function did not work, and therefore the meeting had to be held as audio only. Due to missing body language it seemed to be more difficult for everybody to follow the conversation. Throughout the meeting I realised that the meeting would not finish on time and that the next meeting with the other virtual team had to be delayed. I sent an e-mail to the team members to let them know the meeting would start 10 minutes later. After one Skype restart due to increasing voice quality problems, the meeting was finished at 3:35 pm. The meeting with the second team had been rescheduled from 3:30 to 3:40 pm. I reconnected and the video display was working again. Some members joined the discussion not earlier than 3:50 pm, and at 3:52 I received a call on my smart phone from the French team members Florian and Lothar who informed me that they could not join, as their only video meeting room was occupied. I agreed to send them an e-mail update after the meeting. Such a situation was not only frustrating for me as manager, but for the entire team. After another 25 minutes of not very fruitful discussions due to a lack in participation, this meeting was also finished. After some follow-up work I was glad the day was over, and I asked myself what could be done differently.

1.1.3 Practical Motivation

In my role I was responsible for managing various projects. Two face-to-face and two virtual teams supported me, and I found it much more difficult to work with the virtual teams. It took them longer to implement new products and processes. It also took longer to get an answer from virtual team members and they communicated less frequently with each other compared to the face-to-face team members. In addition, the quality of work the virtual team members delivered was lower than in the face-to-face teams. Thus, rework was often necessary, project times increased, and projects became more expensive. Virtual team projects took around 20% longer to complete than comparable projects in the face-to-face teams. In addition, within the virtual

teams, more and longer team meetings were necessary, queries by the team members reached me more often, and the failure rate of tasks was higher.

This relates to what is widely reported in the leadership literature on virtual teams. Various scholars highlight the difficult working environment and specific challenges involved with virtual teams (DeRosa and Lepsinger, 2010; Gazor, 2012; Lee, 2014; Trivedi and Desai, 2012; White, 2014). DeRosa and Lepsinger (2010, p. 6) argue that “while many virtual teams are successful, a significant number are not reaching their full potential”. According to Gazor (2012) and White (2014), challenges in virtual teams include, among other things, time zone differences, language and cultural differences. Trivedi and Desai (2012) add that local priorities, issues with communicative devices, and misunderstandings increase the difficulties to work with virtual teams. Lee (2014, p. 32) highlights over 30 different challenges occurring in virtual team environments, including language, cultural, economical, technological, and interpersonal aspects.

However, this is just a selection of some of the challenges the teams were confronted with. Meetings I held with the face-to-face teams typically included discussions with all team members in traditional office environments. Meetings with the virtual teams had to be held virtually via computers with audio- or video-conferencing software. In the face-to-face teams, I found it therefore more convenient to carry out managerial work, as for example reviewing the status of certain projects or tasks, making decisions and spontaneously discussing issues. However, this became very time-consuming in the virtual teams, especially when technical issues, time-zone differences and misunderstandings emerged.

This situation, in which the virtual teams struggled to meet targets, led to many frustrating moments for the team members, which often occurred daily. The following comments made by team members before the AI workshops demonstrate that it was time to intervene:

Florian: “I have ulcers because of this negative thinking and talking. Every day I come to work and hear nothing but complaints and criticism and blaming. I hate coming to work.“

Gordon: “I am frustrated. I do not see where this is going. I believe we will never come to a decision. If this goes on I will not participate in any further team meetings.“

John: "Team meetings just take too long and are ineffective. I usually don`t attend anymore, because we don`t make progress anyway."

This was a significant issue, because the virtual teams were formed to carry out an increasing number of projects. This trend to make increasing use of virtual teams is also described in the literature (Aldag & Kuzuhara, 2015). The implementation of virtual teams has benefits, as it can reduce costs by avoiding the need to bring team members to one location. Another benefit is that scarce talent can be recruited internationally (DuFrene & Lehman, 2015). Some authors argue that the difficulties that are often associated with virtual teams can be transformed into benefits by providing suitable tools (Gazor, 2012).

When the virtual teams were introduced at W-Tech, there was no specific training on how to work in virtual environments, and the processes we applied resembled the processes that had been defined for face-to-face teams. However, considering the issues we experienced at W-Tech and the challenges described in the literature, it seems reasonable to assume that virtual teams differ from face-to-face teams in substantial ways. According to White (2014, p. 111) "[…] the dynamics and management of virtual teams are different in almost every respect to co-located teams". Hertel et al. (2005) argue that different degrees of 'virtuality' in teams have specific consequences for team management, as for example the requirement for an increased use of delegative management principles in virtual teams.

As manager, I could not risk that team members stayed frustrated for an extended period of time, as this could potentially lead to talented team members leaving the teams or business. It felt like the virtual teams were caught in a dysfunctional cycle, which they could not escape. My main motivation was therefore to find alternative ways of working with the virtual teams to make use of their potential and to deal with the various challenges the virtual team environment involves.

Neither I nor the senior management team of W-Tech were satisfied with the performance of the virtual teams before this research project. W-Tech´s main motivation was to reduce the number of hours worked in the virtual teams per project. The hours worked had to be reduced to the same level as in the face-to-face teams. Before the project, the labour cost in the virtual teams was approximately 20% higher due to more hours or premium hours worked compared to the face-to-

face teams. This made the projects carried out by the virtual teams too costly and it was not possible to introduce more virtual teams, which, however, would become necessary at some point due to the global expansion of the business.

1.2 Leadership Development

Due to the challenges in virtual team environments, a number of researchers argue that it is necessary to develop new ways of acting and behaving in virtual teams (Caulat & Pedler, 2012; DasGupta, 2011; Zigurs, 2002). I argue in line with Caulat and Pedler (2012) that in such a virtual work environment, in which people do not see each other as much, a new approach may be needed to successfully carry out leadership work and to transform ways of working. Gurr (2004) argues that traditional and formal ways of doing leadership may be detrimental to group performance in virtual teams, and Pulley and Sessa (2001) postulate that the key challenge in virtual teams is to figure out how to encourage team members to work cooperately and to create a culture that ensures that all the voices of leadership will be recognised. In line with this, several scholars highlight the need for distributed leadership (Bell & Kozlowski, 2002; Caulat & Pedler, 2012; Davis & Bryant, 2003; Muethel & Hoegl, 2010; Zigurs, 2002).

Supporting teams and organisations to develop these new ways requires a departure from traditional approaches to leader(ship) development. It has been argued that traditional approaches, in which individuals are trained (Raelin, 2011, p. 204) and perform in isolation do not give the opportunities to develop leadership substantially (Raelin, 2007; 2011), and this also refers to face-to-face teams. To achieve leadership development from such a perspective requires paying attention to the practice that is tied to the social relations between people, objects and their organisations. Team members should engage in a collaborative learning process (Raelin, 2016). Such a process should involve learners to engage in critical reflection to renew their understanding of leadership (Denyer & Turnbull James, 2016) and to address the question: “what kind of phenomenon is leadership?” (Ladkin, 2010, p. 3 in Denyer & Turnbull James, 2016, p. 264). It was therefore decided to enable the team members to create these new ways of leadership themselves in such a cooperative learning process within an appreciative inquiry workshop programme.

While four teams were observed in this project, only one virtual team and one face-to-face team participated in the appreciative inquiry workshops (see Table 1).

Table 1: Overview of participating teams and codes assigned to the teams

Virtual Teams	**Team "VT1"** *12 team members based in 5 countries* Workshop Teams	**Team "VT2"** *10 team members based in 5 countries* Non-workshop Teams
Face-to-Face Teams	Workshop Teams **Team "FTF1"** *10 team members based in Germany*	Non-workshop Teams **Team "FTF2"** *11 team members based in Germany*

The rationale behind this was to understand the difference of leadership development in a face-to-face and a virtual team and to understand how leadership in the workshop teams transformed throughout the project.

1.3 The Relevance of Material Aspects

A number of scholars argue that the challenges in virtual teams can be traced back to the physical distance between the team members, the communication technologies used and the resulting communicative barriers (De Paoli, 2015; Wageman et al., 2012). There are also various other contextual factors and material aspects that influence leadership and work practice in virtual teams, such as time zones and local priorities of team members (Lee, 2014). Based on my professional work experience I argue that contextual factors and material aspects also influence leadership in other environments, such as in face-to-face teams. Various leadership scholars argue that future studies should explore the role of practice and material aspects, which have been neglected for a long time in leadership studies (Carroll, 2016; Denis et al., 2010; Fairhurst & Connaughton, 2014; Hawkins, 2015; Ropo et al., 2013, 2015; Sergi, 2016). This practice turn marks the shift to studying

the routines and practices materialising in organisations (Raelin, 2016). Several scholars have mobilised this direction in leadership research under the rubric Leadership-as-Practice (L-a-P) (Crevani et al., 2010; Denis et al., 2010; Kelly, 2008; Raelin, 2016; Simpson, 2016). It is at this point that I adopt Karen Barad´s (2007) term material-discursive practice to recognise the oftentimes unnoticed aspects of matter and meaning in the enactment of practice. The concept of material-discursive practice is one aspect within Barad´s posthumanist concept of agential realism, which presents "a performative theory of the irreducible entanglement of matter and discourse" (Yoshizawa, 2014, p. ii). This concept will be further explored in chapter 3. Thus, I employ material-discursive practice as a central element of analysis in this thesis to study the processual relations between human and non-human phenomena in leadership practice.

1.4 Research Questions and Contributions

This research project deals with three main streams of research. The research questions therefore were diffracted (Barad, 2007) through three different streams of research relating to material-discursive practice, leadership practice, and AI. By diffracting, I refer to the act of developing an understanding of how different theoretical perspectives, when understood through each other, lead to new perspectives, which may be useful. The aim of this approach is to (Barad, 2007):

"[R]ead insights from these different areas of study through one another […while remaining] rigorously attentive to important details of specialized arguments within a given field, in an effort to foster constructive engagement across (and reworking of) disciplinary boundaries" (p. 25).

The first line of thought addresses leadership practice and argues that "*the accomplishment of leadership* may be said to be the moment-by-moment production of direction, or collective agency in changing *and setting courses of action"* (Crevani and Endrissat, 2016, p. 42). Crevani (2011) and Crevani et al. (2014) point out that the production of direction can be understood as the core of leadership work. It is supported by various interrelated practices. One central practice that contributes to the social production of direction is the ongoing re/shaping of positions (Crevani, 2011). "A position may also be understood as including aspects of the work

one is expected to do, the task, and the kind of person one is expected to be, one's identity" (Crevani, 2015, p. 197). Further, the production of positions is closely related to the production of issues (Crevani et al., 2014; Lindgren & Packendorff, 2011). As issues come up, positions may have to be reshaped and boundaries become challenged, which may lead to modified issues. Depending on the direction such structuring takes, new spaces of action and possibilities for actions will emerge, while other actions will become impossible (Crevani et al., 2014).

The second line of thought relates to the concept of AI and its ability to deal with issues from an appreciative viewpoint. From a traditional problem-focused perspective "Sometimes it's almost as if we can't see issues in organisations until we can see them as a problem […]" (Lewis et al., 2016, p. 17). AI invokes the capability to transform practice by developing a theory of what 'gives life' to an organisation, and what it is that works well (Watkins et al., 2015). AI starts by asking appreciative questions that are used to shift the attention from problems to possibilities (Whitney & Trosten-Bloom, 2010). Over time, AI may change the way people think (Marshak, 2005) and that, what we perceive as an issue, might change as well. It therefore may have an impact on leadership practice, which is closely tied to the production of issues.

The third stream of research challenges the widespread focus on the human and falls under the concept of posthumanism (Barad, 2007). In this study, I specifically refer to Barad's posthumanist concept of agential realism. Karen Barad´s agential realism "calls into question the givenness of differential categories of human and non-human, examining practices through which these differential boundaries are stabilized and destabilized" (Barad, 2007, p. 66). While many performative approaches in leadership research focus on the language, Barad views materiality as discursive. This emphasises "the contribution of materiality to leadership interactions" (Sergi, 2016, p. 111) and allows for new possibilities for agency to be explored. Even though human-centricity has been criticised to varying degrees in the leadership literature (Ford et al., 2017; Raelin et al., 2018; Simpson, 2016), I argue that Barad´s work, which makes matter more accessible, can be used to further develop an understanding of human and non-human processes of leadership and AI.

Taken the first two lines of thought together, I argue that the production of direction, and thus leadership work, may be influenced when the perspective of what is

perceived as an issue transforms. AI seems to be capable of paving the way for such a transformation of perspective and thus for a change of how leadership work is conducted. A transformation from viewing issues as problems to viewing them as opportunities might also influence the production of positions, because as issues rise, positions may have to be reshaped and boundaries move, which again may have a reconfiguring effect on the relations of human and technology, which may again influence the production of direction (Crevani, 2011; Crevani & Endrissat, 2016). In this study, AI is used as process to develop leadership practice in the teams. AI is therefore applied as method for Leadership-as-Practice development (L-a-PD). I argue that supporting teams and organisations to develop new ways of working in virtual team environments requires a departure from traditional approaches to leader(ship) development. The research questions are based on the idea that AI can transform leadership work by re/shaping boundaries. Due to the entanglement of practices, the human and non-human relationship may also change, as a transformation of issues may influence the re/shaping of positions and identities, especially in virtual teams.

I therefore propose the following research questions to understand the development of different ways of working with the teams by changing the ways in which leadership is carried out through the AI process:

1) ***Research question 1: How can Appreciative Inquiry be used to develop leadership practice in virtual teams and face-to-face teams?***
2) ***Research question 2: How is leadership practice different in each team before and after the Appreciative Inquiry process?***
3) ***Research question 3: How can leadership and its transformation be studied empirically from a practice perspective?***
4) ***Research question 4: How can leadership practice be theorised as an emergent social process?***

This study also makes three contributions:

1) A practical contribution by providing an understanding of how leadership practice differs between the virtual teams and the face-to-face teams observed before and after the AI process. This has implications for how

leadership and leadership development can and possibly should be understood in organisations.

2) A methodological contribution by developing a method to study leadership practice and its transformation.

3) A theoretical contribution by developing the concept of L-a-P further by adopting a research philosophy, from which leadership can be understood as material-discursive practice. Another theoretical contribution will be made by developing the concept of e-leadership further by using insights from L-a-P.

I turn to the specifics of the research methodology in both chapters 3 and 4, in which I will justify the methods applied and how to use these to answer the research questions.

The answers to these research questions are intended to provide an understanding of differences in leadership practice in the face-to-face and virtual teams observed, as well as an explanation of how the AI workshops affected the teams and led to new ways of doing leadership. The research questions are also relevant to a much wider discussion in social theory relating to the central role of the human. The posthuman perspective adopted in this study attempts to address a historic privileging of the human (Barad, 2007), postulating a detachment of leadership from individual ‘leaders’. Researchers are struggling with the challenges such a perspective involves and empirical studies are still rare (Crevani & Endrissat, 2016, p. 35). As such, this empirical study will contribute to the emerging stream of leadership literature that deemphasises the role of the human in leadership work (Raelin, 2016; Simpson, 2016; Simpson et al., 2018b). Finally, the findings of the study are highly relevant to deal with the challenges at my workplace.

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1.5 Thesis Structure

The chapters of this thesis map onto the AI 5D structure discussed in the Preface (see Figure 2). I have added a sixth D (Discussion) added at the end.

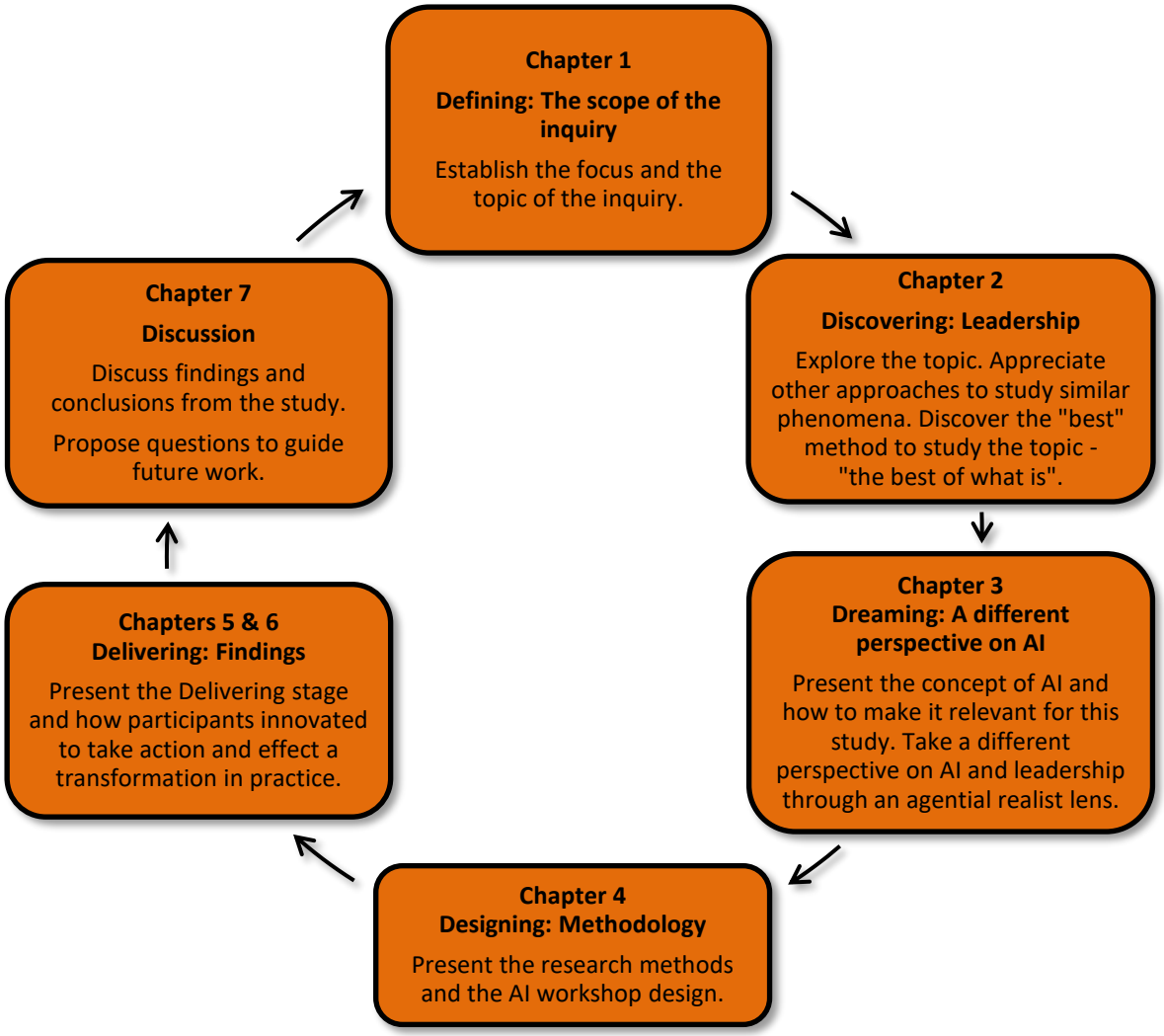

Figure 2: Structure of the thesis (adapted from Watkins et al., 2015)

In Chapter 1 (Defining), I defined the focus of the thesis and articulated the main research purpose that guides the study.

Chapter 2 (Discovering) situates this study within prior research in the fields of leadership and e-leadership. Furthermore, in Chapter 2 I present an analysis of the theories of leadership, which frame how I plan to study the phenomenon, and offer a concept based on the work of Crevani (2011) and Crevani et al. (2014) to study

leadership practice in face-to-face and virtual teams. I also discuss in greater detail the concept of L-a-P and explore how leadership development could take place from a practice perspective. In this fashion, Chapter 2 discovers key elements in the leadership literature and lays the theoretical foundation for the study.

Chapter 3 (Dreaming) then moves on to imagine an adequate research methodology and presents the rationale and details for the selection of the research methodology that have been made throughout the study. In this phase, a traditional concept of AI is transformed into an Apparatus of Appreciative Inquiring, which is inspired by Karen Barad´s agential realism.

Chapter 4 (Designing) presents crucial details about the practical application of the research methods defined in Chapter 3, and also discusses processes for data collection and analysis and the workshop process, as well as challenges, limitations and ethical considerations.

Chapter 5 (Delivering) presents the findings and looks at how leadership practice transformed in each team throughout the AI workshop process. I specifically focus on the differences that were enacted in each team and the effects of these differences.

Chapter 6 (Delivering) is the second findings chapter. This chapter focuses more specifically on how the differences that are presented in Chapter 5 emerged, and how human and non-human phenomena co-produced these in team meetings. I also take a closer look at the higher level patterns that these differences formed in each team.

Lastly, in Chapter 7 (Discussion), the findings presented in Chapters 5 and 6 are synthesised. I reflect and diffract (Barad, 2007, pp. 86-94) these through both the empirical data and theory. Within this final chapter, I detail the key findings from the empirical chapters and discuss their implications. These implications are then also related to the literature. I also discuss the limitations of this study and opportunities for future research.

2 Discovering: Leadership

"The real voyage of discovery consists not in seeking new landscapes, but in having new eyes" - Marcel Proust

The previous Defining chapter outlined the general context of this AI. This study is conducted at a time when work is undergoing a major transformation in terms of where and how it is carried out, which translates into the need to rethink the concept of leadership. This becomes noticeably clear in virtual teams, in which traditional hierarchies are no longer fit for purpose (De Paoli et al., 2017). However, traditional hierarchies and related ways of working are also increasingly being challenged in face-to-face team environments (Raelin, 2006), and calls for alternative process and relational oriented leadership concepts are increasing (Raelin, 2016). These concepts are oftentimes theoretical, and empirical contributions remain rare (Simpson, 2016). They are also heavily debated, as scholars are unable to agree on important aspects of these concepts, and they often fail to relate to everyday issues and concerns of practitioners (Bolden et al., 2011). This highlights the relevance of the present study, which aims at providing practical, theoretical and methodological insights into how leadership practice can be understood, studied and developed in face-to-face and virtual teams.

The purpose of this Discovering chapter is to explore the relevant leadership literature to lay the theoretical foundation for the following chapters and to answer the research questions. I focus on the specifics of the research methodology in the following two chapters, in which I will justify the research methods. In the Discovery phase of AI, the focus is on identifying what gives life. I will therefore not focus on what I understand to be 'not good enough' in leadership research and spend a lot of time criticising. Rather, as appreciating is what helps research move on from mirroring to making (Gergen, 2014) and to make research future forming (Otte, 2015), I will appreciate 'what works'.

Section 2.1 begins by discussing the framework I used to analyse the leadership literature. Three concepts of leadership (leadership as self-action, leadership as

inter-action and leadership as trans-action) are presented in section 2.2. Section 2.3 situates the emerging concept of Leadership-as-Practice (L-a-P) and identifies prevalent research gaps. I discuss the concept of e-leadership and identified research gaps in section 2.4 and situate the e-leadership literature within the broader leadership literature. Section 2.5 identifies opportunities for developing leadership practice through the use of AI. I will then summarise the key discoveries of the chapter and conclude with key opportunities in section 2.6.

2.1 An Introduction to Leadership Research

Researchers have spent many decades to explore leadership from numerous angles and identified a wide range of facets that shape the phenomenon. There have been various efforts to categorise the leadership field to make it more comprehensible (Bryman, 1996; Grint, 2005; Jackson & Parry, 2008; Schedlitzki & Edwards, 2017 Yukl, 2006). Stogdill (1974) coined the statement that “there are almost as many different definitions of leadership as there are persons who have attempted to define the concept” (p. 7) and debates about the phenomenon are still ongoing. There is a pluralism of perspectives: from theories that explore the specific attributes of a leader, to those that put more emphasis on processes and practices (Crevani et al., 2010; Denis et al., 2010, 2012; Simpson, 2016). While these debates have added to a general understanding of leadership, there are still significant gaps in the literature.

In the next sections, I focus on two gaps. The first gap relates to the lack of research into the observed practice of leadership and into how leadership unfolds over time within day-to-day routines (Denis et al., 2010; Friedland, 2015; Raelin, 2016). While leadership practitioners experience the emergence of leadership on a daily basis, these observations have not yet been codified as theory. The second gap relates to the issue that leadership theories tend to restrict themselves to human actors or processes, while there are more and more voices arguing that non-human phenomena are interwoven in the everyday production of leadership (Friedland, 2015; Ropo et al., 2015; Sergi, 2016). This is especially relevant in virtual teams, in which team members rely on communication technology (CT) to communicate. I argue that these neglected areas need to be addressed to provide valuable insights into the daily routines of leading and to answer the research questions in this study.

2.2 Self-action, Inter-action, and Trans-action

To achieve a deeper understanding of leadership practice, Simpson (2016) suggests a way of categorising the concept by distinguishing three forms of action: self-action, inter-action, and trans-action. She identifies the leader-practitioner, leadership as a set of practices, and leadership in the flow of practice. The central assumption of self-action is that individuals act under their own powers (p. 160). The assumption of inter-action is that existentially separate entities are inter-acting and influencing each other. This notion is related to Newton's mechanistic worldview, who understood the world as an "extended mechanism comprising material entities acted on by simple forces to produce instrumental outcomes" (p. 162). Leadership as trans-action understands the world in continuous flow and filled with agency (p. 165). In sharp contrast to self-action and inter-action, this perspective understands the world as full of entanglements and without separation (Barad, 2007).

Simpson (2016, p. 173) has produced a comparison of these different perspectives, which I have reproduced below (see Table 2). I will use this framework for the literature review. Simpson compares how each of these perspectives approaches agency, power, context, relationality, and temporality. An explanation of the features of the three perspectives follows in the next sections, in which I will link these to leadership concepts.

Table 2: Comparison of different practice perspectives of leadership (Simpson, 2016)

	The leader-practitioner	*Leadership as a set of practices*	*Leadership in the flow of practice*
Category of Action	Self-action	Inter-action	Trans-action
Agency	Exercise of free will	Influencing others	Ongoing coordinated accomplishment of work
Power	Power to	Power over	Power with
Context	Irrelevant	Structure as a fixed container within which action takes place	Context and trans-actors are mutually engaged in an emergent whole
Relationality	Irrelevant	Dyadic and network inter-linkages	Mutually constituting temporally unfolding relationships
Temporality	Irrelevant	Time as an independent variable	Temporal experience is enfolded and emergent with trans-actions
Ontological assumption	Substantialist, Representationalist	Substantialist, Representationalist	Processual, Performative

2.2.1 Leadership as Self-action

The first of these perspectives is to understand leadership as self-action. This leader-practitioner perspective highlights the self-action and individualism of the ‘heroic leader’ with the power and agency to achieve things. A leader-practitioner acts as change agent. This is the result of the individual`s capacity, traits, characteristics, personal charisma, and positional authority or expertise. Leadership from this perspective is ‘leader’ dependent and neglects context, relationships and time (Simpson, 2016).

Most leader-centric approaches fit into the self-actional domain, as for example the trait approach, the style approach, the contingency approach, and the new leadership approaches that have been influential since the early 1980s. However, there are still trait theories being published (e.g. Kant et al., 2013), which adhere to functionalist structures and traditional control models of organisations (Gftableordon in Parry & Meindl, 2002). The following sections very briefly touch on these theories.

2.2.1.1 Traits Theory

The trait approach focuses on identifying personality traits differentiating ‘leaders’ from ‘non-leaders’ (Rickards & Clark, 2006). “Early leadership studies attempted to identify, measure, and isolate universal traits successful leaders needed to possess to be effective or to be considered leaders” (Hansen et al., 2007, p. 548). Most trait theory studies focus on identifying attributes, but these attempts have come across various difficulties, and there is no agreement on a generally accepted set of traits among researchers.

2.2.1.2 Style Approach

The exhaustive lists of ‘leader’ traits were followed by studies seeking to identify idealised leadership styles for various contexts and situations. Several leadership scholars conceptualised leadership in respect of the behaviour of prominent social and organisational leaders (Fleishman et al., 1955; Sims, 1977). Research, therefore, concentrated on the behaviour and style of experienced senior executives, in contrast to internal traits. For instance, McGregor (1960) proposed that the behaviour of leaders could be categorised into two specific styles: Theory X, a directive style, and Theory Y, which relates to a supportive style. Both of these achieved success, but differed greatly. This style approach, however, could not sufficiently show how ‘leader’ behaviours related to performance outcomes (Bryman, 1992; Yukl, 2006) and the results from this research effort have been mostly inconclusive Yukl (2006).

2.2.1.3 Contingency Approach

The contingency approach focused on ‘leader’ behaviour and assumed that ‘leaders’ could situatively adapt their behaviour. The main interest shifted from selecting to training leaders (Hansen et al., 2007). This approach aimed to define the situational factors that influence how effective different leadership approaches are. Fiedler’s contingency model of leadership is a well-known example of this approach (Bryman, 1996). Contingency theory, however, generally has difficulties to elaborate why leaders with specific leadership styles are effective in some situations and other leaders are not (Northouse, 2007).

2.2.1.4 New Leadership Approaches

Bryman (1996) used the expression ‘New Leadership’ to relate to a number of leadership concepts, which came up in the 1980s and had several aspects in common. These included transformational (Burns, 1978), transactional (Bass, 1985), and charismatic leadership (House, 1977). In transformational leadership a person engages with others and creates a relation that grows motivation, trust, engagement and empowerment (Burns, 1978; Shelton, 2012). This kind of ‘leader’ pays attention to the requirements and the motivation of followers and seeks to support them to reach their highest potential. Transactional leadership is based on rules and transactions using rewards rather than inspiration. The ‘leader’ coaches or motivates followers to work towards set objectives by clarifying role and task requirements, and by providing rewards such as promotions and pay increases in exchange for loyalty and productivity (Shelton, 2012). In his theory of charismatic leadership, House et al. (1999) proposed that leaders act in certain ways that lead to specific charismatic effects on their followers. Besides exhibiting specific personality traits, charismatic leaders show and display certain kinds of behaviours they want their followers to adopt.

However, new leadership approaches have been criticised for various reasons, including a lack of conceptual clarity and consequential difficulty in measurement (Antonakis & House, 2002; Yukl, 2006) as well as leader-centrism (House et al., 1999).

2.2.2 Leadership as Inter-action

Leadership as a set of practices understands leadership as a relational process of reality construction (Wood & Ladkin, 2007). It regards agency as ‘inter-action’ and focuses on leaders and followers that pre-exist processes (Simpson, 2016), with leaders harnessing their collective capacities to pursue agreed outcomes. This highlights the leader`s power over others, exercised through networks and linkages, sharing that power through inter-agency endeavor (MacBeath et al., 2018).

An inter-actional perspective is oftentimes adopted by critical leadership scholars. Critical leadership studies can be related to research that aims at exploring previously neglected aspects of power relations, resistance, control, gender and identity dynamics (Collinson, 2011; Tourish, 2013). It has also been linked to the linguistic turn (Fairhurst, 2011) in the wider field of leadership literature, and is therefore characterised by a humanist focus on language. From an inter-actional perspective, agency is centered in the entities participating in the process (Simpson, 2016). Critical leadership scholars, for example, understand the agency to reside in leaders and followers, and these are often understood as pre-defined entities. From this point of view, leadership can therefore be understood as distributed: “Those seeking a more plural, less individualised expression of leadership have explored the possibilities of leadership that is collective, collaborative, participative or distributed, where agency still resides in individuals, but perhaps only temporarily, or in ways that are delimited by other inter-actors” (Simpson, 2016, p. 162). Thus, from an inter-actional perspective agency and leadership can shift between entities and entities have a direct mechanistic impact on each other. This is a key difference to the self-actional perspective, which sees leadership as residing in the ‘leader’ who can act independently and is not restricted by structures or norms. Leadership, from an inter-actional perspective, is often understood as socially and discursively constructed and there is a strong focus on the relationship (Fairhurst & Grant, 2010). This perspective understands reality by holding some variables constant while others are manipulated to explore the consequences of their specific inter-actions. Context, for example, is mainly seen as ‘fixed’, which involves a decontextualisation of lived experience (Simpson, 2016). Scholars who understand leadership as inter-actional usually look for answers to the question: ‘what do individuals do in the process?’ (Crevani & Endrissat, 2016). This perspective concentrates on the attributes of ‘the

leader', 'the follower' and the relationship between 'things'. From this viewpoint, leadership is viewed as "a two-way influence relationship between a 'leader' and a 'follower' aimed primarily at attaining mutual goals" (Uhl-Bien, 2006, p. 656). Scholars have focused on various communication patterns occurring in a manager-subordinate inter-action (Courtright et al., 1989), negotiations relating to interpretative schemes (Knights & Willmott, 1992), micro-level actions of 'leaders' and their effects (Denis et al., 2010), the event-driven aspects of leadership (Holmberg & Tyrstrup, 2010), and programmes to develop leaderful practice (Raelin, 2011) considering day-to-day routines as moments of leadership and understanding individuals as fields of relationships (Carroll et al., 2008), to highlight a selection of influential contributions. This perspective aligns with the Newtonian worldview, which has dominated modern science for a long time (Simpson, 2016), and which uses methods that can also be found in the natural sciences. The static character of this perspective seems to make it unsuitable for an exploration of leadership practice in constantly transforming workplaces and workspaces. Simpson uses a game of billiards as metaphor to describe the inter-actional view. Here, billiard balls inter-act with each other in a controlled environment (a billiard table) and bring about changes in speed and direction of movement but remain unchanged in themselves. According to Simpson (2009), actors do not change in the inter-action in which they participate, and they remain stable in the process. Therefore, actors oftentimes choose which practices to carry out, and the resulting effects can be observed. This perspective focuses on leadership as a leader-follower dualism and re-affirms leadership as aggregated individual acts.

Advances across various disciplines have drawn attention to phenomena that challenge the mechanistic predictability assigned to nature and humankind (Fairholm, 2004, p. 369), and which are understood as "neither individual entities, nor mental impressions, but entangled material practices" (Barad, 2007, p. 334). This leads to the perspective of leadership as trans-action.

2.2.3 Leadership as Trans-action

Whereas inter-action investigates what happens between independently defined inter-actors, "trans-actors are implicated as the ongoing, relationally relevant meanings that emerge from trans-actions […]. Trans-actors, whether they be human

or non-human, micro or macro, are defined within, rather than prior to, the dynamic unfoldings of trans-actional “becoming”” (Simpson, 2016, pp. 166/167). This understanding of leadership in the flow of practice encourages more intuitive and spontaneous agency than occurs through self-action or inter-action and creates enhanced opportunities for more widely defined achievements. As agency is exercised mutually in and through trans-actions, “they [the trans-actions] are arguably saturated in power and influence” (Simpson, 2016, p. 69). Raelin (2016) defines this as ‘collaborative agency’. He describes another benefit of trans-actions: “the parties committed to a practice enter an authentic dialogue to reproduce or transform the very practice in which they are engaged” (p. 133). Practice is forward looking, asking people to “create knowledge as they improvise around the problems they are confronting” (p. 134). This reinforces Simpson`s view that novelty emerges from trans-actions. There is also unanimity in Simpson`s and Raelin`s views on the locus of power in trans-actions produced “through the individual and collective agency of those affiliated in everyday practice” (Raelin, 2016, p. 134). Raelin writes: “Leadership is more about where, when, how, and why leadership work is being done than about who is offering visions for others to understand and perform the work in question. [...] ultimately, leadership becomes a consequence of collaborative meaning making in practice; in this way, it is intrinsically tied to a collective rather than to an individual model of leadership.” Simpson goes on to encourage us to think of this trans-actional view of practice as the “ongoing dialogical accomplishment of meaning” (p. 168) and as being “continuously constituted in the ongoing creative and improvisational movements that bring about change in the trajectories of social action” (Simpson et al., 2018b, p. 645).

Carroll and Simpson (2012) took an approach based on conversational trans-actions posted on an online forum. Other contributions focus on the relationships of computational objects and leadership practice (Friedland, 2015), conversational travel and moments of leadership (Ramsey, 2016), and the performative effects of turning points in the flow of ordinary conversations (Simpson et al., 2018b). There are many theoretical discussions (Raelin, 2016), but empirical studies are rare (Simpson, 2016). Even though the trans-actional approach presents a promising vision for a deeper understanding of leadership practice (Raelin, 2016), researchers have difficulties to develop a suitable methodology for carrying out empirical studies.

In addition, the “more complex, process and relational models often fail to speak to the everyday concerns of practicing managers” (Bolden et al., 2011, p. 37). One possible reason for such a lack of empirical analysis might be an ongoing struggle with the challenge of “how to remain true to the processual ontology […], and at the same time delimit the notion of leadership to discernible practices and interactions in order to make it possible to study” (Crevani et al., 2010, p. 81). Thus, there is potential for more empirical studies related to a process ontology to enrich our understanding of the leadership phenomenon if an approach can be found that moves between the worlds of movement and stability.

The trans-actional perspective is suitable when there is a requirement to recognise that social contexts are continuously changing (Simpson, 2009). This is the case in organisations, in which seemingly stable and structural elements of the organisation and more dynamic elements of human action trans-act in a continuous ‘dance’. While this relationship unfolds, new circumstances and conditions emerge (Malloch & Porter-O´Grady, 2008). The trans-actional perspective may thus be helpful in the present study, in which changing environments in face-to-face and virtual teams require new ways of practicing leadership. An understanding of leadership as trans-action assumes that nothing in nature is fixed, events are not predictable, control is an illusion, and that there is a trans-active interdependence between matter and meaning. These assumptions are shared by Karen Barad’s metaphysics of agential realism, which is based on assumptions of quantum physics (Barad, 2007). Instead of being and separation, this relational paradigm focuses on becoming and entanglement. I will discuss this concept further in the next chapter.

While Simpson uses the term ‘trans-action’, I am going to use the term ‘intra-action’ in this study. I do this as both terms refer to the same phenomenon and because Karen Barad, whose concept of agential realism I have applied in this study, uses the term intra-action. The term intra-action is also widely used among other scholars adopting an agential realist approach (see, for example, Shotter, 2014).

2.3 The Phenomenon of Leadership-as-Practice

2.3.1 Introducing Leadership-as-Practice (L-a-P)

The literature review illustrates leadership theory evolution from leader-centric self-actional approaches over studying leadership from the inter-actional representations of leadership towards studying intra-actional leadership processes.

The intra-actional perspective echoes the practice turn (Simpson, 2009), and represents a “prioritization of practices” in endeavours to understand social reality (Schatzki, 2001, p. 11). This turn marks the shift to studying the routines and practices occurring in organisations and it has been argued that the practice approach may be more critical than critical leadership studies (Raelin, 2016). Several scholars have mobilised this direction in leadership research under the rubric Leadership-as-Practice (L-a-P) (Crevani et al., 2010; Denis et al., 2010; Kelly, 2008; Raelin, 2016; Simpson, 2016). The practice turn is also occurring in other fields of organisational inquiry, as, for example, in the areas of strategy-as-practice (Chia, 2004) and technology-as-practice (Orlikowski, 2000). Kelly (2008) summarises this direction, proposing that there is a shift towards increased “interpretive and observational methods in the search for the practices of leadership in everyday life” (p. 763). L-a-P has been described as movement that relates to a collective orientation for changing the conventional view on leadership (Raelin, 2016) and which invites researchers to understand leadership as lived experience (Raelin, 2011).

In the following section, I will present L-a-P as developing research field and outline the key aspects of the concept and ongoing debates.

2.3.2 The Developing Field of L-a-P

The L-a-P literature is very fragmented. This is demonstrated by the debates between Collinson (2017, 2018) and Raelin et al. (2018) about whether L-a-P should be referred to as movement (Collinson, 2018; Raelin et al., 2018). While Raelin (2016) understands L-a-P as a movement, Kempster (in Raelin et al., 2018) conceptualises L-a-P as emerging concept, and Young (in Raelin et al., 2018) argues that to some degree there is a movement but that this cannot progress

without initial critique, contestation and argumentation. Carroll refers to L-a-P as a fledgling theory and Jackson suggests that L-a-P writers may have gotten ahead of themselves (in Raelin et al., 2018). Collinson (2018) concludes that L-a-P cannot yet be regarded as solidified movement. As pluralistic as these views are, as diverse are the concepts and understandings presented in Raelin's (2016) book about L-a-P. This might be the reason why Collinson (2018, p. 385) postulates that "I could not find any clear statement about its meaning". However, producing a clear statement of meaning is not the intention of processual research. Researchers focusing on practice approaches tend to be pluralistic, study individual cases, produce local knowledge (Raelin, 2016) and typically do not generalise. It therefore seems unlikely that there will ever be a clear definition of L-a-P. L-a-P research does not necessarily aim for consensus or truth. It includes an inquiry, which is lived and which is understood as 'true' to those who are living it. It focuses on the experience. Accordingly, the inquiry is open to a variety of perspectives. I therefore argue that trying to put a frame around the concept might be counterproductive, as it would restrict researchers in identifying these new ways. It is important to realise that L-a-P researchers operate from a different paradigm, in which the leadership phenomenon is a process of actions and relations. Collinson might have been looking for a definition as it has been provided by traditional leadership studies, in which leadership has been defined as process of influence (Uhl-Bien, 2006). However, intra-actional L-a-P researchers focus on 'in-flow-ence' (Simpson et al., 2018b), which signifies the movement that emerges within the practice of leadership. L-a-P scholarship looks at evolving, embodied, everyday activities and accomplishments. However, despite the fragmentation of the field, it is possible to identify common assumptions across the L-a-P community.

Firstly, L-a-P is interested in the everyday and mundane and regards practice as processual, situated, social and relational. Sergi (2016), for example, focuses on leadership`s processual dynamics, which occur in-situ and unfold over time, its collective focus, and its mundane character that relates to its emergence in banal routines and interactions. L-a-P means studying leadership as a 'lived' experience (Raelin, 2016) that includes daily, banal routines from which innovation, possibilities and direction emerge (Carroll, 2016; Crevani et al., 2010; Denier & James, 2016).

Similarly, it has been suggested that leadership can be found in non-deliberate daily practical coping actions (Chia & Holt, 2006; Cunliffe & Hibbert, 2016).

Secondly, L-a-P scholars recognise the relationship between materiality and leadership practice. As Raelin et al. (2018, p. 2) put it: “when social and material-discursive processes and activities begin to re-orient the flow of practice towards new meanings and directions, we say that leadership is taking place”. Leadership can therefore be understood as creative process that is entangled with material aspects, such as technologies and workplaces, discourses, language, and power (Ford et al., 2017). This relationship between the social and the material has been consistently overlooked (Gherardi, 2011), and L-a-P is starting to focus on these neglected aspects (Raelin, 2016).

Despite common agreement on these cornerstones, L-a-P researchers have been unable to agree on the concept of practice(s). The way in which practice is understood determines if an inter-actional or an intra-actional viewpoint is adopted. L-a-P researchers have also been unable to agree on the role of material aspects, which I will further explore in the next section.

2.3.2.1 The Concept of Practice(s)

There is a wide range of philosophies underpinning practice. Among these is a critical lens, a reflexive lens, a pragmatist perspective, a socio-material approach, a complexity lens and a posthumanist understanding of practice (Cunliffe & Hibbert, 2016). This is also reflected in Raelin`s (2016) book, which includes, among others, Ford`s (2016) critical, Simpson`s (2016) pragmatist, and Gergen and Hersted`s (2016) dialogic approaches. ““Practice” from both general and Leadership-as-Practice perspectives is a construct that is multiple and contested” (Cunliffe & Hibbert, 2016, p. 51). This is an issue more generally among practice theories, which differ substantially with regards to how practice is understood (Nicolini, 2013). Some L-a-P contributions, for example, emphasise power as well as the political and moral aspects (Woods, 2016), while others highlight the embodied nature of practice (Carroll, 2016; Sergi, 2016).

Related to this is the extent to which L-a-P researchers take an inter-actional or intra-actional approach on practice. L-a-P may incorporate both practices and practice (Raelin, 2016). As Simpson et al. (2018b) argue, practice(s) can be understood as

being both concepts that shape and guide what we do (practices / inter-actional), and the activity itself (practice / intra-actional).

Practices refer to specific sequences of activities that may repeatedly occur (Raelin, 2016). They are the “stuff of human activity; they are the routines and standard operating procedures invoked to simplify and clarify the uncertainties and ambiguities of living; within any given community of practitioners, they are the customs and traditions that define norms of thinking and action. Practices are socially constructed, but they often take on a certain solidity, a being-ness, that is resistant to change” (Simpson et al., 2018b, p. 647). Crevani and Endrissat (2016) link practices to an inter-active, or entitative-soft, approach.

Practice, on the other hand, relates to emerging entanglements that are likely to extend or change meaning over time (Raelin, 2016). It focuses on the continuous, always changing flow of action that materialises from social engagement. Practice may be understood as being entangled “not between people but “within” the dynamic unfolding of their becoming” (Raelin, 2016, p. 3). “It is in the collaborative act of constituting this flow that situations are transformed, and new meanings are created. Practice then, is the transformative dynamic that occurs inside the ‘black box’ where system inputs are translated into outputs in a perpetual process of becoming” (Simpson et al., 2018b, p. 647). From this perspective, practice is a material-discursive process that engages with, and is part of the experienced world (Barad, 2007). Crevani and Endrissat (2016) link practice to an intra-actional, or process ontology, approach.

In summary, while a ‘practices’ perspective looks for leadership in the the inter-actions between pre-defined entities, a ‘practice’ perspective focuses on leadership in the intra-actional flow of action. However, in the literature, sometimes both terms (practice/practices) are used interchangeably. As Crevani and Endrissat (2016) highlight, most studies in the L-a-P field focus on practices and thus on the building blocks of organising. Consequently, research contributions focusing on (intra-actional) practice are rare.

2.3.2.2 The Sociomateriality of Practice(s)

The second aspect of divergence is the view of how materiality (workplaces, technology, tooling) is shaping and influencing practice(s).

By locating leadership in and around people and language, scholars have paid particular attention to factors like traits, personality, charisma, as well as relationships (Sergi, 2016). Various L-a-P researchers have firmly anchored their inquiry in opposition to the dominant leader-centric approach, aiming at criticising this conception and at renewing our understandings of it (Crevani et al., 2010). Thus, it is not surprising to see that, although materiality is generally appreciated in L-a-P contributions, there are many L-a-P contributions that mainly deal with what is done by human actors in the context (Gergen & Hersted, 2016; Ramsey, 2016). Thus, the degree to which materiality is understood to effect leadership practice varies.

Yet, as Sergi (2016) has underlined, there is much more at play in the process of leadership than people. Various researchers call for the inclusion of materiality in conceptualisations and investigations of leadership (Carroll, 2016; Denis et al., 2010; Fairhurst & Connaughton, 2014; Hawkins, 2015; Ropo et al., 2013, 2015; Sergi, 2016). For example, Carroll (2016) argues that a practice perspective points to far more resources that can be mobilised to create possibilities for leadership than are commonly recognised. Going further, she points attention to spatial configurations, routines, and artifacts as pivotal resources for leadership. “All three enact leadership in largely symbolic, relational, and emergent ways” (p. 106). Carroll sees “any context or interaction as potentially ripe for immanent leadership action depending on how those involved understand themselves in relation to each other, their context, their shared work, and their purpose” (p. 107). She thus puts the focus on identity and sees non-humans as passive contextual factors, still focusing on individuals and how they create leadership identity through building routines or collecting artifacts. Also, some studies addressing distributed leadership include objects and the role they can play (Mulcahy & Perillo, 2010; Oborn et al, 2013). In most of these cases, human actors and objects tend to remain separated: objects are mobilised in context and influence leadership. As Oborn et al. (2013) suggest: “leadership enactment entails engaging with materiality” (p. 256) and that this materiality “configure[s] the relatonship between social actors” (p. 268). Most of these studies are missing what is necessary to fully account for materiality in the process: enlarging the concept of agency so as not to limit it to human actors (Barad, 2007). Sergi (2016) argues that it is the focus on action that makes it possible to get closer to materiality in leadership.

The challenge then becomes to fully acknowledge how such a cogeneration of leadership happens (Sergi, 2016).

This takes us to a perspective that can be alluded to as ‘sociomaterial’, which positions material artefacts and actions as interwoven (Hodder, 2012; Friedland, 2015). Some of these concepts de-centre human agency and attend to the agency of non-human phenomena. Sergi speaks of hybrid agency and argues that agency is not located in actants, but rather emerges out of the relations between human and non-human actors. As Sergi (2016, p. 115) notes: “It is this focus on action that makes it possible to get closer to materiality in leadership; by delving into action and reframing leadership based on what is happening in situ, materiality is already and irremediably part of the scene.” A limited number of studies have explored how materiality actively intervenes in the unfolding of action. Hawkins (2015) suggests that objects cogenerate leadership and that materiality in leadership studies should be included by focusing “on the processes by which certain effects, like leadership, come to matter to us, or ‘materialize’” (p. 953). Friedland (2015) points out that material interplay is a fundamental, and processual phenomenon of manifest existence, marking a refiguring of practices and objects, which includes leadership. He argues that “computational objects possess the agentive power to act and influence human behavior, to reverse the traditional subject-object relationship and, most provocatively, to assume a role, enacting a practice that historically would have been enacted by a human leader” (p. 188). Shotter argues that once we switch from mechanistic thinking and talking of ‘things’ and of human activities as separate to thinking of them from within an organic or living ‘world’ of growing and developing ‘things’, in which every ‘thing’ is dynamically related to every ‘thing else’, everything changes. Shotter argues that we should see everything as having its being only within its unfolding relations to its surroundings (Shotter, 2014). Referring to Barad (2007), Shotter uses the prefix ‘intra-‘, rather than ‘inter-‘, because, “like the intricate system of currents in the earth’s oceans, such currents all exist only in relation to each other” (p. 135). Similarly, Simpson (2016) sees agency as being manifest in the movements and directional shifts associated with turning points that redirect the flow of practice. “This definition makes no recourse to either human or non-human agents that “cause” change, seeing agency instead in the continuously unfolding

movements of social engagement" (Simpson, 2016, p. 169). In this study, I will refer to turning points as those leadership moments in which leadership can be located.

Thus, adopting an intra-actional process ontology may be helpful to address leadership in virtual teams, because such a position allows researchers to get closer to action as it unfolds. Following this, the central issue becomes how to approach and address this, which will be further explored in Chapter 3. Before, however, it is worth to take a look at the leadership literature that includes virtual teams and the use of CT, and if any consideration has been given to leadership practice in such an environment. This concept is often referred to as 'e-leadership'.

2.4 The Phenomenon of E-Leadership

2.4.1 Introducting E-Leadership

In the previous sections, I described the shift from traditional leader-centred understandings to process approaches of leadership and the divergent views within the L-a-P movement with respect to the concepts of practice(s) and materiality. This has laid the foundation to situate e-leadership, which takes place in virtual team environments and is related to the use of CT, within the broader leadership literature. As work is increasingly drifting into virtual space (De Paoli et al., 2017), leadership is increasingly taking place without people sensing and seeing one another (Avolio et al., 2014). Inspite of the growing interest in studying the relationship between CT and leadership, studies are fragmented across several disciplines. This makes it difficult for researchers "to detect larger patterns of change resulting from the digital transformation" (Schwarzmüller et al., 2018, p. 114). Scholars rely on a number of theoretical concepts to explain the phenomenon, and different terms have been used to describe it. The most common terms that can be found in the literature are 'e-leadership' (Bansal, 2010), 'digital leadership' (Sheninger, 2019), 'leadership at a distance' (Weisband, 2007), and 'virtual leadership' (De Paoli, 2015; Pullan, 2016). The following sections compare these concepts and discuss the relevant literature.

2.4.1.1 Digital Leadership

The term digital leadership has often been characterised as core competence required to drive digital transformation in organisations. Scholars tend to characterise digital leadership as a competence or skills of a ‘leader’ that is required to use digital technologies to introduce changes (Brett, 2018; Goethals et al., 2002; Kane et al., 2019; Sheninger, 2019; Wasono & Furinto, 2018). Kane et al. (2019, p.34) argue that “while many core leadership skills remain the same, the particular demands of digital disruption call for certain new skills as well”. Digital leadership is also referred to as consisting “of a dynamic combination of mindset, behaviours, and skills that are employed to change and enhance school culture through the strategic use of technology” (Sheninger, 2019, p. xvi). Quite similarly, Wasono and Furinto (2018) characterise digital leadership as combination of leadership skills and digital capabilities to improve the advantages of digital technology with an objective to improve business performance. From this viewpoint, technology is seen as tool “to support and enhance traditional aspects of leadership” (Sheninger, 2019, p. xvii). Narbona (2016), for example, defines digital leadership as human quality of leadership deployed with digital tools in the virtual world. While Kane et al. (2019) acknowledge the material effect that new technologies have on leadership, they focus mainly on the skills that ‘leaders’ have to develop as a result of new demands in the workplace. Thus, scholars referring to digital leadership seem to explore the phenomenon from a self-actional perspective as they focus on individual leaders and their skills to introduce transformations by using technology as a tool. Scholars who focus on distributed forms of leadership tend to use the terms virtual leadership, leadership at a distance or e-leadership, which are explored in the next section.

2.4.1.2 E-Leadership

E-leadership differs from traditional face-to-face leadership to the degree that work is mainly depending on the application of CT (Avolio & Kahai, 2003). The term e-leadership is often used synonymously with the term leadership at a distance (Poser, 2016). In this study I use the term e-leadership. There are some researchers who prefer to use the description ‘distributed teams’ which underlines the geographical aspect (Kayworth & Leidner, 2001; Muethel & Hoegl, 2010). Many researchers perceive virtual or distributed teams to be global teams (Mendenhall et

al., 2012; Zander et al., 2013). Research on global teams deriving from the fields of cross-cultural management, however, is less interested in the involvement of CT in the leadership process, but focuses more on different cultures and intercultural communication (Kerber and Buono, 2004; Mendenhall et al. 2012; Zander et al., 2013). This thesis does not specifically focus on the cultural aspects in virtual teams, because a focus on this and related aspects would increase the complexity of the study to a degree that would make it even more difficult to carry it out. However, culture can be understood as interacting and changing sets of practices influencing communicative processes, and as inherently being produced in and by relations (Warren & Fassett, 2015). As I focus on relational processes in this study, aspects of culture are also considered. Due to this entanglement, leadership cannot be decoupled from culture.

E-leadership has been the focus of many studies recently, working hand in hand with the application of CTs in organisations. Modern CTs have created a new reality with e-leadership being more widespread than ever before (Caulat & Pedler, 2012; Ropo et al., 2015; Zander et al, 2013). Many tasks cannot be achieved anymore within the boundaries of formal departments. The value of insights into e-leadership is growing as companies are increasingly sharing the work among virtual teams, and with the assistance of CT this is today possible in virtual environments (Poser, 2016).

However, different perspectives and overlapping concepts have muddied the waters around the concept. Some researchers suggest that leadership in virtual environments does not differ from leadership in a face-to-face environment (Emery & Barker, 2007), whereas others argue that new ways of doing leadership in virtual teams are needed (De Paoli et al., 2017). However, the increased use of CT has generally been acknowledged by e-leadership researchers. Although the number of studies is increasing, it is difficult to draw conclusions (Bansal, 2010) as the field is very fragmented and researchers need to keep up with technological developments. Most studies, which have been published, have been conceptual rather than empirical (Poser, 2016). It adds to the complexity that in e-leadership research different disciplines meet. Most studies, for example, have been carried out in the fields of information systems management, small groups and project management research (De Paoli et al., 2017). E-leadership research therefore is somewhat decoupled from general leadership research. In addition, CT or advanced

information technology (AIT), as some scholars refer to it, and its implementation in organisations have surpassed the science of e-leadership. “[T]he leadership field has studied the traces left behind after AIT has been appropriated, following what the impact has been, versus predicting what could be” (Avolio et al., 2014, p. 106). Al-Ani et al. (2011) conclude that “there are significant gaps in developing new conceptual understandings of leadership of virtual or distributed groups or teams” (p. 225). It can therefore be argued that e-leadership research is still in its infancy stage (Jones, 2017).

Avolio et al. (2000) were some of the pioneers to establish e-leadership as a new phenomenon, to investigate the effects of CT upon leadership, and to provide an e-leadership definition: “a social influence process embedded in both proximal and distal contexts mediated by AIT that can produce a change in attitudes, thinking, behavior, and performance” (Avolio et al., 2000, p. 617; Avolio et al., 2014, p. 107). This definition is still in use and cited in many e-leadership contributions (e.g. Arnold & Sangrà, 2018; Poser, 2016). It shows an understanding of e-leadership from an inter-active viewpoint, from which one entity seeks to gain influence over the other (Simpson et al., 2018b). When researchers compared virtual teams and face-to-face teams, the empirical results were confusing. Some studies conclude that transformational leadership is working well in virtual teams (Purvanova and Bono, 2009), whereas other researchers argue that it is less effective under high geographic dispersion (Howell & Hall-Merenda, 1999). My intention is not to go into further detail, but to show the inconsistency in results. Such an approach of transformational leadership collapses leading, a collective and dynamic process in which also context plays a key role, into ‘leaders’ and ‘followers’, an individual-based unit of analysis. However, such a dynamic process cannot simply be reduced to one entity (Ladkin, 2010), which might explain this inconsistency. Thus, these results arguably are only of limited use for practitioners. Such studies are not helpful for developing an understanding of leadership in virtual environments, as they do not help us to successfully deal with practical challenges. Most solutions proposed for e-leadership challenges have been developed from traditional inter-actional viewpoints using associated methodologies. While in general leadership research practice-oriented concepts have led to some progress, these concepts have not yet found their way into e-leadership research.

It is worth pointing out at this stage that there is a research stream on technology that Cascio and Montealegre (2016) called entanglement-in-practice, which looks at how technology is interwoven with everyday practice. It understands people and technology as only existing in relation to one another, and "they acquire form, attributes, and capabilities through their interpenetration" (Cascio & Montealegre, 2016, p. 362). Some researchers within this stream strongly focus on practice and process, but also this perspective has not yet found its way into e-leadership research.

2.4.2 E-Leadership Challenges

Researchers address the e-leadership phenomenon and the associated challenges in different ways. Some focus on the technological challenges involved with virtual teams and on detecting practical challenges when working in virtual space. They discuss virtual team leadership (Zigurs, 2002), leader relations (Pauleen, 2004), trust (Aubert & Kelsey, 2003) and conflict (Wakefield et al., 2008).

Although the need for virtual teams is recognised, there are various critiques about their capability to achieve results to the same degree as their face-to-face counterparts (McDonough et al., 2001). Some e-leadership studies suggest that due to the degree of virtuality underpinning dispersed collaboration new kinds of leadership challenges emerge and existing challenges increase (De Paoli et al., 2013; Gurtner et al., 2007; Kayworth & Leidner, 2002; Zigurs, 2002). One key challenge is related to the use of CT. The use of CT creates boundaries, which limit the flow of dispersed collaboration (Wageman et al., 2012). When communicating asynchronously by email, people work in different physical locations (boundary of space), they might also occupy different time zones (boundary of time), they can reply to each other at their own convenience (boundary of simultaneity), they cannot see one another face-to-face (boundary of visibility), and they also cannot hear one another (boundary of audibility) (De Paoli, 2015). Other challenges arise when members do not know each other (Pauleen, 2004), and when different religions, languages, cultures and professions meet (Mendenhall et al., 2012; Zander et al., 2013). Lee (2014, p. 32) highlights over 30 different challenges occurring in virtual team environments. Some researchers argue that most of the challenges are to a great extent explained by a lower quality of communication due to the lack of

informal cues, body language, sensations and emotional contact (De Paoli, 2015; Wakefield et al., 2008; Zigurs, 2002). Zigurs (2002) suggests to use newer and better technology to achieve better relations and reduce the boundaries described above, such as using communication technology that allows for more and richer information. Zigurs furthermore postulates that a telepresence should be established, which relates to the experience of being present in a place different from the physical location. The argument is that the more interactive a medium is, the higher the chance that team members will experience telepresence.

Despite recent efforts in organisations to introduce new technologies and to design workspaces to foster communication, collaboration and creativity (Ropo et al., 2015) and to introduce telepresence, it seems that traditions and cultures at work are quite conservative and unchangeable (De Paoli, 2015). Researchers therefore argue that it is necessary to develop new ways of acting in virtual teams (Caulat, 2012; DasGupta, 2011; De Paoli, 2012, pp. 112/113; Zigurs, 2002). Some researchers suggest to implement a responsible, strong 'leader' to follow up relations, control actions and performance (Pauleen, 2004; Wakefield et al., 2008; Zhang & Fjermestad, 2006). Gurr (2004), however, argues that formal leadership may be detrimental to group performance, and "[t]he traditional leader-centric approach with a focus on knowledge, skills, abilities and traits of virtual leaders or different leadership styles does not give the necessary opportunities to improve leadership substantially in virtual space" (De Paoli, 2015, p. 120). Thus, considering the high distribution of work processes among virtual team members, leadership should be distributed and shared to a greater extent (De Paoli, 2015; Pulley & Sessa, 2001; Shamir, 1999, p. 50). Pulley and Sessa (2001) argue that potentially the key challenge in e-leadership is how to make individuals work together to create a culture that allows all voices of leadership to be recognised. In line with this, several scholars highlight the need for distributed leadership (Bell & Kozlowski, 2002; Caulat & Pedler, 2012; Davis & Bryant, 2003; Muethel & Hoegl, 2010; Zigurs, 2002). Even though more recent studies highlight the need for shared leadership approaches, contributions in the field of e-leadership are still dominated by traditional, positivist-scientific and mainstream-mechanistic assumptions and methods, highlighting ideals such as "objectivity, neutrality, scientific procedure, technique, quantification, replicability, [or] generalization" (Alvesson & Deetz, 2000, p. 49). I argue that these

approaches are inappropriate to study leadership, as they are transforming complex social relations and processes “into unrecognizability through the application of standardized measures and abstract categories” (Alvesson, 1996, p. 464).

There are a few contributions that go further by acknowledging the role of materiality in e-leadership (De Paoli et al., 2012, 2014, 2017) and that take a relational and processual approach. Caulat and Pedler (2012), for example, argue that leading in virtual teams requires paying attention to intuition, feelings, listening, focus, relations and relationship building techniques, all of which are related to practice. De Paoli et al. (2015, 2017) argue that focusing on the material aspects of e-leadership is unexplored territory that needs to be researched. However, in the evolution of the field of Leadership-as-Practice, e-leadership has been overlooked. On the other hand, e-leadership researchers have not yet focused on practice. As “*leadership-as-practice* is less about what one person thinks or does and more about what people may accomplish together” (Raelin, 2016, p. 1), it may be what is required to find solutions for the problems challenges organisations face in e-leadership environments. Thus, what is missing to date is a link between L-a-P and e-leadership by inquiring into how leadership practice in virtual team environments should be developed. Such an inquiry that introduces a transformation of practice may be useful, because while technology transforms, the way people work and lead does not tend to change (De Paoli et al., 2017).

It is possible to conclude that despite the innovative character of new technologies, e-leadership researchers still predominantly employ traditional individualist leadership approaches and methods. However, such reductionist methods are ill-equipped to provide adequate insight into the process of leading. The turn to practice has also not yet found its way into e-leadership research, although many researchers have called for more distributed, collaborative, and embodied ways of leading virtual teams. Raelin (2016) argues that the new focus of L-a-P offers a plethora of research opportunities encouraging the study of social processes beyond traditional understandings of leadership as influence process. An L-a-P perspective may open up possibilities for e-leadership researchers to start exploring mundane activities in organisations as they emerge on a day-to-day basis and redirect the flow of practice, which is the core of leadership work (Crevani, 2015; Simpson, 2016). It

would therefore be helpful to stretch the leadership debate into these areas, which have not yet been considered by e-leadership researchers.

The next section considers how leadership practice could be developed in virtual teams so that these challenges can be addressed. This section provides the link between L-a-P and AI.

2.5 Leadership-as-Practice Development

Work is increasingly digitalised, globalised and dynamic (Ropo et al., 2015), and virtual working is becoming more popular. The network model of an organisation is increasingly put forward as a metaphor for new ways of working, inspired by the network structure of information technology. This model implies flat hierarchies and the importance of communication. In virtual teams, it is technology that allows people to cooperate, and virtual spaces should support collaboration (Hunnes Blakstad, 2015). As already pointed out in the previous section, despite the changing context in organisations, cultures, structures, and ways of doing things seem to largely remain stable (De Paoli et al., 2017). Thus, teams should be supported to develop new ways of working and leading.

Supporting teams and organisations to develop these new ways requires a departure from traditional approaches to leader(ship) development. Raelin (2011, p. 204) argues that traditional approaches, in which individuals are “sent away to learn their leadership” result in individuals acting and performing in isolation to others and do not give the opportunities to develop leadership substantially (Carroll et al., 2008; Raelin, 2007, 2011). Traditional models confirm a ‘leader’ in control, but the situation in virtual teams is very much about not having control (De Paoli et al., 2017), and L-a-P researchers move toward decentering the notion of leadership from individuals entirely and look for leadership in practice.

To achieve leadership development from a practice perspective requires attending to the practice that is part of the social relations between people, objects and their organisations. Team members should engage in a collaborative learning process associated with lived experience (Raelin, 2016). Such a process should involve learners to participate in critical reflection to review and renew their understanding of leadership (Denyer & Turnbull James, 2016) and to address the question: “what kind

of phenomenon is leadership?" (Ladkin, 2010, p. 3 in Denyer & Turnbull James, 2016, p. 264). An approach of Leadership-as-Practice development (L-a-PD) "is deeply embedded and originates out of the context and the challenges that people in the organization face *collectively"* (Denyer & Turnbull James, 2016, p. 266). It explores "the scene of everyday action" (Chia, 2004, p. 30). It is experiential, interactive, situated, embodied, sustained, and involves relational activities that create a new type of engagement with other people and the world. Learners observe and experiment with their own practice in intuitive, situated and open-ended processes of wayfinding (Chia & Holt, 2009). Wayfinding as method of inquiry is concerned with transformational practice and is the method of choice in this context. In L-a-PD, a transformation is not achieved by implementing a known process (navigating) but it requires the disruption of existing patterns (wayfinding) and experimentation to enable emergent futures and previously unconsidered possibilities (Denyer & Turnbull James, 2016). It recognises the uncertainty of the future and understands that opportunities to create transformations reside within this uncertainty. Such an inquiry produces a desired future by moving onto the road less travelled, where new possibilities for leadership can be found. Wayfinding is to be seen in contrast to navigating, which is generally carried out before the journey starts, and if done well will require only small adjustments throughout the journey (Chia & Holt, 2009; Chia, 2017). Wayfinding also moves to a more collaborative, learning-as-we-go approach. In this sense, it works well with L-a-P. It is seen as a potential, which is located at every desk and in every organisational situation.

L-a-PD is therefore about giving support to everybody who is in a situation of 'not knowing', and such a programme must be long enough to "move beyond reviewing and renewing the leadership concept held by learners and their organizations" (Denyer & Turnbull James, 2016, pp. 268/269). Denyer and Turnbull James (2016) recommend to form teams, which focus on learning about collaboration and shared leadership practice. L-a-PD is anchored in practice, bringing together learners who can collaborate to find solutions for the challenges they face together. Some general objectives may be described to support the intervention, but the precise learning outcomes will be determined by the group as the group goes (wayfinding). L-a-PD introduces an element of inquiry whereby learners collectively search for potential solutions to issues being addressed.

These learning teams achieve learning by integrating three forms of knowledge:

1) knowledge that the learners themselves bring;
2) practical and theoretical public knowledge to frame, support, or challenge participants' thinking; and
3) knowledge that is collaboratively produced or developed in the programme.

To conclude, traditional leadership development programmes take a navigating approach and are usually pre-designed training programmes, which are delivered to participants that individually listen to the training material and are then expected to transfer these into their workplaces to implement them. However, such an approach is less effective at developing cooperative ways of doing leadership, which rely on enabling contexts that allow trust to build and support relationships. More and more, therefore, collaborative leadership development programmes aim to actively relate to the real-time, in-situ actions that generate leadership in actual practice. L-a-PD pays attention to leadership practice in ordinary work and habits and it recognises the role of material aspects in the production of leadership. Raelin recommends action research (2016) as approach to drive L-a-PD. AI is one such approach within action research (Ludema et al., 2003). The concept of AI will be further explored in the next chapter. AI is a key element of the apparatus that was used in this project to carry out L-a-PD.

2.6 Chapter Key Discoveries and Opportunities

This chapter dealt with discovering the theoretical foundations of leadership, which covered four main aspects: an overview of leadership theory, the recent practice turn and its promises and challenges, an overview of e-leadership and related research gaps, and an exploration of L-a-PD. I have highlighted two main gaps in the leadership literature, which I will address in this study. Firstly, our knowledge about how leadership unfolds within day-to-day practice is still limited. Secondly, leadership theories tend to limit themselves to human actors or processes, although non-humans are heavily involved in co-producing leadership. The emerging stream of L-a-P is beginning to address these gaps. Although the L-a-P literature is diverse, common ground on some key aspects of leadership could be identified. Firstly, researchers agree that L-a-P focuses on the everyday and mundane and shares a

basic understanding that practice is situated, social, and relational. Secondly, L-a-P researchers generally recognise the importance of materiality in the shaping of practice. Thirdly, L-a-P scholars focus on leadership as process. However, due to a lack of suitable research methods and difficulties to study practice and processes, empirical contributions remain rare. There are also debates about the philosophical direction and associated with this are different viewpoints on the concept of practice/practices and the role of materiality. Various researchers agree that while a 'practices' viewpoint pays attention to the inter-actions between pre-defined entities, a 'practice' perspective situates leadership in the intra-actional flow of action. Crevani and Endrissat (2016) argue that most L-a-P studies are focusing on practices and thus on the building blocks of organising. Research that focuses on practice is rare. With regards to materiality, some scholars understand materiality and practice as discrete elements that are co-constituted, whereas others position materiality and activity as entangled. In this sense, Friedland (2015, p. 17) points out that "material interplay is a fundamental, processual, and ongoing phenomenon of manifest existence". Following this, the central issue becomes how to approach and address materiality. I argue that adopting an intra-actional process ontology may be helpful to address this issue, because such a position allows researchers to get closer to action as it unfolds in material-discursive processes of leadership. This might be even more relevant in organisational environments, in which geographically dispersed virtual teams are using CT.

This chapter has also explored the phenomenon of e-leadership. I argue that most challenges in virtual team leadership can be pinned down to a lower quality of communication. To address this issue, researchers suggest to improve the technology used, but also to change the way leading is carried out in virtual teams. However, empirical studies in e-leadership research have not provided sufficient answers to the challenges identified, and, despite the novel character of modern CT, researchers tend to stick to traditional self-actional or inter-actional approaches with associated positivisit methodologies. Quite surprisingly, the topic of e-leadership has been neglected by the L-a-P movement, and e-leadership researchers have neglected to focus on the practice of leadership. Thus, there is potential in bringing these together to create new insights that will benefit both streams of research.

It has been identified that an approach of L-a-PD may be helpful to address the research problem of the present study, as it provides a possibility for face-to-face and virtual teams to collaboratively learn new ways of doing leadership work. In such an intervention, the participants will work together to develop new ways of doing leadership together. They engage in a process of wayfinding and learn as they go. Such an approach is useful as in many organisations technology changes, but ways of working and leading do not tend to change. Action research has been recommended as method to drive L-a-PD, and one method within action research is AI, which will be further transformed into an L-a-PD apparatus in the next chapter.

This chapter was introduced by a quotation by Marcel Proust: *"The real voyage of discovery consists not in seeking new landscapes, but in having new eyes".* Related to this, this chapter has shown that changing the perspective (having new eyes) in leadership research away from inter-actional (mechanistic) understandings towards one that emphasises practice, materiality and entanglement may be useful to address the identified gaps as well as the research problem in this study.

3 Dreaming: A Different Perspective on Appreciative Inquiry

In AI language, the following sentence describes what this chapter is about: “When the best of what is has been identified [in the Discovering phase], the mind naturally begins to search beyond this: it begins to envision new possibilities” (Ludema & Fry, 2008, p. 283).

The previous chapter discovered that leadership studies often neglect the day-to-day practice of leadership and they tend to neglect the material aspects of the phenomenon. Although L-a-P aims to address these gaps, empirical studies are rare and views about what constitutes practice and about the role of materiality are fragmented. The previous chapter identified L-a-PD as opportunity to be applied in this study, and action research has been highlighted as suitable method to carry out L-a-PD. This will be further investigated in this chapter, in which I will develop the AI methodology.

The Dreaming phase pays attention to the possibility of what could be and moves beyond the limiting ways people normally feel, see, act or react (Watkins et al., 2015). In this chapter, I will focus on this possibility by demonstrating the enganglement of AI and L-a-P.

The order of the chapter is as follows: In section 3.1 I justify why I chose AI as methodology and describe its key elements. By highlighting the inadequacies within AI research in sections 3.2 and 3.3 and by appreciating recent developments, I build the case for a reconfiguration of AI using agential realism. After introducing agential realism, a diffractive methodology is accomplished that is put to use in an act of diffraction of ‘the between’ of agential realism, L-a-P theory, and AI. Out of this diffraction, in section 3.4, the L-a-PD apparatus emerges; a *material-discursive apparatus of appreciative inquiring*. A summary closes the chapter and provides an outlook into the next chapter.

3.1 Reasons for Using Appreciative Inquiry

AI has been selected as method to develop leadership in the teams for three reasons:

Firstly, AI can be understood as “a more generative form of inquiry than problem solving” (Bushe & Paranjpey, 2014, p. 1). It can be used to improve group performance in cases in which groups are locked in spirals of negation and vengeance (Gergen et al., 2004, pp. 54/55), and where different national cultures are involved (Dreo et al., 2003, p. 80). Related to this, Cooperrider and Whitney argue that “[t]he effect of Appreciative Inquiry is so strong and powerful that it can even transform deficit discourse and negative thinking” (2005, p. 73). In emphasising aspects previously thought to be unsayable, AI is bringing existing relationships to life. It also supports a positive attitude to taking risks and supports the development of new ways to address problems (Watkins et al., 2015). AI, therefore, was an appropriate methodological choice in the given situation, in which the teams struggled to meet targets and frustration was part of the daily experience.

Secondly, AI is an action research method (Boyd & Bright, 2007), and the potential of using action research to study practice (Cooperrider et al., 2008; Reason & Bradbury, 2008; Ivankova, 2015; Reason & Torbert, 2001) has been highlighted by several researchers. Its potential to generate L-a-PD has also been pointed out (Raelin, 2016), as action research integrates inquiry and practice (Cooperrider et al., 2008), which is the main intent of the practice turn (Reason & Torbert, 2001). Action research is “about the improvement of practice, the improvement of the understanding of practice, and the improvement of the situation in which the practice takes place” (Ivankova, 2015, p. 29). The aspect of improving practice and the context in which it takes place is useful in the current study, as the teams are caught in a spiral of negativity and frustration and to support the teams to develop new ways of doing leadership practice. The aspect of improving the understanding of practice is useful as well, due to the ongoing debates about what constitutes practice. An application of AI may therefore help to illuminate how leadership practice emerges in the teams. From this perspective, theory and practice can be understood as part of a synthetic whole, and inquiry is woven into the fabric of everyday practice (Wadsworth, 2010). This contrasts with a traditional understanding of research and

its application as primarily disconnected processes (Reason & Bradbury, 2008). As Lewin (1946, p. 35) notes, “Research that produces nothing but books will not suffice”.

Thirdly, AI shares some characteristics with L-a-P and may therefore be one answer to Cooperrider et al.’s (2008) call to integrate research and practice. L-a-P can be understood as relational, processual (Crevani & Endrissat, 2016; Cunliffe & Hibbert, 2016; Raelin, 2016;), collaborative (Raelin, 2016; Woods, 2016), emergent (Woods, 2016), distributed (Denis et al., 2012), generative (Sergi, 2016; Simpson, 2016), democratic (Woods, 2016), and shared (Carroll, 2016). Similarly, AI is referred to as relational (van der Haar & Hosking, 2004), ongoing and distributed inquiry (Cooperrider, 2013), in which groups are engaged in a collaborative learning process that is generative (Gergen et al, 2004), as it promotes emergent change (Lewis et al., 2016) through the democratic and shared creation of a vision (Cooperrider et al., 2008). Both concepts focus on collaboration, direction setting, and the associated reduction of boundaries. Studying leadership from a practice perspective engages the researcher in the process (Raelin, 2016), which can be achieved by using a participatory AI approach, in which the researcher collaborates with the participants (Cooperrider et al., 2008). Both concepts criticise traditional power relations. With its focus on pluralism and practice, L-a-P encourages “the formation of community within which members through social critique may have a better chance to resist oppression and other forms of inequitable social arrangements compared with conditions of sole individual intervention” (Raelin, 2016, p. 9). AI is capable of highlighting issues of power and can disrupt limiting beliefs and assumptions while supporting critical thinking (Duncan & Ridley-Duff, 2015; Grant & Humphries, 2006). In addition, leadership in the form of generativity is a central part of AI. “Generativity is the ability to challenge the status quo in organizational and social life, to create a sense of possibility, and to thereby open up new repertoires for thought and action” (Zandee & Cooperrider, 2011, p. 4). The sharing of generative ideas in meaning-making conversations is an important source for dialogic change (Bushe & Marshak, 2009, p. 355). Bushe (2013) suggests that generativity is a catalyst for change, and that AI transforms people´s thinking so that new options for decision-making or taking actions become possible. In Raelin’s (2016) book about L-a-P, Gergen and Hersted (2016) link generative choice points in dialogues to leadership. Thus, both L-

a-P and AI seem to be well suited to be used in virtual team environments, in which increasingly collaborative ways of doing leadership are required.

3.2 Appreciative Inquiry and Humanism

The AI principles, as outlined in the Preface, propose that human organising and change are positive, socially interactive processes of discovering and designing positive, guiding visions of the future. These assumptions have wide-ranging consequences for how AI is carried out. I argue that AI is commonly guided by humanist assumptions and dualistic conceptions of separation, which can lead to problems in research and practice.

In this section, I will show that despite a 'critical turn' in AI research, attempts to transcend notions of separation between 'the positive' and 'the negative' are still rare. Moreover, there is still a focus on 'the human' (vs. 'non-human'), despite the turn to practice in the broader organisational literature that promotes a focus on the sociomaterial.

3.2.1 The Focus on Language

Traditionally, AI is grounded in social constructionism (Watkins et al., 2015), which is demonstrated by the constructionist, narrative and poetic principles of AI. This perspective is principally concerned with "explicating the process by which people come to describe, explain, or otherwise account for the world (including themselves) in which they live" (Mele et al., 2016, p. 33) and the relationships of organisational members in the process of meaning-making in social interactions (Gergen, 2009). Dialogue, language, imagination, co-creation, discourse, and meaning-making, are seen as key resources achieved in social interactions and relations (Cooperrider and Whitney, 2011; Gergen et al., 2004). Thus, AI invites research that focuses on the analysis of discourses. Young (2011), for example, argues that "[i]f we make the linguistic turn towards a constructionist view of how language is actively used and how this can impact the way we interpret and thus act in the world (a turn the developers of AI as well as scholars of post modern OD have taken), then a focus on discourse becomes important" (p. 45). Despite some similarities between AI and L-a-P, as discussed in section 3.1, the constructionist focus of AI has largely remained

unchanged and stems from a time when inter-active leader-follower approaches were still understood as radical (Meindl, 1995). This is problematic, because from such a perspective, inquiry is limited to discourse (Barad, 2007). As a result, matter is seen as passive and mechanistic, and such an AI approach is unlikely to be successful when used to facilitate L-a-PD. In order to enable teams to develop new ways of practicing leadership, it requires a posthuman perspective that understands agency to emerge out of the relations between human and non-human actants as they happen in context (Sergi, 2016).

3.2.2 The Focus on The Human

AI promotes a humanist focus as it "posits that human systems move in the direction of the questions they most frequently and authentically ask [...]" (Cooperrider & Godwin, 2012, p. 740). It is also referred to as "a journey during which profound knowledge of a human system at its moments of wonder is uncovered [...]" (Watkins & Mohr, 2001, pp. 14-15). MacKie (2016, p. 30) argues that "the AI process sees strengths identification within individuals as the first stage in organizational development". Many empirical AI contributions grant primacy to individuals and consequently neglect processes, which demonstrates an over-optimistic belief in human agency (Grant & Humphries, 2006). Saenghiran (2013), for example, studied the effect of AI on *individuals'* happiness at work by analysing the positive and negative emotions of the participants. Hart et al. (2008) explored how AI might be conducted to achieve transformative *leader* development and considered ways in which AI can help "build leader capacity in *individuals"* (p. 633, emphasis added). Priest et al. (2013, p. 29, emphasis added), argue that "while an outside facilitator may be a helpful resource for the initial stages of the AI cycle, it really becomes the job of *the leader* to sustain positive change"; and "in the process of constructing what could be the participants are also becoming *leaders* who are able to enact that preferred future". AI has also been related to leadership in that conceptions of leadership as social construction emphasise relational perspectives in which leaders and followers collaborate to generate positive change (Priest et al., 2013). This leader/follower concept, however, is related to the inter-actional understanding of relationships and catches us in a mechanistic worldview. Such a controlled

environment is independent of any wider context of space and time and pretends that the world stands still.

There are a few contributions in AI research that try to overcome these issues by promoting a process perspective. Grant and Humphries (2006) propose that AI research should take an increasingly critical approach to wider societal influences and support the development of a link between AI and critical theory. In their evaluation of AI, Van der Haar and Hosking (2004, p. 120) adopt a different understanding of relating that "assumes relational realities and focuses on relational processes". From such a perspective, people and things are made in relational processes (van der Haar & Hosking, p. 1020) and AI can be understood as an approach to change, which can open up directions - in contrast to other change models which try to close down on one particular construction (p. 1022). This viewpoint theorises AI as methodology that "centres on relational processes as ongoing processes of constructing local realities and relations […] where knowledge and power come to be viewed as local, communal, relational realities of ongoing construction" (Hosking & McNamee, 2006, p. 13). From such a perspective, persons become in relationships (Whitney & Trosten-Bloom, 2010). However, language and human inter-action are still granted primacy, and empirical studies emphasise an entitative perspective and a positivist view of science. This somehow contradicts the main building blocks of AI, because this does not seem to be aligned with a social constructionist perspective. There are also attempts to strengthen the philosophical underpinnings of AI (Duncan & Ridley-Duff, 2015), but these approaches also remain focused on humans.

Thus, conceptions of AI generally place humans as discrete entities above relationships and above other matters. The few exceptions that focus on relationships still focus on humanist processes, creating an artificial hierarchy in which humans reign supreme. Giving primacy to human agency means to represent the human and non-human as distinct elements that cement a nature-culture dichotomy, which may hold research back. AI, understood from this perspective, cannot be recognised as suitable method for studying and developing leadership practice, because "[a] performative position shifts attention to matters of practices/doings/actions" (Barad, 2003, p. 802).

3.2.3 The Focus on The Positive

“Since its inception, AI has often been distinguished by polarities – positive versus negative, strengths versus deficits, life-giving versus deadening, mysteries-to-be-embraced versus problems-to-be-solved” (Fitzgerald et al., 2010, p. 220). After Cooperrider’s and Srivastva`s (1987) original publication on AI, the notion of generativity lost some focus and more attention was given on ‘the positive’ in AI (Fitzgerald et al., 2010). Cooperrider has stated that “we are in great need of a theory of nondeficit positive change” (2017, in Grieten et al., 2018, p.5). AI, for example, has been referred to as “an important precursor of the positive organizational scholarship domain” (Grieten et al., 2018, p. 2). As soon as we start thinking about the positive or the negative we are recruited into taking up an either-or position that fragments an “organic whole into isolated and oppositional parts in which Self and Other are regarded as necessarily locked into a battle to determine dominance and subordinance” (Bartlett, 2004, p. 36), which I argue is contradictory to the emancipatory intent of AI. Overcoming this dualistic thinking may therefore lead to new possibilities in research and practice.

There is an emerging stream of researchers criticising the positivity/negativity dualism. This movement has been referred to as ‘critical turn’ in AI research (Duncan & Ridley-Duff, 2015) and argues that a focus on the positive will invalidate the negative organisational experiences of participants and repress potentially important and meaningful voices (Bushe & Paranjpey, 2014; Bushe & Storch, 2015; Fitzgerald et al. 2010; Miller et al., 2005). “[T]here is a tendency to get stuck in the idea of positivity as something that can be represented by a distinct language; that is, to be positive is to express yourself in a way that generates a personal or collective emotion of being ‘upbeat’, having a ‘good attitude’, and a ‘can do’ frame of mind. This approach to positivity can produce a pretty unhappy organisation, where people feel unable to express what they experience in a language that is comfortable to them” (Bushe & Storch, 2015, p. 112). Encouraging people to share stories and to take an appreciative perspective towards painful experiences might be more generative than those in which nothing painful or difficult is included (Bushe, 2010). Through these criticisms, the importance of generativity has regained attention (Bushe & Paranjpey, 2014) and suggestions for how to ameliorate the concept of positivity have recently emerged by emphasising generativity and AI as an inquiry

into what gives life into social systems (Bushe & Paranjpey, 2014; Bushe & Storch, 2015; Miller et al., 2005). Bushe (2013) argues that paying attention to what is meaningful might be more generative than a focus on the positive. While the meaningful may not always be related to positivity, this opens up alternative ways of appreciating whatever people might find life-giving in their specific circumstances.

Some researchers promote embracing 'the Shadow', which we enter when we talk about something uncomfortable (Fitzgerald et al., 2010). Bushe (2013) postulates that embracing and *appreciating* both the positive and the shadow can support the generativity of AI. Polarised opposites, such as shadow or light, positive or negative, are thus treated as contextualising each other. Johnson (2013) highlights that embracing the shadow needs to be done with "a radically appreciative gaze" (p. 204). Johnson also argues that whatever we usually construct as negative might actually be a relevant source of insight that serves more robust "vocabularies of hope" than might be available in other circumstances (p. 204). However, the positive/negative dualism is still widespread. Just recently, AI has been related to evoking positive emotional states, which "act as a reset button for negative emotions that have outgrown their usefulness" (Lewis et al., 2016, p. 131).

Thus, mainstream AI literature does not tell us much about the shadow sides of AI and emphasises one-sided 'happy endings', although from a practice perspective life goes in any direction (Crevani, 2011), and leadership includes potentially diverging processes and situations of unresolved conflicts and debates (Crevani et al., 2010). To use AI as method for L-a-PD, it is therefore important to appreciate the current debates that emphasise generativity and appreciation instead of the positive. This is also an answer to the call for a nonpolarising language to talk about AI (Bushe, 2012) and for a broader scope of appreciation in AI (Bushe, 2010; 2012).

3.3 The Inadequacies of an Inter-actional Way of Inquiry

In this section I will explain and critically discuss the inter-actional way of inquiry and introduce the mechanistic concept of inter-vention. I will use this as foundation to show how the humanist focus in AI can be overcome by transitioning to *inquiring as process of intra-vening*, which embraces the notion of intra-action.

3.3.1 The Static Concepts of Inquiry, Inter-action and Inter-vention

Most AI contributions embrace a binary perspective and focus on individuals, language and the positive. AI studies emphasise inter-actional perspectives, which assume that the world is made up of separate entities with particular properties (Barad, 2007). I argue that these studies lag behind developments in the wider social sciences, in which an increasing number of researchers have started to embrace a turn to practice.

This worldview is related to the concept of inquiry as inter-action (Simpson, 2016). From such a perspective, reality comprises identifiably discrete entities, which inter-act, produce certain outcomes, but remain unchanged (Simpson, 2016). With such a focus on the human and language, matter is inaccessible, and inquiry is limited to discourse (Barad, 2007). Such an approach is unlikely to be successful in allowing teams to develop new ways of doing leadership practice as this requires a perspective that understands agency to emerge "out of the associations between human and non-human actors as they happen in context" (Sergi, 2016, p. 117).

Based on Simpson's (2016) differentiation of leadership into inter-actional and trans-actional, I relate inter-actional conceptualisations of AI to the concept of inter-vention. Inter-vention means to 'come between' (based on the original latin word 'intervenire') two distinct points in time to interfere *with words* to achieve a *positive* result. Inter-vention is thus a conscious and polarising undertaking, which promotes an evolution of positive imagery to change social systems for the better (Watkins et al., 2015), and which invalidates the negative organisational experiences of participants and represses potential important and meaningful aspects (Bushe, 2012). Instead of appreciating what is meaningful from a holistic lens, the concept is separating positive from negative, strengths from weaknesses, humans from non-humans, language from matter. AI researchers and practitioners who inter-vene, see AI as "a process that helps individuals to establish a discourse based on positivity" (Day & Holladay, 2012, p. 1125). They use AI to investigate the transformation of individual leaders and to develop "individual abilities associated with the formal role" (Hart et al., 2008, p. 632). They are interested in the outcomes of the inter-vention, and not the process, and embrace cause-and-effect chains, "using AI to generate learning ideals and measuring success on a unique set of learning outcomes"

(Conklin & Hart, 2009, p. 99). They also highlight the importance of researcher objectivity (Saretsky, 2013), which makes them sometimes fail to consider the role of the AI facilitator/researcher (Conklin & Hart, 2009), although AI is a collaborative undertaking of researcher and participants (Cooperrider et al., 2008). Inter-action is related to a decontextualisation of lived experience (Simpson, 2016) and "offers no adequate means of engaging with entities if the nature of their being is constantly changing" (p. 162). I argue, however, that it is impossible that team members remain unchanged during an AI.

Thus, in order to use AI to inquire into and develop leadership practice, an inter-actional perspective seems to be unsuitable.

3.3.2 Moving Beyond Dualisms

To transcend those dualisms in AI, it may be helpful to consider a posthumanist worldview, which re-visions our humanist assumptions (Barad, 2007). Shotter compares posthumanism to a shift that is "re-situating ourselves – as spontaneously responsive, moving, embodied living beings – within a reality of continuously intermingling, flowing lines or strands of unfolding, agential activity, in which nothing (no thing) exists in separation from anything else, a reality within which we are immersed both as participant agencies and to which we also owe significant aspects of our own natures" (2014, p. 306). Shotter refers to Karen Barad's posthumanist concept of agential realism, which presents "a performative theory of the irreducible entanglement of matter and discourse" (Yoshizawa, 2014, p. ii).

To overcome the dominance of social constructionism in AI, it may be helpful to understand social constructionism and agential realism as fluid concepts that are "two different embodied voices in a continuous, unending dialogical and thus continually creative intra-relation with each other" (Shotter, 2014, p. 319). By "giving names (substantive nouns) to agential realism and social constructionism it is only too easy to think of them as separate, well-boundaried things (as rule governed "game"-like things) whose properties need to be, and can be, well defined (in text and methods books). But to the extent that they exist as nameable entities at all – as prospective entities, still open to further development – they come into existence, and continue to come into existence, in the course of our performing actions out in

the world in relation to certain orienting attitudes, in relation to our different acquired ways of relating ourselves to our surroundings" (p. 319).

This could open up the space for crossing disciplinary boundaries and to move towards an intra-actional understanding of AI. An agential realist perspective may also lead to further progress in the fragmented L-a-P field. I will therefore explore Barad`s concept of agential realism further in the next sections.

3.4 The Apparatus of Appreciative Inquiring

In the previous sections I have shown that within both leadership and AI research there is an emphasis on linguistic over material aspects, and a centrality of the human in the process. I have highlighted the flaws of this widespread humanist understanding within AI, which makes matter inaccessible. I have justified my decision to apply AI as a method to facilitate L-a-PD in the project teams and have argued that these inter-actional tendencies need to be overcome to make the concept suitable for L-a-PD. Agential realism seeks to undermine the traditional boundaries between the human and the technological and thus is not centred in Cartesian dualism (Barad, 2007). I argue that this concept is therefore particularly well suited to overcome the inter-actional perspectives in the three concepts AI, e-leadership and L-a-P.

In the following sections, I will therefore reconceptualise the inter-actional way of carrying out AI as intra-acting apparatus of appreciative inquiring by using Karen Barad´s agential realism.

3.4.1 How Apparatuses Produce Phenomena

This section explains the terms apparatus and phenomenon and also the implications for leadership. These aspects are important to understand before I design the apparatus of appreciative inquiring later in this chapter.

While many performative approaches in leadership research focus on the language, Barad argues that: "Performativity properly construed, is not an invitation to turn everything (including material bodies) into words; on the contrary, performativity is precisely a contestation of the excessive power granted to language to determine

what is real" (2007, p. 133). Rather, agential realism "calls into question the givenness of differential categories of human and non-human, examining practices through which these differential boundaries are stabilized and destabilized" (Barad, 2007, p. 66).

Agential realism understands human practices as a subcategory of the broader practices of the universe agentially intra-acting with itself. To indicate and uncover specific agencies enacted in practice, Barad refers to "practices or apparatuses of bodily production" (2007, p. 140). Agential realism claims that practice is enacted by apparatuses. The apparatus may even be understood as practice itself. In Barad's usage, apparatuses are not "static arrangements in the world, but […] dynamic (re)configurings of the world" (Barad, 2003, p. 816), and thereby both parts of phenomena, *and phenomena themselves*. Agentially produced phenomena are the ontological primary from an agential realist point of view. Two examples that materialise and de-materialise through agential intra-actions (Barad, 2007) are time and space, which are emergent (Moreva et al., 2014). More clearly, Barad postulates that "*phenomena are the ontological inseparability of agentially intra-acting 'components*'" (italics in original, pp. 308-309).

At the workplace, people are entangled in the material-discursive apparatuses of an organisation. Apparatuses are relational systems that comprise nodes that are produced through entanglements of human and non-human phenomena (Barad, 2007). In agential realism, the concept of apparatuses is also referred to through the concept of "material arrangements" (Barad, 2007, p. 142). In other words: material objects such as tools or laboratory equipment and human subjects might be positioned in a specific arrangement in order to measure (or produce) a particular phenomenon.

Barad explains: "[T]hat the apparatuses of bodily production (which are themselves phenomena) are (also) part of the phenomena they produce" (2003, p. 826). Thus, through an agential realist lens that which materialises is both a phenomenon and agential. This reference points to the "discontinuity at the heart of matter itself" (Barad, 2010, pp. 248-249) where determinate phenomena emerge in intra-actions. Thus, apparatuses used in scientific experiments are always part of the entanglement of the production of the phenomena they aim to measure or produce. Thus, both concepts of agency and practice are central elements of phenomena.

Phenomena are agential, as “agency is a matter of changes in the apparatuses of bodily production” (2003, p. 826) and relates to specific material-discursive practices (Barad, 2007, p. 54), which are understood as being generative rather than only descriptive. One of the key claims of agential realism is that matter is always discursive, which means that “material phenomena are inseparable from the apparatuses of bodily production; matter emerges out of, and includes as part of its being, the ongoing reconfiguring of boundaries” (Barad, 2003, p. 822). Consequently, discursive practices are also always already material and referred to as the “ongoing material (re)configurings of the world” (p. 822).

This has three major consequences for understanding both leadership and AI, which are as follows:

1) Leadership, from this perspective, is understood as phenomenon, which is mobilised through the intra-activity between human and non-human phenomena.
2) Leadership, as phenomenon, can only be understood in the context of the apparatus of appreciative inquiring, as apparatuses are always part of the phenomena they produce.
3) Phenomena manifest the complexity of intra-action, which is too complex to understand in its entirety. The complex and fluid phenomenon therefore gets reduced into ephemeral entities through apparatuses that make it possible to study.

These aspects show why it is so important to define the apparatus first. In order to better understand phenomena and how to understand leadership as phenomenon, it is helpful to discuss some of the key concepts within agential realism.

In making my case for the high value of Barad´s work for leadership research, I am faced with the challenge of a balancing act between including too many complex aspects of her work and the risk of leaving out crucial aspects to make it more understandable for the reader. I have already provided an overview of leadership and AI literatures, and I will now introduce the key terms I consider useful for explaining the nature of my concept of apparatus of appreciative inquiring, which is entangled with leadership. In the next three sections, therefore, I will explain the key terms that relate to the three consequences listed above.

3.4.2 Intra-actions and Entanglements

The concept of intra-action has already been introduced in section 2.2.3. It is a radical concept that assumes that the nature of related ‘things’ cannot be separated from the processes through which they come into being. Thus, there are no a priori boundaries between entities. Agential realism, however, reworks how we can understand the nature of these boundaries. “Boundaries are created, sustained and eroded through processes of intra-action”, and “the boundaries that define materially different ‘individual’ entities are made inside these processes of intra-action” (Visser & Davies, 2021, p. 4). Boundaries can only “reflect entities agential, never ontological, separability” (p. 4), acting as an agential cut to enact a temporary resolution of the ontological inseparability within phenomena. The concept therefore widens the scope of who participates in the world´s becoming. Beyond decentering the human, agential realism actively challenges understandings of what it means to be a human. “[P]eople, like all other worldly phenomena are co-constituted through a milieu of known and unknowable intra-actions” (p. 7). Therefore, agential realism demands an extended focus on all modes of matter in relation.

Intra-action comes with two key challenges to researchers:

Firstly, agency cannot be attributed just to humans or to separate non-human entities, as these “do not preexist as such” (Barad, 2007, p. 179). Instead of separately pre-existing ‘things’, there for us to inter-act with, Barad highlights the “production of material bodies”, through “agential intra-acting” (Barad, 2003, p. 814). Barad rejects the idea of “individually determinate entities with inherent properties” (Barad, 2003, p. 812), and claims that this ‘thingification’, i.e. our seeing and speaking of ‘entities and ‘relata’ instead of relations, distorts our understanding of the world and ourselves, and of how we are related.

Secondly, “agency is therefore not a correlate of intentionality. An intra-active approach assumes that no being is ever alone and that therefore no being ever acts alone” (Verlie, 2020, p. 1272). Rather, everything is constantly intra-acting with an ‘entanglement’ of human and non-human processes (Barad, 2007). As Barad points out, the issue is “the framing of agency as a localizable attribution” (2007, p. 216). Barad coins the term intra-action to refer to “the mutual constitution of entangled

agencies […] recogniz[ing] that distinct agencies do not precede, but emerge through, their intra-action" (Barad, 2007, p. 33).

The concept of entanglement may be quite hard to grasp when coming across it initially, which is why I have chosen to introduce it by using the metaphor of Indra´s Net (see Figure 3), a Hinduist concept. I use this metaphor as Cooperrider has already used it to describe AI by comparing organisations with networks. "The Jewel Net of Indra is like an infinite set of glittering points of light. In Indra's Net, as in the Appreciative Inquiry process itself, the myriad reflections within each glittering jewel are the essence of the jewel (organization) itself, without which it does not exist. […] The Net is an ancient image of oneness and diversity. Indra's Net is a web of relationships that sparkle, nourish, and amplify […] as does the Appreciative Inquiry approach to embracing and leading organizational change" (Cooperrider, 2008, p. xxvi). In mythology, Indra's Net hung in the palace of the God Indra, a generative representation of the structure of the universe (Kac, 2007). It can be imagined as an enormous net stretching across the universe in all directions. At each node, a jewel is reflecting every other jewel in the net. Each and all exist only in their mutuality and there is no single point from where it all arises. They are all entangled. In other words, all phenomena are identifiable with the whole, but not in isolation, just as the phenomena that constitute a particular phenomenon are identifiable with it (Kaza, 2004). There is nothing outside the net and nothing that does not reverberate its presence throughout the net. Thus, there is no solid or fixed reality/universe. At a lower level of consciousness Indra`s Net is a concept I use in this thesis. At a higher level we are (part of) it. As Barad makes explicit, we are part of a field of reality where everything is intertwined with everything else.

Figure 3: Illustration of Indra's Net (Source: Levgen, 2020)

I argue that from an agential realist perspective, each node of the net can be understood as an individual/team/organisation in the sense of intra-actor. When any element of the individual/team/organisation is 'touched', all other elements are affected. This speaks to the hidden entanglement of the universe and makes the concept helpful to overcome dualities. These emergent actants working together can include humans (e.g. researcher, manager, machine operator), the presence or absence of non-human objects (e.g. furniture or technology), and other non-physical phenomena (e.g. thoughts, ideas, concepts). It is the entanglement itself that is the point. Space, time and matter do not independently exist, but rather emerge simultaneously in the shape of spacetimemattering (Barad, 2007). Barad postulates that matter does not possess agency. Rather, matter can be understood as "a congealing of agency" (2007, p. 151).

Intra-action and entanglement are fundamental to the world´s becoming but cannot be understood in their entirety. However, to make this process more understandable, we create boundaries through agential cuts and processes of agential cutting.

3.4.3 Agency and Agential Cutting

The intention of the concept of the agential cut is to allow us to understand and interrogage entities as separate without losing sight of the idea that this separation is not ontologically real. Agential realism suggests that the separation between different entities is only possible within the cut, but that this isolation does not pre-exist or remain after the agential cut (Visser & Davies, 2021).

Agential realism is particularly suitable to explore the concept of agency, which is closely related to processes of leadership, especially when studying leadership from a practice perspective (Raelin, 2016). Intra-action assumes matter "never sits still" (2007, p. 170) and is continuously reconfiguring/reconfigured. Barad postulates that: "*[A]gency is a matter of intra-acting; it is an enactment, not something that someone or something has.* It cannot be designated as an attribute of subjects or objects […] It is not an attribute whatsoever. *Agency is 'doing' or 'being' in its intra-activity. It is the enactment of iterative changes to particular practices*" (italics in original, 2007, p. 178). This claim reconceptualises agency as enactment in practice. Hence, any materialisation is accomplished through the practice of intra-action, leading to the differential expression of phenomena. Whereas inter-action relates to the contact between two or more independently existing entities that have the attribute of agency, intra-action refers to "the exteriority-within-phenomena" (Barad, 2007, p. 140) where 'cutup' elements are yet always constitutive of phenomena. Barad has also coined the term 'entangled agency', which is a continuous practice involving dynamic entanglements of humans and non-humans, through which these receive their particular boundaries and properties. Barad calls this boundary-drawing practice also 'agential cutting', which is an act that contingently separates out distinct entities and meanings within the parameters of an experiment, context, situation, or phenomenon.

The agency required to conduct such an action is not something anyone or anything has or possesses. It is something that happens. Thus, agential cuts are not produced by individuals, but through the wider "material arrangements of which we are a part" (Barad, 2007, p. 178). Agential cutting is intra-active, because the act of cutting produces boundaries of entities that only emerge through their relation. Barad explains the agential cut as "[a] local resolution within the phenomena of the inherent ontological indeterminacy" (2003, p. 815). Put differently, agential cutting is a

material-discursive practice where boundaries of the entangled phenomena are remade. To understand this concept better, it may be useful to take a look at the concept of ‘intra-actor’. The term ‘intra-actor’ is useful as a counter-concept to individual, to express the understanding that the ontological primary is the relation. The primary is the intra-actor, always already intra-actively related. The individuals cannot meaningfully be said to exist independently of the relation. And this relatedness is universal; it is not the case that human beings alone through their material-discursive practices lend existence and essence to all there is. In the case of this study, ‘entities’, or better intra-actors, may include team members, office furniture, or communication technology. Each of these can be understood as a phenomenon, which emerges through intra-actions in which all these seeming entities influence and inform each other and are entangled in complex ways with each other. What is commonly regarded as ‘boundaries’ (such as between chair and body) and ‘entities’ are performatively produced in these intra-actions. These are therefore not pre-existing but enacted through the material-discursive practice of agential cutting. The practice of agential cutting needs to be distinguished from the enacted agential cut.

The cut is a ‘temporarily constructed distinction’ between agencies (Lenz Taguchi 2010) that is produced through the act of observation. This produced cut, or boundary, is what is required to study a phenomenon. The primary unit of analysis within agential realism is that which is included in the ‘cut’ and that which is excluded. These are the aspects that produce difference. From an agential realist perspective, however, these cuts should be understood as fluid movements, a cutting together-apart, in which boundaries are moved. This is different to a Cartesian cut, which leads to binary partings (Barad, 2007).

From this perspective, we are not outside anything. We are the effect of the agential cut and it is the universe that carries out the cutting. We can influence *how* the cut is enacted, but we cannot fully control it. For example, in an organisation, we may convince the machine operators, but we may not convince the senior management team. The cut, in this example can be found in the (re)configuration of the boundary between operators and senior managers. Attempts to intentionally move the boundaries require the involvement of a wider set of material-discursive agencies

and cannot be determined in advance. We are part of the apparatus through which the cutting is enacted.

3.4.4 The Concept of Diffraction

Another useful concept within agential realism is diffraction. Karen Barad (2007) compares the two optical metaphors reflection and diffraction. Both of these concepts describe how waves behave (such as light, sound, or water) when they encounter a boundary. In this section, I will discuss both concepts and how they differ as methods of inquiry.

3.4.4.1 Reflection as a Metaphor for Inquiry

In the context of physics, when waves bounce off an obstacle, we talk about reflection. Reflection as a metaphor for inquiry and the methodological principles of reflection have been criticised as reflection “displaces the same elsewhere” (Haraway, 1997, p. 16) and “remains caught up in sameness because of its mirroring of fixed positions” (2016). A reflective perspective assumes the world is composed of individuals, such as leaders and followers, and things with defined boundaries and properties which relate or inter-act with each other (Barad, 2007). This representational perspective sees elements of reality as fixed, such as context or ‘entities’ in the process (Simpson, 2009). Barad (2007) argues the physical act of reflecting merely shines back what is being reflected upon. In that sense, when we reflect on AI or leadership, we are merely seeing what it is we aim to reflect, as the emphasis is on sameness. Consequently, this limits innovation and lacks generativity. Yet, organisations are full of different perspectives and a reflective viewpoint limits our focus.

Cooperrider uses the metaphor of reflection when he refers to the concepts of entanglement and Indra´s Net to describe AI. By arguing that “[…] the myriad reflections within each glittering jewel are the essence of the jewel […]”, he presents AI from a reflective and thus representationalist viewpoint. Thus, reflection as a metaphor for inquiry may be understood as a mirroring of reality that involves extracting objective representations from the world (Barad, 2007). In doing this, he limits his perspective only to the reflective characteristics of light. Reflections reinforce a concept of “difference premised on the binary thinking [that] has been

instrumental to the workings of power" (Barad, 2014, p. 170). In AI, for example, participants "reflect on interview highlights" (Cooperrider & Whitney, 2005, p. 48) and high point experiences (Ludema et al., 2003, p. 61) in the discovery phase, and sometimes also "reflect on a focal question" (Whitney & Trosten-Bloom, 2010, p. 186) to begin the dream phase. AI has even been suggested to be an approach that sparks reflection processes (Kaplan, 2014). Such a detached understanding of reflection can be problematic, as we are already part of the daily routines and the action. I argue that one reason for the abundance of inter-actional studies and the struggle to advance AI, L-a-P and e-leadership further may be a focus on reflection in the relevant literature. I therefore argue that an alternative concept needs to be used to close the gaps in the literature and to develop the apparatus of appreciative inquiring. In the next sections, I discuss the concept of diffraction as alternative to reflection.

3.4.4.2 Introduction to Diffraction

The concept of diffraction, within the context of physics, describes the bending and spreading of waves as they encounter a barrier or an opening. Barad describes diffraction as an optical phenomenon that refers to the way waves combine and interfere with each other when they overlap and produce new patterns. Diffraction, as a metaphor for inquiry, therefore relates to attending to difference, to patterns of interference, and the effects of difference-making practices. Diffraction generates something ontologically new. Karen Barad offers diffraction as alternative metaphor to reflection to argue for producing difference rather than trying to accurately reflect what's 'out there' as something separate from the research process (Barad, 2007). Barad (2007) presents diffraction as a concept to overcome dualities and humanist, individualist and representational perspectives. It therefore seems to be well-suited to be used in this study, in which the humanist and inter-actional focus within L-a-P, e-leadership and AI research needs to be overcome. Haraway (1997, p. 14) highlights diffraction as a critical method "where interference patterns can make a difference in how meanings are made and lived".

A visual example of diffraction is the visible pattern that water waves create when they rush through an opening in a breakwater and the ripples of several sources overlap. When these waves meet and overlap, their boundaries are reconfigured.

Figure 4 shows an example of ocean waves. If we look at the image, what stands out is the visual pattern the waves create after they have moved through the openings.

Figure 4: Diffraction of Ocean Waves
(Source: CK-12 Foundation, 2013)

The two areas within the red circles in Figure 4 are showing the entangled effects of diffraction. This is where two or more sources are intersecting, or are juxtaposed, and the diffraction patterns highlight the differences between these patterns. Diffraction is not shown by the nicely curved single source radial waves; it is a matter of difference. In this image various intra-actors, such as the rocks, the water depth, and the wind, together with other factors, form the apparatus that produces the diffractive differences that reveal previously unavailable information. Our eye contrasts the undifferentiated swells of the open ocean with the tightly defined, regular pattern generated as the waves pass between the rock formation. This diffractive process creates unexpected patterns that are generated when wave movements intersect and become entangled. These diffractive patterns are always in movement, and they are “patterns of difference that make a difference” (Barad, 2007, p. 72).

It is important to point out that we can only see the differences of the water and the stones when they are in relation to each other, i.e. when the ripple appears. This makes diffraction so useful for studying materialities, because the process of

diffraction uncovers the ways in which materialities unfold as differentiated events. It reveals how they come together in relation to each other, and this process includes the materiality of the rocks, the water, the wind and other factors.

3.4.4.3 Diffration as Inquiry Method

According to Barad (2007) the metaphor for diffraction can also be extended methodologically. “While reflection has been used as a methodological tool by scholars relying on representationalism, there are good reasons to think that diffraction may serve as a productive model for thinking about nonrepresentationalist methodological approaches” (Barad, 2007, p. 88). Through diffractive methods, Barad (2007, p. 88) intends to displace reflection as a dominant model of inquiry. She states: “[…] my aim is to disrupt the widespread reliance on an existing optical metaphor – namely reflection – that is set up to look for homologies and analogies between separate entities. By contrast, diffraction, as I argue, does not concern homologies but attends to specific material entanglements”.

Barad points out that diffraction is a metaphor to describe a methodological approach “of reading insights through one another in attending to and responding to the details and specificities of relations of difference and how they matter” (Barad, 2007, p. 71). Thus, doing research from such a perspective differs from traditional research. By attending to diffractive patterns of difference it is possible to focus on what the differences are, how they matter, and for what and for whom, attending to the relational nature of difference (Barad, 2007). In this thesis I draw attention to the patterns of differences in the leadership process and highlight how those differences materialise through practices.

Diffraction patterns can be traced back to intra-actions and interferences (which includes practices) from which phenomena emerge. Such an approach suggests individuals, words and things are mutually constituting and interwoven in practice from the beginning. The phenomena created in the diffraction process are only temporary though, as “the boundaries that constitute things as separate and different are treated not as pre-given, but as enacted and practices of boundary-making and the enactment of difference are inevitably political” (Suchman, 2005, p. 6). Researchers who refer to Barad oftentimes apply diffractive analysis to see “how something different comes to matter” (Davies, 2014, p. 734). A diffractive analysis

approaches data from multiple angles. Diffraction has the potential to generate new methodological openings. Such potential also arises because agential realism understands data as agential and temporally disruptive. To approach one`s research through an agential realist methodology means not fixing the identities of subjects and objects in advance (Barad, 2007. p. 30). This allows the researcher to read “insights through another in ways that help illuminate differences as they emerge”, including those from “one area of study through another”. Given this study`s reach across different disciplines, diffraction may provide a helpful methodological support for establishing linkages among them at the same time as it seeks to be consistent with the onto-epistemological foothold.

Diffraction, therefore, as a metaphor for inquiry involves paying close attention to difference, to patterns of interference, and the effects of difference-producing practices. With regards to the example shown in Figure 4, one might therefore say that the objective of a researcher is to understand (Cidell, 2017):

(a) the water waves that are being diffracted,

(b) the rocks, and other objects contributing to the diffracting, and

(c) the pattern of diffracted waves that results, also visible on the coastline.

When using diffractive methods, the following question should be asked: ‘how are differences made, and how do they matter?’ To use the example shown in Figure 4 once more, it is therefore important to understand how the rocks change the wave patterns. A different rock formation, for example, produces different diffraction patterns. In an organisation, for example, different technologies would also produce different diffraction patterns. The diffraction pattern produced by the rock formation also influences the coastline, and the waves influence the rocks, which are altered through deposition and erosion. Thus, the rocks diffract the effects of the phenomenon with which they intra-act into particular patterns that one can then analyse. Barad´s concept of diffraction is therefore useful for tracing how and which differences are produced, and what the performative effects of those are. Her concept draws attention to the production of boundaries, which are perpetually enacted through intra-active processes. In contrast to understanding observable phenomena as fixed bounded entities that reflect reality, diffraction provides a way of understanding them as passing moments of the processual materialisation of reality.

Diffraction should therefore also be well suited to analyse the difference that moments of leadership practice make. I suggest that in tracing the creation of differences through diffractive patterns, and interrogating which differences are made to matter, it is possible to see how leadership works and how it transforms.

Although well-designed leadership models convey a certain logical esthetic, once leadership leaves theory and is applied in practice, the messiness begins. Therefore, to expand leadership analysis through critically theorised methods of diffraction might lead researchers and practitioners to understand the effects of leadership differently. This might ultimately lead to better leadership, if, to use the above metaphor, the objects doing the diffracting, and consequently the apparatus, can be transformed. As highlighted above, different rock formations will lead to different diffraction patterns, and these patterns reveal the phenomenon. Thus, to recreate the phenomenon of leadership, it may be useful to focus on these objects first. It is important to point out that these objects, or in this example the rock formations, are not fixed at all. While they seem fixed, the water is changing them. As Barad argues, matter within agential realism is viewed as another ongoing aspect in the process of intra-action. ““Matter” does not refer to an inherent, fixed property of abstract, independently existing objects; rather, “matter” refers to phenomena in their ongoing materialization*”* (Barad, 2007, p. 151).

My objective is not to argue that diffraction is ‘better’ than reflection as this would reinforce the binaries that should be overcome. However, as there is light in dark and dark in light (Barad, 2014), elements of diffraction can be found in reflection (Spector, 2015), and facets of reflection can be identified in diffraction. As Bozalek and Zembylas (2017) postulate, “[…] if we want to be fair to the theoretical and methodological developments that have been made over the years, we might need to acknowledge that the ‘entanglement’ of reflexivity and diffraction is one that includes continuities and breaks rather than a ‘story’ of one vs. the other” (p. 117-118). I argue that diffraction and reflection constitute each other. While diffraction attends to differences and movement, reflection represents some form of stability. I agree with Friedland (2015) that reflexivity is also important as it allows for time to think and reflect on ideas and allows that thought processes uncover unquestioned assumptions. Reflexivity, within this study, includes challenging assumptions, the creation of various explanations for relevant phenomena, and a focus on different

viewpoints I take. In addition to this, it is also important to be attentive to diffraction. This involves paying attention to difference and trying to get to an understanding of how difference is produced. I therefore take the reflexive position that my physical presence and thought processes are apparatuses themselves, which influence this study in specific ways and enable me to understand situations in new ways to uncover something different and unexplored. In addition, I take the diffractive position by paying close attention to differences, both empirical and those identified in the literature, by overlaying them, and reading them through one another, which leads to new insights (Friedland, 2015). In this study, I apply the concept of diffraction several times. In this section I use the method and metaphor of diffraction to achieve new insights by understanding AI, L-a-P and e-leadership through one another. As Barad argues, diffraction is intended to produce new patterns of thinking-being by reading texts from contrasting traditions through each other, generatively producing new insights from the resulting intervolvement.

3.4.5 Provocative Propositions

I will now present provocative propositions and suggest how AI and leadership can be developed further by applying the concept of diffraction. Provocative propositions are statements that connect the best of ‘what is’ and ‘what might be’ and that are part of the AI process. These are provocative to the extent that they extend the realm of the status quo, question general assumptions or routines, and help develop desired futures (Cooperrider et al., 2008).

3.4.5.1 Reformulating Leadership as Diffractive Practice

The first provocative proposition refers to how leadership can be understood as diffractive practice and how leadership relates to the concept of agential cutting. Crevani et al. (2010) explain that the process of redirecting the flow of action is the core of leadership work. In this process, boundaries are produced. It therefore can be argued that the process of agential cutting, which is a boundary-making practice, is also redirecting the flow of practice: the cutting produces “determinate boundaries and properties of ‘entities’ within phenomena” (Barad, 2007, p. 148). To be more specific, the process of agential cutting is performing phenomena by diffracting different types of agencies (Barad, 2007).

To make the relation between leading, agential cutting and diffracting clearer, I will provide the following explanation: “Diffraction involves a change in direction of waves as they pass through an opening or around a barrier in their path” (Martz et al., 2017, p. 395). The apparatus, including the objects doing the diffracting, such as rock formations in water, influence how the redirecting takes place and as diffracted waves meet and intersect, new and unexpected patterns are generated. Depending on how the waves pass through or around the rock formation, depending on the ongoing intra-actions, life could go in any direction. Diffraction therefore is an open-ended process of producing direction, because as the wave travels through the opening, while it is diffracted, it is also redirected and new patterns are generated. Taking this further, we can, with the help of Crevani et al. (2010) identify the existence of leadership in these diffractive events where direction, co-orientaton, and new spaces of action are created. In these events, possibilities are realised through agential cutting. Raelin (2016) argues that leadership often takes place during moments of crisis or indeterminacy, for example when there is insufficient knowledge about what to do next. Raelin argues that in these moments of indeterminacy, an initiative may spur other members of the group to demonstrate ‘their own way out’ (through the opening). Without stating this explicitly, Raelin refers to the performing of the cut, which resolves indeterminacy and redirects. As people build upon each other’s moves, a collaborative endeavor might arise, which re-orients the practice towards a resolution. Leadership can therefore be found in moments of agential cutting, in reading the subtle differences, which resolve indeterminacy by reorienting the flow of practice. Thus, leadership can be understood as a practice of diffraction that produces situated interferences and otherness. When it comes to analysing the phenomenon of leadership in this study, it is therefore important to focus on these diffractive processes, in which differences are made.

Out of this, leadership is depicted as a diffractive practice that reworks organisational practice by producing direction.

I argue that as in the modern theory of light that diffraction patterns play a crucial role in generating, leadership can be understood as particle (a leadership moment, an action space of possibilities, an agential cut), but also as perpetually moving wave of relations and repetitions that performs the agential cutting and leads to a collapse of a superposition of possibilities into particular agential cuts. Leadership can therefore

be understood as both process and temporarily and seemingly static expression of a diffractive process.

This matters in crucial ways to the leadership and AI literature, because it unsettles the notions of individuals, on which approaches are so often based. Diffractive iteration instead offers a wave-like definition of both subject and object as intra-actors.

3.4.5.2 Reformulating AI as Diffractive Method

In this section, I will reformulate AI as apparatus of appreciative inquiring. I will start with the 5D process. I will argue that AI, with the help of agential realism, can be understood as material-discursive practice that is composed of five different and overlapping waves of engagement: Defining, Discovering, Dreaming, Designing, and Delivering. Traditionally, outside of AI, the procedure for dealing with an issue in an organisation would begin with identifying a particular issue, analysing the source, finding a cure for it and putting into place a corrective plan of action. This is also how we would traditionally have approached issues at W-Tech. Instead of searching for generative aspects that may enable a situation to progress, the focus would be on failure and problems. The main flaw of this approach is that *reflecting* on problems typically amplifies them, which can have a number of implications, by eroding the energy and motivation of those involved (Watkins et al., 2015).

However, while the 5D process is central to discovering and growing the positive core of organisations rather than simply trying to reduce the presence and impact of problems, many AI researchers and practitioners also approach the concept from a reflective/representationalist point of view. To fully appreciate the potential of the 5D process and to reformulate AI as apparatus of appreciative inquiring, I argue that the 5D process itself can be understood as material-discursive practice of leading. I will explain this further below.

Leading is a practice that emerges from practical coping actions (Chia and Holt, 2016; Raelin, 2018), which influence each other, just like ocean waves, and cumulatively and dynamically lead to unexpected consequences. Such a perspective assumes that knowledge is formed in the process, along paths of movement, similar to a wayfarer who negotiates and improvises along the journey.

Such coping actions are material-discursive and “enact what matters and what is excluded from mattering” (Barad 2007, p. 148). Inspite of its rather complex definition, a diffraction apparatus enacting such practice could be a simple question that pinpoints to one aspect instead of another. Another example is a camera that frames only a small aspect of what is positioned in front of it. The initial direction of AI is set in the beginning, in the Defining phase, by asking appreciative questions.

In the Defining phase, the affirmative theme is defined, and the focus of the inquiry is clarified. At this stage, the terrain to be navigated cannot be surveyed in advance, because the team is in a phase of uncertainty and the organisation is entangled with its environment, and both are perpetually shifting (Chia, 2017). Therefore, only the initial direction can be set.

In the following phases, leading emerges and materialises through instances of seemingly insignificant and mundane practical coping action (Chia & Holt, 2009). These actions contribute in an iterative way to the production of direction, which is the core of leadership work (Crevani et al., 2010). Each purposive coping action by itself may seem to have a potentially limited effect. However, some coping actions interfere with each other, just like interfering waves, to produce unexpected differences that redirect the flow of action. This conceptualisation of organisational life as ongoing practical coping, may be familiar to many managers even though it conflicts with much of managerial talk that puts a focus on decisiveness and clarity of action. This process can also be understood as “practice-driven, sensory-based form of learning that allows for constant searching, adjustments, reconfiguration of responses and re-educaton of attention to emergent issues at hand” (Chia, 2017, p. 114). Such a collaborative learning process (Raelin, 2016) seems suitable to allow learners to review and renew their understanding of leadership (Denyer & Turnbull James, 2016) in an L-a-PD process.

Chia calls this a process of wayfinding; a process, in which only the initial direction can be set (Ingold, 2000). Wayfinding (Chia and Holt, 2009, p. 159-179; Ingold, 2000) entails actors` exploratory actions: “feel(ing) their way through a world that is itself in motion, continually coming into being through the combined action of human and non-human agencies” (Ingold, 2000, p. 155). The 5D process can therefore be understood as ‘learning as we go’ wayfinding approach, in which strategic coherence can be located in the practical coping actions taken to address the issues faced in

situ. The focus of the team shifts in the different phases. The second phase of Discovering “implies the real possibilities for surprises, fortuitous discoveries and the uncovering of hidden potentialities that are associated with an opportunity-seeking orientation” (p. 115). In this phase, the team “relies primarily on its repertoire of practices generated from past experiences, its refined sensitivities and on habituated ways of responding to tentatively negotiate its way through an as-yet uncharted terrain” (Chia, 2017, p. 115).

In the Dreaming phase, the shared vision comes into being through actions, and a phase of weaving (Ingold, 2011), in which creativity is read forwards, “in an ongoing generative movement that is at once itinerant, improvisatory and rhythmic” (Ingold, 2009, p. 91). A vision is imagined and woven while various contrary forces of friction of materials participate in this process, which are ever more tightly interwoven (Ingold, 2009). The embodied memories that emerged during Discovering are juxtaposed and diffracted with new ideas to help participants think differently about new ways of doing leadership. In Designing and Delivering, the team is changing ways of doing things, similar to a carpenter with a saw, who must continually readjust movements to maintain alignment with a moving target (Ingold, 2009).

Dependent upon how the diffraction apparatus of appreciative inquiring is produced, the studied phenomenon (in the case of this study: leadership) will emerge in particular ways, and through particular cuts. A diffractive approach does not take any boundaries for granted, “but rather investigates the material-discursive boundary-making practices that produce ‘objects’ and ‘subjects’ and other differences out of, and in terms of, a changing relationality” (Barad, 2007, p. 93). It is in the changing relationality that the indeterminacy is iteratively solved as enacted boundary-making or ‘cut’.

3.4.5.3 The Apparatus of Appreciative Inquiring

As argued in the previous sections, leadership can be found within the process of agential cutting. Leadership therefore is an element of the apparatus of appreciative inquiring, because agential cuts, which resolve indeterminacy and redirect the flow of action, are enacted by apparatuses (Barad, 2007). Furthermore, the dynamic relationality of the apparatus entails being part of the phenomenon that ‘it’ enacts (Barad, 2007). The apparatus and the phenomenon are therefore two sides to a

coin. In the case of this study, the apparatus of appreciative inquiring is entangled with the new ways of doing leadership (the phenomenon) that it produces.

It is here that I propose a new concept: intra-vening, a neologism that has emerged from my engagement with Karen Barad's agential realism, AI and L-a-P. The concept of intra-vening is central to the understanding of the apparatus in this study. As argued in section 3.3, the practices of inquiry, interaction and intervention are entangled. As inter-vention and inter-action are entangled, I argue that intra-vening and intra-action are as well, which leads to a new, intra-actional way of inquiring. Intra-vention is a prospective movement that focuses on possibilities instead of on the essence of 'the positive', which brings previously overlooked or neglected aspects of activities imaginatively to the surface.

An intra-ventional perspective invites us to engage diffractively in collective conversations and practices within the process of appreciative inquiring. I understand intra-ventions to be performative with respect to their ability to be generative in the sense that they continuously *generate focus, produce directions, and resolve indeterminacy.* In other words, the apparatus of AI is generative in the sense that it helps participants to collaboratively strenghten their focus in a collaborative effort to co-determine a certain phenomenon. In other words, it supports intra-actors (humans and non-humans) to co-produce a certain direction that allows new spaces for action and new possibilities to emerge.

Intra-vening thus offers a posthumanist alternative to the humanist concept of inter-vention and is an answer to the call "for a broader scope of appreciation" in AI practice (Bushe, 2010; 2012). With its focus on diffraction, it is a way of overcoming the dualities that are so prevalent in the AI literature. Instead, intra-vening is based on movement, process, entanglement, becoming, and transformation, which allows for more complete processes of appreciative inquiring, which include considerations of context. The notion of 'intra' recognises that relations themselves are constitutive and never absent their material contexts. Intra-relating, however, does not allow solely for preexisting relations but rather emphasises processes of relating within phenomena. Even though it is only a matter of a couple of letters, intra's focus on the 'within' clearly situates intra-vening as an element of the space and times in which they are 'intra-vening'.

Intra-vening defines the boundaries of a specific situation with which we might engage and supports us to engage with the seemingly endless expandability of the relational network of material and sensory flows. It therefore allows us to start doing/making immediately. Intra-vention therefore speaks about intentionality and consciousness, because intra-vention is inquiry: the intra-vention defines what it includes or excludes.

From an agential realist perspective, agential cuts are generated by the apparatus and not by an individual person in an 'act of leadership'. In the case of this study, agential cuts determine new ways of doing leadership in the teams. It is thus leadership itself, enacted by the apparatus, which creates these new ways of doing leadership. Intra-vention therefore moves away from the traditional perspective on AI that "words create worlds" (Whitney & Trosten-Bloom, 2010), but it operates through *jointly making and designing worlds*; it is a world-shaping undertaking and is making things visible (Cooperrider in Grieten et al., 2018). Intra-vening is the material-discursive practice that helps to form the world in a process of appreciative inquiring.

To conclude this section, I present the material-discursive practice of intra-vening *as the apparatus of appreciative inquiring*. Based on the above, I argue that intra-vening can be formulated as a collaborative process of reconfiguring boundaries that leads to an unfolding of possibilities by co-constructively shifting the focus to what has been indeterminate before. This is achieved through creating focus, producing direction and resolving indeterminacy. I argue that this nondualistic process of appreciative inquiring is initially directed and determined by the generative questions formulated and thus by the focus generated to uncover hidden and unnoticed possibilities. Appreciative inquiring can therefore be understood as apparatus that creates differences and creates the space for different ways of leadership to occur.

Although it is a difficult undertaking to describe the different elements of this new process of appreciative inquiring with our traditional language due to its entangled nature, I tried my best to create an image to show the entanglements in the process of intra-vening, so that a clearer understanding of the concepts emerges.

The process flows from the bottom to the top of the image in Figure 5. The process of intra-vening starts at the bottom of the image with appreciative questions that define the inquiry topic and questions. Intra-actors (matter, observers/participants)

and these questions are entangled and mutually intra-acting. The intra-vention and the practices within it produce direction that is entangled with agential cuts through which indeterminacies are resolved and possibilities are determined. These possibilities are shown as determined/classical particles in the image. The image also shows the wave function in a state of superposition and indeterminate and infinite possibilities, of which some are realised through agential cuts. The image also shows the scope of the apparatus: observers, matter, questions and intra-actions are all part of the apparatus. The apparatus, in turn, is part of the phenomenon that it enacts. Thus, it is the apparatus that enacts leadership by producing agential cuts. The apparatus is also part of the phenomenon of leadership that it seeks to determine in this study.

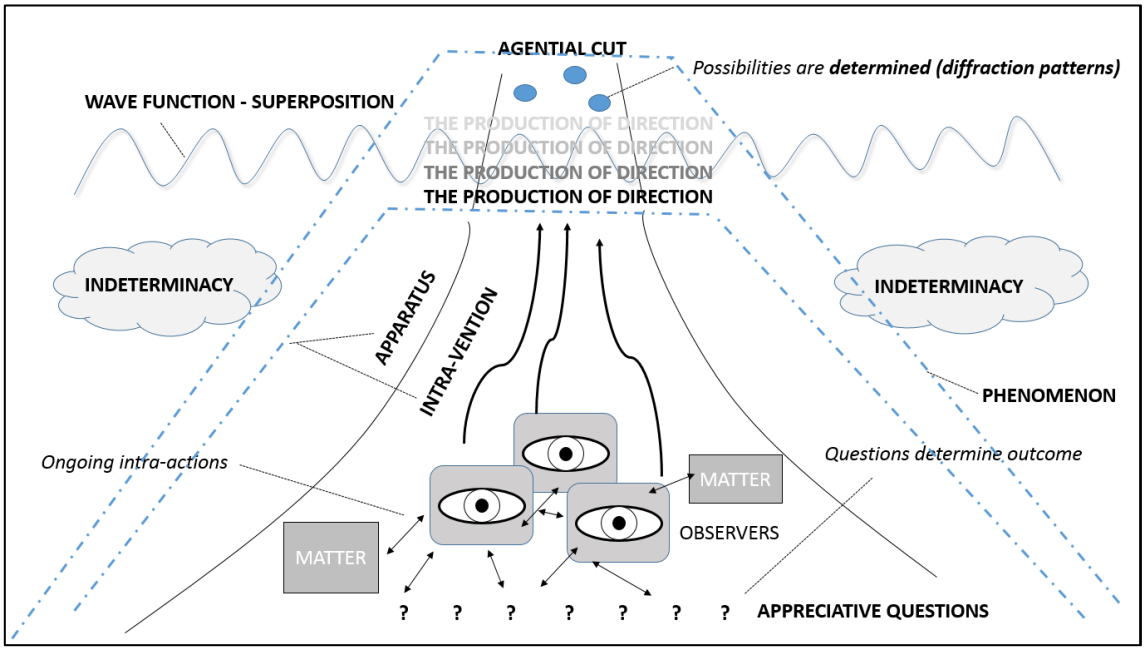

Figure 5: The Material-Discursive Apparatus of Appreciative Inquiring (own illustration)

3.5 Chapter Summary

In this chapter, I reconfigured the traditional concept of AI and developed the apparatus of appreciative inquiring. One contribution that this chapter makes is therefore a methodological one, as it reconfigured the method of AI as apparatus and material-discursive practice. As Barad reminds us, apparatuses may be understood as practice itself, and they are not “static arrangements in the world, but […] dynamic (re)configurings of the world” (Barad, 2003, p. 816). Another contribution is theoretical, as this section reconceptualises AI as a process that is

entangled with diffractive processes, and in these processes, leadership can be found.

I started the chapter by justifying the application of AI in this study. I highlighted the potential of AI in situations of organisational practice in which teams are caught in spirals of frustration, which, as discussed in Chapter 1, was the case in the virtual teams. Furthermore, as action research method, AI has been recommended as suitable method to study practice and to facilitate L-a-PD, as discussed in Chapter 2.

Moreover, AI and L-a-P share certain characteristics, as for example their focus on collaboration and relations. However, both concepts also share that they are often approached from a humanist perspective that focuses on language. In addition, one central element of traditional AI inter-ventions is a focus on the positive, and there is a risk that this suppresses the meaningful, as the unpleasant is inaccessible. Such a reflective and representational viewpoint, however, offers no adequate means of engaging with entities if the nature of their being is constantly changing. Such a concept is not suitable to understand the collaborative act of producing flow through which situations are changed, and new meanings arise. I argue that in order to apply AI in this study and to make it a suitable method to facilitate L-a-PD in a practice environment, these issues need to be addressed and the humanist and representational understandings need to be overcome.

To overcome these, I propose to move beyond a dualist and inter-actional focus with the help of agential realism. Agential realism does not grant primacy to humans, language and positivity. Instead, agential realism highlights that everything is entangled with everything else. From such a perspective, the world is always unfolding. We can only achieve momentary stability by making cuts, which set boundaries and momentarily stabilise qualities of agential components. And making cuts, or performing phenomena, is done by diffracting different types of agencies. In the analysis it will be evident how the apparatus of appreciative inquiring operates as such material-diffractive arrangement.

To conceive AI as diffraction apparatus, which enacts “what matters and what is excluded from mattering” (Barad 2007, p. 148) from a leadership perspective entails analysing how the participants intra-act with different parts of the world, the differences they enact, and where the effects of those differences materialise. More

specifically, the apparatus has been defined as ongoing process of intra-vening, a collaborative practice of reconfiguring boundaries that leads to an unfolding of unnoticed possibilities, which creates differences and generates the space for new ways of doing leadership. Such an approach understands AI in previously unconsidered ways and makes it suitable for studying and developing L-a-P. In the AI process, participants therefore need to understand which differences matter, how they matter, and for whom. By inquiring diffractively, the team members will make distinctions that may otherwise go unnoticed.

Leadership, in this case, is the phenomenon, as the objective of the process of intra-vening is the development of new ways of doing leadership. Leadership, however, is also part of the apparatus of appreciative inquiring, because the phenomenon is always part of the apparatus that it enacts (Barad, 2007). By reconfiguring AI, I also reconfigured leadership. As Crevani et al. (2010, p. 81) highlight: one possible reason for a lack of empirical analysis in processual leadership studies is an ongoing struggle with the challenge of "how to remain true to the processual ontology […], and simultaneuously delimit the concept of leadership to discernible practices and interactions to make it possible to study. My purpose was therefore to get to a concept of leadership that allows me to study the phenomenon empirically while remaining true to a process ontology. To achieve this, I have argued for an intra-actional understanding of leadership practice in this chapter, which differs substantially from the self-actional and inter-actional perspectives that are oftentimes found in the literature. I have used Simpson's categorisation of leadership as trans-action, which understands leadership to occur in turning points that redirect the flow of practice, and I have extended the trans-actional concept by using Karen Barad's concept of agential realism. Out of this, leadership has emerged as diffractive practice, as leadership can be found in diffractive events where direction, co-orientaton, and new spaces of action are created. In these events, possibilities are realised through agential cutting, which means "accounting for how practices matter" (Barad 2007, p. 90). Depending on how the diffraction apparatus of AI is produced, the recorded phenomena (in the case of this study: leadership) will emerge in particular ways, and through particular cuts. The agential cut enacts what to focus on and what to leave out in the process, and it is thus a boundary-making practice. However, this does not mean that leadership is understood solely as human

process. Agential cuts are enacted by the the entangled human and non-human intra-actors that form the apparatus, and not by an individual person in an act of leadership. The practice of leadership is therefore material-discursive. Out of this, leadership is depicted as a diffractive practice that reworks organisational practice by producing direction. As in the modern theory of light that diffraction patterns play a crucial role in generating, leadership can be understood as particle (a leadership moment, an action space of possibilities, a moment of agential cutting), but also as perpetually moving waves of relations and repetitions that imply a superposition of possibilities and lead to new agential cuts. Diffractive practices are enacted by the apparatus. Leadership, as diffractive practice, therefore, is entangled with the apparatus that is an ongoing, material-discursive practice itself (Barad, 2007). This is an emergent and social process, because intra-actors arise through and as part of their entangled intra-relating.

A diffractive methodology does not take any boundaries for granted, “but rather investigates the material-discursive boundary-making practices that produce ‘objects’ and ‘subjects’ and other differences out of, and in terms of, a changing relationality” (Barad 2007, 93). It is in the changing relationality that the indeterminacy is iteratively solved as enacted boundary-making or ‘cut’. Thus, I argue that boundary-making leadership moments should be the focus of analysis in this study. Barad reminds us that agential cuts are enacted by apparatuses, and thus leadership moments, which resolve indeterminacy and redirect the flow of action, are entangled with the apparatus of appreciative inquiring.

4 Designing: Methodology

In the previous chapter I have justified why I chose AI to develop leadership practice in one face-to-face and one virtual team and why I adopted an agential realist stance in this research project to answer the research questions. Based on the possibilities of *what could be* achieved that were identified in the *Dreaming* chapter, this chapter focuses on designing *what should be* done to bring the dreams to life (Cooperrider et al., 2008). Thus, this chapter explores *how* to apply the methodology.

I start by providing an overview of the data collection and analysis methods applied and also their sequence in section 4.1. I then discuss my previous pilot study and explain how this process informed this study´s design and implementation in section 4.2. I then go on to describe the context of the study, including the host company, in section 4.3. This includes an introduction to the teams and myself in detail and I discuss how agential realism creates a challenging position for myself as researcher. I discuss the various ways in which I collected data in section 4.4. Section 4.5 deals with data analysis and includes a discussion of leadership moments as focus of analysis and of the diffractive analysis applied. I go on by discussing the design and facilitation of the AI workshops in section 4.6. Section 4.7 addresses some key challenges of the research process and critically evaluates my implementation of this research design. Finally, section 4.8 provides a summary of the chapter.

4.1 Overview of Applied Research Methods

4.1.1 General Overview

In this section I provide an overview of the research methods used and in which sequence they were applied. Before I do this it is helpful to remind the reader of the research questions:

1) *Research question 1: How can Appreciative Inquiry be used to develop leadership practice in virtual teams and face-to-face teams?*
2) *Research question 2: How is leadership practice different in each team before and after the Appreciative Inquiry process?*

3) *Research question 3: How can leadership and its transformation be studied empirically from a practice perspective?*

4) *Research question 4: How can leadership practice be theorised as an emergent social process?*

To answer these research questions, a study design was required, which involved:

1) the facilitation of an AI workshop process to develop leadership practice in virtual and face-to-face teams;

2) the observation of leadership practice in the teams before, throughout, and after the AI workshop process; and

3) the identification of a way to identify leadership practice in the data and to analyse it.

This chapter provides further detail about each of these points and the data collection and analysis methods used. In this section I already briefly provide an overview of the study design and in which sequence the steps were carried out. I also provide a brief justification for each step and the sequence of events. I start with an overview of which implications agential realism has on the study design. Figure 6 shows the different phases of the project and which activities were carried out in the different phases.

The Pre-AI phase is the phase before the AI workshops had started. In this case I prepared the workshops and already carried out observations of team meetings. This phase already included some elements of data analysis, even though it was not the focus in this phase. As I discuss further below, from an agential realist point of view, all activities in a research process need to be understood as entangled. Before the AI workshops started the team members responded to a survey.

The 'During AI' phase is the phase in which the AI workshops took place. In this phase the focus was on carrying out the AI workshops. I carried out observations of the workshops and team meetings and continued to analyse the data as it became available. In terms of data analysis, I followed a method of tagging and referencing (Schadler, 2019), which is different to traditional coding. Tagging and referencing exposes differences, which is relevant in an agential realist study. This method will be discussed in more detail later.

In the Post-AI phase I continued to carry out observations of team meetings. In this phase, the team members responded to the Post-AI survey and with having all the data available, the focus shifted much more to data analysis. However, as stated before, data analysis took place throughout all phases of the project. To identify leadership practice and its transformation in the data I followed four analytic steps. These are described in section 4.1.5.

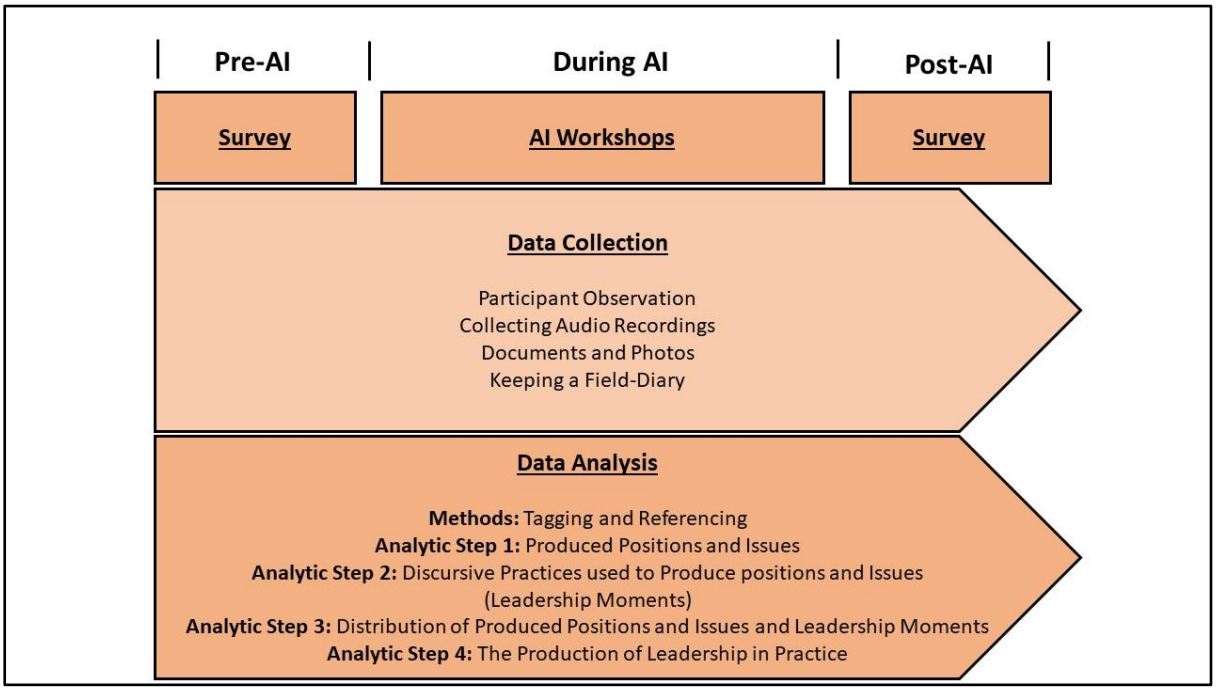

Figure 6: Sequence of methods of data collection and analysis in the project

4.1.2 Implications of Agential Realism on the Study Design

The concept of entanglement is central to an agential realist approach. In an agential realist analysis we understand that separateness only emerges through the enactment of agential cuts and difference plays a key role within the world`s entangled becoming. This has certain implications on the research design.

The phenomenon that is under study (in this case: leadership) cannot be understood as separate from the research apparatus (Barad, 2007). The focus in an agential realist study is on the ongoing intra-active processes through which phenomena are being produced. With regards to this, researchers should allow for entities to be "more mobile, intra-active and multiple than our modes of enunciation normally suggest" (Davies 2014, p. 3). The task of the research when adopting diffractive data collection "is not to tell of something that exists independent of the research

encounter, but to open up an immanent truth – to access that which is becoming true, ontologically and epistemologically, in the moment of the research encounter" (Davies, 2014, pp. 734). In accordance with a wayfinding approach (Chia & Holt, 2009), the researchers does not know in advance, which knowledge will emerge in the research process. It is important to understand that the researcher is entangled with the research process and part of the phenomenon that is produced (Barad, 2007). Barad does not specify research methods. Scholars have adopted participant observation, interviews and participative co-production methods in agential realist studies (Yoshizawa, 2014; Friedland, 2015; Visser & Davies, 2021). An agential realist researcher focuses on the intra-acting components of the research apparatus that produce the phenomenon. The phenomenon and how it is produced is the focus of an agential realist study (Barad, 2007).

In the next sections I talk about the workshop process, data collection and analysis. Although I present these enactments here in separate sections, they are interwoven with each other and separating them is an enactment of boundaries. Every instance of research is entangled with other research processes and these enactments do not have to follow one another consecutively (Schadler, 2019).

4.1.3 The Workshop Process

The AI workshops were a central element of the project. The workshop process itself will be discussed in detail in section 4.6. The idea of the AI workshops was to provide an enabling space for the team members to develop new ways of doing leadership. Only FTF1 and VT1 participated in the workshops. FTF2 and VT2 acted as reference teams that enabled me to conclude if any transformations could be seen as resulting mainly from the AI workshops.

In the pre-AI phase I was beginning to plan the AI workshops. I carried out observations of team meetings throughout the entire project to identify leadership practice. The key objective in this phase was to capture how leadership practice emerged and how it transformed. I carried out observations in all four teams in all phases of the process. In the next section I talk about how these observations took place.

4.1.4 Data Collection

Before the first workshop started the team members responded to a pre-AI survey. Pre- and post-testing is a widely used method for understanding the impact of an intervention. Change surveys “are useful in assessing whether change has occurred as a result of a development initiative” (Hoole & Martineau, 2014, p. 144). This survey was useful in order to set a baseline, so that I could later understand the transformation of the teams in more detail, and in particular from the perspective of the team members, when comparing the results of the pre-AI survey with the post-AI survey. I discuss the survey approach in more detail in section 4.4.5.

While I was preparing for the AI workshop sessions I already started to observe team meetings. The objective was to identify how leadership practice transformed in the teams, and I therefore started to carry out team meeting observations before the beginning of the workshops. In these observations I took photos, took notes and collected audio-recordings. As my objective was to understand how leadership practice transformed in the teams, my goal was to capture the “full richness of experience”, which participant observation is capable of (Greene & Hill, 2005, p. 13; Hultin, 2019). Researchers who engage in a diffractive analysis require rich qualitative data, which involves opportunities to account for the multiple aspects within intra-activity. Thus, participant observation seemed to be an optimal method to accommodate it (Niemimaa, 2014).

4.1.5 Data Analysis

4.1.5.1 Focus of the Analysis

In Chapter 3, leadership was defined as diffractive practice. I conceptualised diffraction as an open-ended process of producing direction, which is the core of leadership work (Crevani et al., 2010). Thus, we can identify the emergence of leadership in these diffractive events. In my analysis, I therefore focus on the production of direction. Crevani suggests that when conceptualising leadership as production of direction, “we move from what one person does to what the processes are about” (p. 6), and that “although there seems to be no real consensus about how to define leadership in the literature, there is at least one element that characterises most definitions: the production of direction” (2011, p. 19). This concept looks for

leadership in mundane practices and routines (Crevani et al., 2010, p. 77). The production of direction is achieved through the sub-processes of producing positions and issues (Crevani, 2015; Raelin, 2016), which are the focus of the data analysis. Crevani et al., (2014, p. 8) conceptualised producing positions as “the evolving understanding of who has which formal and informal roles, who is to do what, who is responsible for what, and who should make certain decisions”. Producing positions is closely related to producing issues (Crevani, 2011). The concept of issue is seen as a central factor in leadership work (Smircich and Morgan, 1982; Crevani, 2011). An issue can be understood as a trajectory and producing issues contributes to directing organising processes as the trajectory evolves. In section 4.5 I will discuss both of these concepts in more detail.

Now that the focus of the study has been made clear, the question comes up how these practices of producing positions and issues are identified. Practice researchers should focus on how talk creates something new, and how it can change the direction of leadership movements (Simpson et al., 2018b). I therefore focus on material-discursive practice in my analysis (Barad, 2007; Orlikowski & Scott, 2015). In the material-discursive entanglement, we cannot expect language to work (only) in the old ways that were given by discourse or constructionist theories. I therefore take an expanded view of language, which sees discourse and matter as connected. By analyzing episodes from team meetings, I focus on how human and non-human bodies together become through and for another to explore how leadership takes place. In this context, human and non-human phenomena are described as intra-acting to depict how leadership takes place in the daily routines of team meetings. I argue that through this intra-action, the participating phenomena become together. In this study I use the term intra-action. Barad (2007) states that intra-actions are processes that change all partaking bodies. In this case, the workshops change the human participants as much as the human participants influence the workshops. In my analysis I focus on how these transformation occur. I refer to the leadership moments in which positions or issues are produced as turning points (Simpson et al., 2018b).

4.1.5.2 Tagging and Referencing

I focus on material-discursive practice in my analysis (Barad, 2007; Orlikowski & Scott, 2015). I argue for an expanded view of language, which sees language as the "metaphysical surface" (MacLure, 2013, p. 663) on which the very distinction between words and things is played out. To capture material-discursive practice I therefore extend the focus of a discursive analysis, which was useful in the pilot study, to the material-discursive by combining it with visual inquiry (Bell & Davison, 2013) to capture body language, expressions and other artefacts and materialities in the meetings. I, for example, took sketches or photos, when appropriate, to capture the materialities in the environment. I also captured the room layout and seating arrangements of the meetings I observed. I chose this approach for three main reasons:

Firstly, the pilot study findings indicate that discursive analysis is a useful approach to study aspects of leading and that it is useful to consider contextual aspects in the analysis.

Secondly, I used visual inquiry to assist in identifying the less obvious, habitual aspects of leading, which would potentially be overlooked in a traditional discursive analysis.

Thirdly, to capture materialisations it is important to consider discourses, because discourses are forming and functioning at the interface of the linguistic and material worlds (Hardy & Thomas, 2015). In the first step of analysis I tagged the data (Schadler, 2019). While tagging is quite similar to coding, I approached this process from an agential realist perspective, which means that this approach is not defined by bounded sets of practices but rather by openness and appreciation for where our experiences with data might take us (MacLure, 2016). One purpose of tagging is to identify boundary-making practices (Schadler, 2019). It thus was an appropriate choice in this study as the production of direction is such a boundary-making practice (Crevani, 2011). For me, tagging was about the creation of agential cuts. It was about creating boundaries and about resolving some of the indeterminacy in the data by cutting some of the data together-apart (Barad, 2007). This process revealed several sub-phenomena that referred to field-diary notes, audio-recordings, and

photos. Based on this, I rebuilt the processes from multiple types of data. I discuss in section 4.5.2 how this was carried out in detail.

4.1.5.3 Process of the Analysis

Now that the different ways of collecting and analysing data as well as the focus of the analysis have been introduced, I would like to put some more emphasis on the sequence of steps in the analysis phase.

One central objective was to understand how the leadership phenomenon transformed throughout the project in each team. To understand a phenomenon, it is important to understand the diffractions that contribute to its emergence. To understand the diffractions, it is important to understand the differences that matter (the enacted boundaries) and the material-discursive practices producing these differences (Barad, 2007). It therefore became my objective to identify material-discursive moves that made a difference in the enactment of leadership practice by carrying out a diffractive analysis to understand differences. As agential cutting creates differences (Barad, 2007), this process is the focus of the analysis. As conceptualised in the previous chapters, leadership can be understood as a diffractive practice that is enacting agential cutting, which creates boundaries.

First, with the help of tagging, I identified the differences that were enacted as boundaries (Schadler, 2019) by identifying the produced and materialised positions and issues. The main focus in this analytic move was the identification of agential cuts (the produced positions and issues).

In a second analytical move I focused on material-discursive practices by focusing on the practices of producing positions and issues, i.e. the practices that produced these differences. Thus, the focus of this move was the identification of boundary-making processes of agential cutting (the practice of producing positions and issues).

In the third analytical move I analyse how the identified differences and the material-discursive practices producing these develop over the course of the project. This step uncovers the diffraction patterns and leads to the pattern of differences that were produced throughout the project.

The fourth analytical move binds together the preceding moves. This last move of analysis brings out the repetitive temporal patterns (Langley et al., 2013) visible in each meeting. While the previous analytical move shows how leadership developed over the course of the project from a bird's eye view, this move goes into more detail about how leadership was enacted in the meetings through moments of agential cutting and an interplay of producing positions and issues. It thus adds another layer of analysis and contributes to the understanding of the analytical moves one to three by focusing on the daily practice through which direction was produced and leadership was enacted.

4.2 Pilot Study

A pilot study with the focus on identifying methods of data analysis to study aspects of leading was submitted in 2016. The pilot study was carried out in the same company as the main study and its findings informed this study. The pilot study focused on one face-to-face project team. Data was collected by observing team meetings, writing diaries and taking audio-recordings. I conducted a comparative analysis of three discourse-analytic research methods, focusing on their applicability to study leadership as the ongoing social production of direction (Crevani, 2011), and the emergence of leadership moments in relations (Wood, 2005; 2010). I compared and contrasted conversation analysis, narrative-discursive analysis, and the discourse-historical approach - three methods, which had already been used by researchers to study leadership. I identified that each of the methods could determine different facets of leading, as for example the production of positions or issues (Crevani, 2011). The empirical analysis identified that the discourse-historical approach produced the richest analysis of the interactions (see Figure 7), as it considers a wide range of historical events and contextual elements.

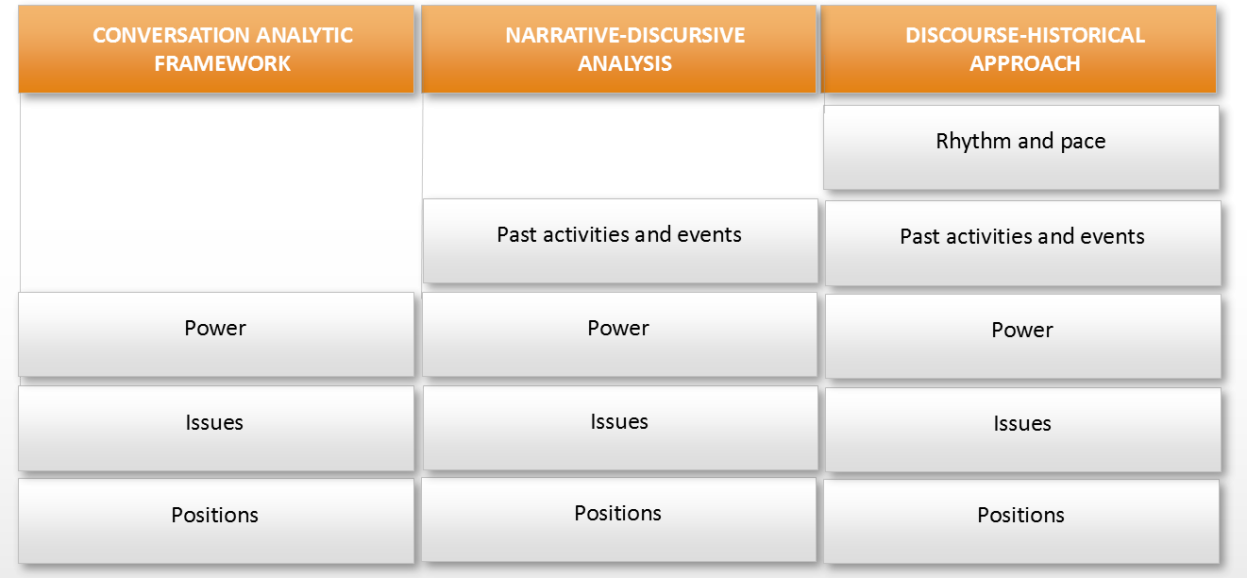

Figure 7: Overview of which discursive methods uncovered
which aspects of leadership interactions (source: pilot study results)

The findings confirmed that participant observation and taking audio-recordings are suitable methods of data collection. It also demonstrated the usefulness of including wider contextual factors in discursive analysis. With my new understanding of agential realism, I now better understand the role of materiality and understand some of the pilot study findings differently. In one meeting, for example, we discussed about hourly target boards on the shop-foor. Before this, team members had not been particularly interested in these metrics. When we introduced a performance-based payment system and used these metrics to calculate a monthly bonus, the boards became more meaningful. We held team meetings and discussed the metrics, and the team performance was materialised to everybody in the organisation. This shift in material-discursive practice from evaluating the team performance in private to a transparent visualisation accessible by the wider organisation was consequential and the boards produced differences. Over time, we experienced less defects, more motivated team members, and happier customers. Customers were introduced to the metrics, which improved relationships. The team members started to work more collaboratively and over time, as a result from feedback, the boards changed as well. Eventually, this performance-based payment system was implemented in the wider organisation.

This example included the enactment of differences that mattered, which was driven by material-discursive entanglements. Having realised how useful the collected data was during my pilot study I was motivated to use similar ways of collecting and analysing the data in the main study. This will be further discussed below.

4.3 Entering the Setting

4.3.1 Introducing the Company

The study was carried out in a medium-sized, family-owned company that manufactures industrial products for a wide range of applications. I use the fictitious company name ‘W-Tech’. W-Tech`s head office is based in Germany. Combining tradition and innovation is one of the key values of W-Tech. At the time of the observations, W-Tech had approximately 1,000 employees worldwide. Most of these employees worked in the head office and manufacturing plant in Germany.

Approximately 400 employees were distributed among 6 subsidiaries in the USA, the UK, France, Italy, Spain, and China. 80% of all products were exported, and the subsidiaries contributed significantly to the company’s turnover.

W-Tech’s production process begins with melting the materials and creating special alloys for the manufacturing process. In the next step, the mechanical and electrical properties of the alloys are measured. The parts then go through various machining, test and assembly processes. This high manufacturing depth adds a layer of complexity, especially as each subsidiary has its own production facilities.

The culture at W-Tech is rather informal. There is no formal dress-code and most of the departments are in large open-space offices (see Figure 8).

Figure 8: Open-space office at W-Tech

Most employees know each other well as many of them have been working for W-Tech for decades. In recent years, there have been many changes. Due to a growing competition, W-Tech conducted many projects to improve productivity, as for example relocating machinery. Some employees argued that “work has become more and more stressful” and “things used to be better” in the past. The following section describes the specific context in which the four teams, which are part of this study, operate.

4.3.2 Key Projects of the Teams

As described in previous sections, two face-to-face teams and two virtual teams became part of this study. Only VT1 and FTF1 participated in the AI workshops. The teams´ main objectives were to standardise production processes across production sites. The teams worked on comparable projects with a similar scope. The main difference between the teams was that they were responsible for different market segments. Due to the size of the German head office, two teams were based in Germany. The other two teams were geographically dispersed. Figure 9 provides an overview of the team sizes and the market segments the teams operated in. Figure 10 provides a more detailed overview, including age and location of each

team member. The names are pseudonyms to protect the anonymity of the team members.

To remind the reader, the key reason for this study was that the virtual teams struggled to meet business expectations, as project times and and costs in the virtual teams were often too high.

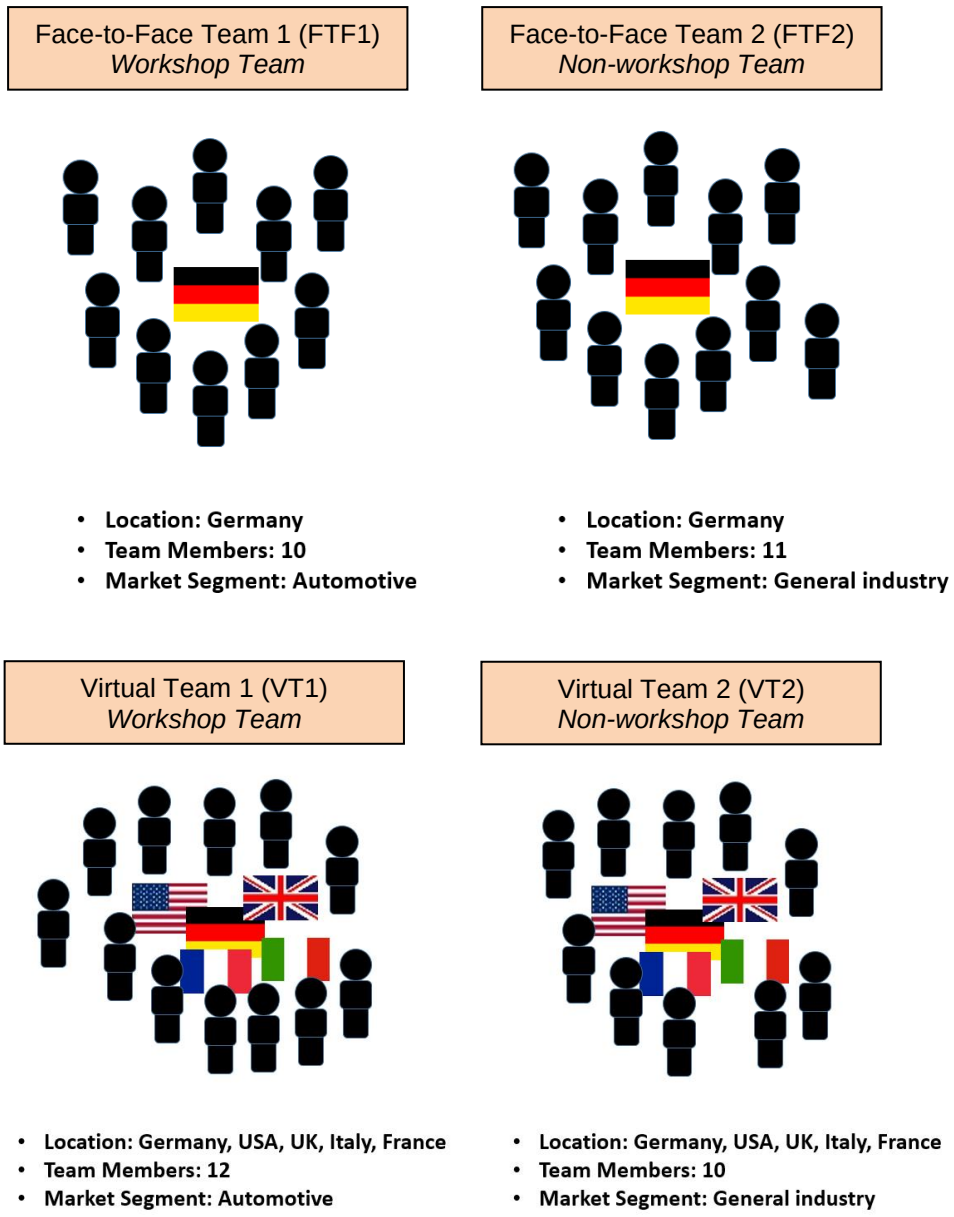

Figure 9: Team sizes and market segments

Figure 10: Overview of teams and team members

4.3.3 Introducing Myself

In action research, the researcher has a multifaceted role and is continuously challenged cognitively and emotionally while working in a cooperative relationship with participants. The participants, for example, were involved and played an active role in the design process of the AI workshops. The action researcher continuously acts in relation to the participants (Postholm & Skrøvset, 2013). Thus, the researcher's own personality, values and history, also influence the research environment and the phenomenon (Easterby-Smith et al., 2018; Patton, 2002). It is therefore important to describe my own role in the research process. Any personal and professional information that might have influenced the research process should be included (Patton, 2002). As Barad (2007) explains, "each of us is part of the intra-active ongoing articulation of the world in its differential mattering" (p. 381). Through our actions we contribute to specific cuts. It is important to understand that these cuts are performative, and that alternative cuts would have been possible. The inseparability of "what is observed from the practice of observation" (Orlikowski & Scott, 2014, p. 873) is important.

When I joined W-Tech in 2011, I had just graduated from university. During my studies, I participated in a cooperative studies programme, which combined studying full-time and part-time while working in a company in different departments. Thus, throughout my studies, I already gained valuable work experience, and worked with diverse and international teams. During my postgraduate studies, I was responsible for implementing a quality management system at our Italian subsidiary. At the time, I found it more convenient to travel to Italy and talk to my Italian colleagues in person instead of using a video-conferencing software or a telephone, because virtual meetings never seemed to have the same effect as face-to-face meetings. I wanted to understand how to avoid frequent travelling while still ensuring good communication with virtual team members. This was relevant due to W-Tech's increasing international engagement. With regards to my position as researcher and manager and the power performed in such relations, there might be different aspects to consider. As a recently graduated engineer with a Master's degree and management responsibility for four teams with experienced team members, I was sometimes feeling subordinate to the often more experienced team members, even though my engineering degree partly compensated for this. However, I felt that the

fact that I worked already during my postgraduate studies has helped me to establish good relations. Observing people was an unusual experience for me, as I had worked with the participants for a long time before starting my fieldwork. The process of observing helped me, through working more closely together with them, to familiarise myself with their everyday actions. Observation not only involves conducting direct observations but also usual day-to-day interactions with the participants.

I participated in the field, had insider knowledge and my understanding of the company was that of an insider. My advantage was that I had unlimited access to documents and departments, which put me into an ideal position to conduct observations. The benefits of being an insider have been mentioned by various scholars (Bonner & Tolhurst, 2002; Smyth & Holian, 2008; Unluer, 2012). One main benefit for me was the deep understanding of the values and the culture of the company in which the project was carried out. This enabled me to generate data external researchers would not have been able to create. Some would argue that a possible disadvantage of being an insider might be that the researcher cannot take sufficient distance from the situation under study. However, from an agential realist perspective, it is not possible to take a static, external observer perspective, because we always intra-act (Barad, 2007). Being part of the apparatus, all actors, including the researcher, are co-evolving intra-actors in producing relationships, structures, realities, and meanings. Therefore, I consider my close involvement as advantage. Against this background, I am fully accountable for the progress, validity, credibility and results of this study. With regards to my position as a researcher, I take complete responsibility for the thesis and understand that any interpretations might not necessarily be shared by the participants. I therefore protect their integrity by anonymising both the company and the participants.

4.3.4 Ethical Aspects, Consent and Participation

In my study, everything was done to secure the prior consent of the team members and to protect their rights. Prior to beginning fieldwork, I designed information sheets and consent forms (see Appendices D & E) and sought ethical approval from the Department Ethics Committee of the university.

I clearly mentioned in both the consent form and the information sheet that each participant had the right to withdraw from the study until a certain point in time. If a participant had decided to do this, I would have deleted any recording of them. Moreover, each participant also had the possibility to access their data and to listen to their recordings. However, no participant withdrew or wanted to listen to the recordings throughout the entire process. I asked for consent for survey participation and audio recording. In my first attempt I included video recording as well, but experienced strong resistance in the teams to be video recorded, so that I abandoned this method.

In the consent form and information sheet, the following elements, among others, were included:

- an explanation of the research objectives;
- a description of the research process and the methods used;
- a description of possible risks and benefits the research might involve;
- an offer to answer any questions concerning the research process;
- information that each participant could withdraw from the study until the workshops had started; and
- information that the data could be accessed at any time.

Besides consent, ensuring anonymity and confidentiality played a key role in the research process, so that I adopted pseudonyms for any participant, for the company and in any documentation regarding the interactions. I also anonymised the photos that I included in this thesis.

Sometimes, analyses of the recorded interactions uncovered parts of the meetings that I considered to contain sensitive information. This occured, for example, when a person made an utterance which demonstrated that they had fully forgotten that the conversation was recorded. I took these as signs that the conversation surrounding this utterance should rather be considered as confidential and so these parts of the recordings were deleted. Sometimes, I could not avoid that non-participants were recorded. For example, in face-to-face team meetings it regularly occurred that various people entered the room, and sometimes even took part in the discussion. I developed a strategy to deal with this. If I did not already have recording consent of the individuals recorded, I talked to them after the discussions and offered them the

possibility to either sign a consent form or to delete the part of the recorded conversation they were part of. Each person I approached in this manner signed the consent form.

4.4 Collecting Data

Research from an agential realist stance focuses on “building diffraction apparatuses in order to study the entangled effects differences make” (Barad, 2007, p. 73). The ‘entangled effects’ relate to a transformation of boundaries that divide particular entities from each other. Diffraction apparatuses are responding to and building material-discursive boundaries at the same time (Barad, 2007). I already reconceptualised AI as apparatus of appreciative inquiring in the previous chapter. However, the concept of apparatuses is also referred to as the idea of “material arrangements” (ibid., p. 142); of these arrangements, Barad highlights: “[T]hat the apparatuses of bodily production (which are themselves phenomena) are (also) part of the phenomena they produce” (2003, p. 826). Thus, it is important to be specific about the details of the apparatus to understand the phenomenon to be studied.

In the following sections, therefore, I further build this apparatus. I discuss how I conducted observations, two surveys, collected documents, audio files, and photos, and how the AI workshops were carried out. I also present the ways in which the data was analysed. Agential realism participated actively in the research process and redefined the boundaries of the research methods. I created an approach to identify material-discursive boundaries and to look for leadership practice. Although I present these enactments here in this thesis in separate chapters, they are interwoven with each other and separating them is an enactment of boundaries. Every instance of research is entangled with other research processes and these enactments do not have to follow one another consecutively (Schadler, 2019).

The data for this study was collected from observing more than 160 hours of team meetings and workshops during a seven-month period in 2016 and consisted of audio-recordings, photos, documents, field diary notes, and a 2-stage survey. In the virtual teams, data was gathered through the communication software used in the meetings: either WebEX or Skype.

My overall goal was to understand what was happening under the specific conditions that were produced within this research project. Using the data, I could then, to use Barad's line of thinking, identify the produced cuts that made specific actions possible for the teams and team members. This allowed me to understand leadership practice and its transformation in the teams.

The data collection process was carried out in three main phases. Each phase built on and informed the next phase. The transition from one phase to the next was fluid.

1) **Phase 1: Pre-AI to collect baseline data:**
    a. Collect data before the workshops by observing all four teams in meetings
    b. Carry out a pre-AI survey
2) **Phase 2: AI Workshops (During AI):**
    a. Carry out and observe the introductory 2-day kick-off event with the teams FTF1 (face-to-face team 1) and VT1 (virtual team 1)
    b. Carry out and observe workshops with the teams FTF1 and VT1
    c. Observe all four teams in meetings
3) **Phase 3: Post-AI data to compare with baseline data:**
    a. Collect data after the workshops by observing all four teams in meetings
    b. Carry out the post-AI survey

Figure 11 shows a timeline of the different steps of data-collection.

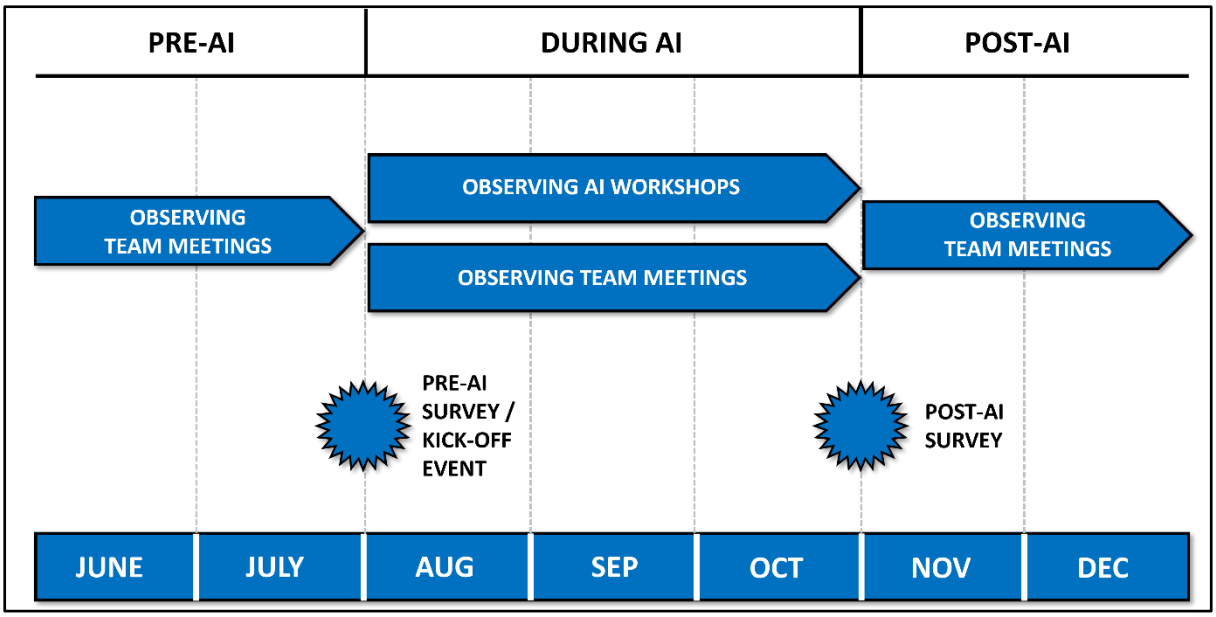

Figure 11: Timeline of data collection in 2016

4.4.1 Participant Observation

The method of observation I have applied is in line with a turn towards increased "observational methods in the search for the practices of leadership in everyday life" (Kelly, 2008, p. 763). To study L-a-P, researchers are required "to observe and describe in detail what is happening over time" (Sergi, 2016, p. 113).

Participant observation is a method in which a researcher observes and takes part in the daily activities and routines of a group of people in their 'normal' context to achieve an understanding of it. In addition to this, participant observation includes the use of the information gained from participating and observing through recording and analysis. Participant observation is helpful when trying to make sense of the context of phenomena as it entails that researchers engage with actors and their contexts (DeWalt & DeWalt, 2011). Participant observation is very flexible and capable of capturing the "full richness of experience" (Greene & Hill, 2005, p. 13). In projects to develop L-a-P, as in the AI workshop sessions within this project, the coach typically works with the team members, "observing the group in action because their remit is to help the group and its members to learn to adopt new collaborative leadership and learning practices, […]" (Denyer & Turnbull James, 2016, p. 274). Participant observation offers the possibility to capture "the messiness

of everyday experience" and attend to a number of "different material-discursive agential flows in the production of phenomena" (Lyttleton-Smith, 2015, p. 99).

Brown (2014, p. 171) suggests participant observation as suitable method for studying complex processes over time: "a key aim [with participant observation] is to understand how the subject group interacts with each other and with the specific social and cultural context of the time and place of the research, when dealing with the phenomenon under investigation".

Furthermore, participant observation enables researchers to study practices or 'doings', which includes intra-actions and enactments (Hultin, 2019). Thus, participant observation seems to be a suitable approach when exploring material-discursive practice. The method also aligns well with Barad's (2007) argument that researchers are part of the world and that knowing comes from engaging with and as part of the world. Accordingly, participant observation resonates well with this idea as the researcher is not seen as detached in this method of generating data (Hultin, 2019). Researchers who engage in a diffractive analysis require rich qualitative data, which involves opportunities to account for the multiple aspects within intra-activity. Thus, participant observation seems to be an optimal method to accommodate it (Niemimaa, 2014). Informed by this, empirical data collection for this study was mainly based on observations of team meetings.

However, participant observation is not without its challenges. Some argue that the participation of the researcher in the process leads to concerns about reliability and about the researcher as potential source of disruption (Denyer & Turnbull James, 2016). As Denyer and Turnbull James (2016, p. 252) argue: "As a validity question, researchers being present in everyday practices impacts the practices observed". However, I agree with Lyttleton-Smith (2015, p. 99) that "[t]his challenge is compounded within agential realism, which highlights the role of researcher-as-active-participant within an apparatus of observation that is simultaneously entangled with the production of phenomena". From an agential realist viewpoint, the observations are not purely made by the observer, but by the whole observational apparatus (Barad, 1998; Lenz Taguchi, 2010, p. 69). Hence, we can see ourselves as equal participants in a mutual engagement with all other organisms and matters in it. Thus, the researcher can also be understood as research instrument to be described, critiqued, and analysed, as any other apparatus would be (Coffey, 1999).

To conclude, participant observation is considered a suitable data generation method, which helps to find answers to the research questions as it enables the study of leadership as material-discursive practice including aspects such as materiality, practices, complexity, context and social processes.

As demonstrated in Chapter 2, most leadership studies engage with participant observation from a reflective perspective, and Barad does not provide much clarity about how to apply agential realism in empirical studies. Therefore, agential realism has been the central theoretical concept only in a small number of empirical studies. For example, Nyberg used an ethnographic methodology of "observation to describe, document and understand the practices in their natural, spatial and temporal occurrence" (2009, p. 1186) in an insurance company. For Nyberg, the 'starting point' for an investigation "is not the actors that produce practices. On the contrary, it is the intra-actions within practices that produce actors and categories" (Nyberg, 2009, p. 1184). Nyberg's use of agential realism suggests that "We move from a world of representations to a world of actions and doings. This is an important step towards renouncing simplistic dichotomies which hold organisation studies back and acknowledging the complexity of organisational life. By showing alternative cuts, it is possible to challenge the privileged position of certain actors […]" (p. 1189). In line with this, I redirected my attention to material-discursive entanglements. My observations took place primarily in team meetings and AI workshop sessions. My aim was to trace the associations between human and non-human elements. I expanded my gaze onto the entire environment in which the meetings and workshops took place, including material objects like furnishing and CT, for example. I took detailed notes about particular activities, the location where a meeting took place and how people and other objects were arranged in relation to each other. I tracked movements, sounds and spoken words. My objective was to focus on the intra-actions between different organisms and matters.

4.4.2 Collecting Audio-Recordings

The teams agreed that it was beneficial to take audio-recordings. This enabled me to focus on taking notes on body language, tone of voice or descriptions of the wider context and material arrangements.

I began to use the audio-recorder in the pre-AI phase. After the first meetings, I realised that some team members started to forget about the recorder. These were mainly the team members who had participated in the pilot study and already seemed to be used to being audio recorded. I decided not to record conversations on the shop-floor or in office areas, as it was not feasible from an ethical standpoint. The recording device would not only have recorded conversations of the participants, but everyone they talked to. Furthermore, the overall noise level on the shop-floor made the recording of conversations nearly impossible. I consequently decided to concentrate on collecting data from the AI workshops and the formal team meetings in meeting rooms and virtually. I translated the German data from the face-to-face teams into English in the analytic phase. The virtual teams communicated in English.

As an apparatus is consequential for how a phenomenon materialises in an inquiry, the voice-recording system was chosen with mindful consideration. Before I decided which system to use, I carried out trials with different systems. The system that was selected consisted of several microphones that could be put up in the largest meeting room, and a central recorder that stored the data directly on a USB stick. I only needed one microphone in the smaller meeting rooms. The voice quality recorded with this system was much better than the device I had used in the pilot study, which helped in the analysis. For the virtual team meetings, we used a software called WebEx. In a few instances, we also used Skype. This software was already used in the organisation and after considering alternatives, I found that these would not have offered significant advantages compared to the software already in use.

4.4.3 Documents and Photos

During the team meetings, I recognised repeating topics, activities or devices used. For instance, some participants discussed the need to raise forms, as for example capital expenditure requests, on a regular basis. When certain objects became important participants in the flow of practice, I collected them or took photos of them, and these became part of the analysis. For example, I took photos during the meetings and the specific material arrangement within the meeting room. The photos could sometimes not capture all fine details that I found to be relevant. These missing details were then included in the field diary.

4.4.4 Keeping a Field Diary

Writing a field diary included documenting details about settings, non-verbal behaviour, sometimes parts of conversations that occurred before or after the meetings, workshops and everything else I found interesting. “If we fail to write it down, it might as well not have happened!” (Boellstorff et al., 2012, p. 82). I also used the diary to document my feelings, my impression of the team members’ feelings and the overall atmosphere of a setting. Making sketches of the settings was important to me because I had not been given consent to take video recordings. As highlighted by Boellstorff et al. (2012, p. 82), it was challenging to write notes when I was with the participants, because it was disruptive or kept me away from full participation. Boellstorff et al. therefore recommend refining fieldnotes within twenty-four hours, which requires strict discipline. Home was often the most convenient setting to take notes. During these sessions at home I re-enacted what had happened and I came across certain materialities and recognised that specific thoughts emerged in particular situations. I then took further notes on the process, the human and non-human participants, my own thoughts, relations and actions and all objects that participated. At home, I transferred the data to my laptop, which enabled me to keep a large amount of data in one location so that it was manageable. After each week, I transferred the data to an external hard drive to store it in a safe place.

Taking field notes enabled me to revisit my observations later on without having to rely solely on my memory. It imprinted experiences on my mind, something that was helpful for further analysis. This process of spending time to make sense of what I had written down soon became normal to me after recording data. Hammersley and Atkinson (2004), for example, recommend to regularly review field notes. This helped me to recognise how effectively I was documenting observations and if I had to be more elaborate in note taking. Re-reading entries was a useful way of filling gaps, and it helped me to remember interesting moments, which I had missed to write down during the meetings. I also created diagrams of social relations and their developments and timelines of significant events from the workshops.

During my study, I took five different types of written field notes:

1) notes on my observations, which I considered important;
2) theoretical notes, while thinking or reflecting on the experiences;
3) methodological notes, such as instructions or reminders to me on the process;
4) analytical notes, such as summaries; and
5) sketches of the setting and diagrams of relationships.

4.4.5 Pre- and Post-AI Survey

The data collection was complemented by a two-stage pre-AI and post-AI survey process. The survey was used to triangulate with the written data and to inform the answering of the research questions.

Pre- and post-testing is a widely used method for assessing the impact of an intervention. Change surveys “are useful in assessing whether change has occurred as a result of a development initiative” (Hoole & Martineau, 2014, p. 144). The process entailed a pre-test to obtain a better situation at the beginning of the project. After the workshops, a comparable post-test was administered to determine the extent to which a transformation has occurred (Hoole & Martineau, 2014). It is, however, important to realise that changes are rarely attributable to the intervention alone. Pre-test and post-test surveys to evaluate the effect of AI interventions have been used, for example, in the areas of nursing (Chauke, 2014), and education (Waters et al., 2015).

The survey questions (see Appendix A) were guided by the research questions highlighted in Chapter 1. When creating the survey, I followed Creswell’s (2014) guidelines that the questions should be clear and without unnecessary words. The survey consisted of 15 questions, of which 13 were Likert scale questions. Two open-ended questions were included to give the participants the possibility to explain what consituted useful team meetings and successful leadership for them. The open-ended questions complemented the Likert scale questions in the content focus. Using a Likert scale model, each question offered respondents several response options, which differed from question to question.

The workshop teams completed the pre-survey during the initial 2-day kick-off session, which I will further discuss later in this chapter (see also Figure 11). I

arranged an additional meeting with FTF2 team members as they did not participate in the workshops to fill out the survey. The team members of VT2 were asked to fill out the survey electronically, as this team also did not participate in the workshops. Each participant completed the survey. The survey was not anonymous since I found it useful to link their answers to my observations in the meetings and workshops. The team members were aware of this and had given their consent. However, the survey results presented in this study have been anonymised. The post-survey was administered after the last workshop session. I collected the completed surveys as soon as they had been completed.

4.5 Analysing Data

In this section I discuss my approach to analyse the data using an agential realist approach. I have used different kinds of data, such as my writing, field notes, transcripts of meetings, survey results, the contents of the literature review, my workplace and the audio recordings. I considered and reviewed all of these over and over in the analytic phase. I added bits together, then I remembered something I read and tracked down a source, then I rearranged. In other words, it was “a cutting apart and a piecing together” (Ulmer, 2016, p. 1383).

Before going into further detail about the design of the data analysis, the next section defines how I identified leadership in the data.

4.5.1 Focus of Analysis: Leadership Moments

Arguing that leadership is a process may not be controversial (Parry & Bryman, 2006; Schedlitzki & Edwards, 2017). More controversial is to define how to study such a phenomenon (Crevani & Endrissat, 2016). Researchers have pointed out difficulties to study a world that is always already on the move (Urry, 2007), and to find the exact focus of the empirical fieldwork, if leading is to be studied from a practice perspective (Crevani et al., 2014; Simpson, 2016).

In Chapters 2 and 3 I argued that leadership can be understood as process, as moving wave of relations and repetitions; as travelling concept (Simpson et al., 2018a) and action space (Crevani, 2010). On the other hand, it can also be

understood as particle; as leadership moment or turning point (Wood, 2005; Wood, 2010; Crevani et al., 2010; Larsen & Rasmussen, 2015; Simpson et al., 2018b).

In quantum physics, which agential realism is based on, this collapse from a superposition of possibilities (leadership as moving wave of relations and repetitions) into one actual meaning (leadership moment/turning point), is referred to as collapse of a phenomenon`s wave function. In the case of leadership, the collapse takes place in the event in which direction is produced (Crevani, 2010) and the indeterminacy of the action space/the wave is resolved and unfolds into one particular realisation of a possibility. This is in the moment of agential cutting. This collapse is when leadership becomes determinate, which is what Raelin (2016) refers to when he argues that leadership oftentimes emerges during moments of crisis or indeterminacy. These moments of leadership are related to redirections in the flow of action, and the production of direction is described as the core of leadership work (Crevani et al., 2010; Crevani, 2011; Crevani et al., 2014; Crevani, 2015; Crevani and Endrissat, 2016; Simpson et al., 2018b).

In Chapter 3, leadership was identified as diffractive practice. I conceptualised diffraction as an open-ended process of producing direction, which is the core of leadership work (Crevani et al., 2010). Thus, we can identify the existence of leadership in these diffractive events where direction, co-orientaton, and new spaces of action are created. In my analysis, I therefore focus on the production of direction, which I will further explore in the next section.

4.5.1.1 The Production of Direction

Crevani suggests that when conceptualising leadership as production of direction, “we move from what one person does to what the processes are about” (p. 6), and that “although there seems to be no real consensus about how to define leadership in the literature, there is at least one element that characterises most definitions: the production of direction” (2011, p. 19).

This concept focuses explicitly on leadership as it is practiced in mundane practices and routines (Crevani et al., 2010, p. 77), which is where L-a-P researchers understand leadership to emerge. Raelin (2016, p. 12) postulates that “[…] it is the action itself that re-orients the flow of practice towards new directions.” Accordingly, Crevani and Endrissat (2016, p. 42) argue that direction in this sense, cannot be

seen as an outcome, but rather as the situated, moment-by-moment, production of direction. Direction does not mean ‘one direction’; rather, direction may be interpreted as a ‘never-ending-story’, not as ‘happy ending’ (Crevani et al., 2010). To explain this even further, I will use a jazz-metaphor: “The directions [the tune] will take are only decided in the *moment of playing* and will be redetermined each time the tune is played” (Hatch, 1999, p. 85 as cited in Raelin, 2016, p. 4, emphasis added).

The production of direction is achieved through the sub-processes of producing positions and issues (Crevani, 2015; Raelin, 2016), which I will further discuss in the next sections.

4.5.1.2 The Production of Positions

Crevani et al., (2014, p. 8) conceptualised producing positions as “the evolving understanding of who has which formal and informal roles, who is to do what, who is responsible for what, and who should make certain decisions”. It is therefore related to how relational configurations develop (Gergen, 2009). In agential realism, these configurations are defined through agential cutting. These configurations transform during AI workshops, and as directions change, leadership will transform. Barrett & Fry (2005), for example, stress that stories told during the Discovery phase of an AI intervention can have a positive impact on relationships. Bushe (2001) explains how AI can lead to new stories that transform the taken for granted assumptions in a group.

Positioning is a concept that lends itself to a processual analysis, and it allows researchers to “analyze the continuum of discursive practices and their movements by acknowledging the premises of process theory” (Schulz, 2013, p. 80), which emphasise “becoming over being, difference over self-identity, and time and temporality over simple spatial location” (Nayak & Chia, 2011, p. 282).

In order to analyse the production of direction and to unravel how relational configurations are being shaped, it may therefore be helpful to focus on how positions are being articulated and in which relation they are being located.

4.5.1.3 The Production of Issues

Producing positions is closely related to producing issues (Crevani, 2011). The concept of issue is seen as a central factor in leadership work (Smircich and Morgan, 1982; Crevani, 2011). An issue may be considered as a trajectory and producing issues contributes to directing organising processes as the trajectory evolves. More specifically, Crevani et al. (2014, p. 8) understand issues as “temporarily stabilized meanings relating to decision-making processes, past and future events, [and] strategic goals”, which are interrelated and are combined and recombined with one another in the continuous organisation of processes. From an agential realist point of view, they become diffracted. As issues arise, positions might have to be modified, boundaries become challenged, and issues may change (Crevani et al., 2014; Lindgren & Packendorff, 2011). This shows that producing issues and positions are entangled boundary-making practices. “Depending on the direction such structuring takes, different actions will become possible at different times” (Crevani et al., 2014, p. 16), and the diffractions bring unnoticed patterns to light. By issue I also understand a question or utterance produced as attention and emotions become focused. The new or reinforced issues become part of the intra-action and the production of direction. “Hence, when attention and emotions intensify, leading to the emergence of a trajectory (or changing the course of an existing one), the direction other trajectories take, as well as the intensity with which trajectories interrelate with one another, will be affected, influencing how relations are being shaped” (Crevani, 2015, p. 92), as they are all entangled.

Thus, I argue that the topic choice within AI can be regarded as an issue. I further argue that through a reproduction of the topic of inquiry, positions, issues and thus relationships transform, as the flow of practice is redirected. This is the core of leadership work. Therefore, I have also focused on this concept in the analysis. Focusing on both issues and positions allowed me to analyse different dimensions of the production of direction.

4.5.2 Beyond Traditional Data Analysis

4.5.2.1 Material-Discursive Analysis

Now that the production of positions and the production of issues have been identified as central aspects for the analysis, the question comes up of how to analyse these empirically.

The issue for practice researchers is to identify a way of accounting for the emergence of novelty in speech acts. In particular, a focus should be on how talk creates something new, and how it can change the direction of leadership movements (Simpson et al., 2018b). While Wendt (2015) suggests that the speech act is what elicits the collapse of a superposition of possibilities (leadership as wave of relations or action space) into one meaning (leadership moment), I argue slightly differently with the help of Barad. I argue that intra-actions cause the collapse as they enact agential cuts (Barad, 2007), and thus fixation on language alone is suggested to be reductionistic. I therefore focus on material-discursive practice in my analysis (Barad, 2007; Orlikowski & Scott, 2015). In the material-discursive entanglement, we cannot expect language to work (only) in the old ways that were given by discourse or constructionist theories. I argue for taking an expanded view of language, one which does not see language as belonging on one side of two distinct realms - discourse and matter - that will connect. This view still sees discourse and matter as separate. Rather, language is the “metaphysical surface” (MacLure, 2013, p. 663) on which the very distinction between words and things is played out. When taking an agential realist stance, it is therefore important to develop a gaze to see ‘otherwise’ and to develop an ear for the materialities under investigation (Kissman & van Loon, 2019). Thus, I argue for an approach that can engage with the materiality of language itself, its material force and its entanglements (MacLure, 2013). To capture material-discursive practice I therefore extend the focus of a discursive analysis, which proved to be useful in the pilot study, to the material-discursive by combining it with visual inquiry (Bell & Davison, 2013). This allowed me to capture body language, expressions and other artefacts and materialities in the meetings. Of particular importance to the analysis were the photos that I took while I observed the team meetings and sketches of moments that I found relevant for the analysis, but that had passed too fast for me to take a photo. In addition to this, I created sketches

to capture the room layout and seating arrangements of the meetings I observed. As suggested by Hultin and Introna (2019) I did not use photos as representations of a reality observed, but as a way to insert myself into and engage with the flow of material-discursive practice when I was recalling these moments in the analytic phase. I chose this approach for three main reasons:

Firstly, the pilot study findings indicate that discursive analysis is a useful approach to study aspects of leading and that it is useful to consider contextual aspects in the analysis.

Secondly, I used visual inquiry to assist in identifying the less obvious, habitual aspects of leading, which would potentially be overlooked in a traditional discursive analysis. My focus here was to go beyond the mere sensitisation to contextual aspects, focusing more specifically on the movements and flows that arise in the dynamics of leading (Simpson et al., 2018b) to capture leadership.

Thirdly, to capture materialisations it is important to consider discourses, because discourses are forming and functioning at the interface of the linguistic and material worlds (Hardy & Thomas, 2015). Hardy and Thomas (p. 680) argue that “a discursive approach is eminently suited to the study of materiality”, and “that discursive approaches have much to contribute to a deeper understanding of the relationship between discourse and materiality, by recognising that the two are ‘inextricably entwined’ […]”. The discourse does not pre-exist its specific material production as speech, email, or document in specific times and places.

The question arises how to identify acts of leadership in the analysis. Empirical studies that analyse leadership moments from such a perspective are rare. In their study about leadership talk in a senior management team, Simpson et al. (2018b) focus on the performative effects of turning points and on situations where remembered pasts and anticipated futures are adjacent in the same speech act. They refer to Mead (1932) who “proposed that novel actions arise in talk when an existing state of affairs and a potential alternative condition are juxtaposed. He departed from the familiar ‘arrow of time’ in which past, present and future follow in clock-ordered sequence, to develop an experiential understanding of temporality, where a ‘present’ is constituted as an active turning point in the flow of social practice […] Remembered pasts and anticipated futures are, in Mead’s formulation,

epistemological resources that are continuously reconstructed to inform present action, but for him it is in the actions or turning points of ‘presents’ that ontological reality resides. By bringing together a particular past and a particular future, present action is generated” (Simpson et al., 2018b, p. 649). This works well with Barad who has also departed from a traditional understanding of past, present and future as being separated and running in one direction. From a quantum perspective, the past and the future are entangled into each other (Boje, 2019, p. 163). It also works well with an understanding of leadership as production of direction, because, as argued before, issues can be understood as trajectories and positioning practices are intertwined with the production of issues.

4.5.2.2 Tagging

Having established leadership moments (or: turning points) as focus of the analysis, the data was then tagged (Schadler, 2019). While tagging is quite similar to coding, I approached this process with an agential realist gaze, which means that this approach is not defined by bounded sets of practices but rather by openness and appreciation for where our experiences with data might take us (MacLure, 2016). In addition, the purpose of tagging is to identify boundary-making practices (Schadler, 2019). It thus was an appropriate choice as the production of direction is a boundary-making practice (Crevani, 2011). The various tags that were identified were clustered and sub-phenomena emerged. In traditional qualitative data analysis, data is usually coded to look for patterns in the data, identify relevant themes and determine the relationship between the themes (Charmaz, 2014). This attempt to stabilise essence through coding and to produce order through categorisations can erase difference (St. Pierre, 2000, 2011), whereas agential realism is very much about highlighting differences. The practice of coding data also essentialises people and their experiences and it is a humanist and representationalist concept (St. Pierre & Jackson, 2014). Such an approach is therefore very much related to the metaphor of reflection that I aim to overcome. Agential realism, however, challenges this, and sees coding as a retroactive, knowledge-producing operation that makes things stand still (MacLure, 2013). For me, tagging was about the creation of agential cuts. It was about creating boundaries and about resolving some of the indeterminacy in the data by cutting some of the data together-apart (Barad, 2007). Agential realist research makes use of diffractive analysis that can be understood as an

engagement with the research data to uncover “how something different comes to matter” (Davies, 2014, p. 734), which produces new knowledge (Mauthner, 2015). The practice of tagging is useful in a diffractive analysis (Schadler, 2019), and I was able to use the cut pieces of data to set temporary boundaries, make sense of the data and see new relations. Schadler (2019) argues that in this process, researchers enact agential cuts to create new boundaries in the research material within which they are entangled. Schadler uses the term ‘rebuilding worlds’ to refer to the process of collecting insights from research materials and enacting agential cuts to present them as written academic texts.

“[T]he process of tagging marks the information and relates it to specific processes and their boundary making practices” (Schadler, 2019, p. 223). In the tagging process, “[t]he researcher, the theory, the tools and the data are working together, and they are defining tags” (p. 223). Tagging identifies parts of data, topics and narrations that form dense boundaries (Schadler, 2019). I argue this practice is useful to study the production of direction, which is a boundary-making practice.

While tagging, I found that complaining about a problem seemed to differ from highlighting processes that are working well. Therefore, ‘problematising’ and ‘appreciating’ were assigned to matching processes in the data. The tags and their references to several aspects of the data led to sub-phenomena, like the production of issues. Therefore, the performative effects of certain material-discursive processes in the data were ‘problematising’ and ‘appreciating’, which contributed to the process of producing issues, which again is one element of the production of direction. Such a turning point is enacting differences; it is an agential cut (Barad, 2007). These performative effects and their sub-phenomena then generated further sub-phenomena. For example, in the pre-AI phase, they generated the sub-phenomenon ‘Ongoing Struggles and Problematic Otherness’, which will be further described in Chapter 5. What I am doing in my analysis is the unfolding of material-discursive processes to make the entangled folds, the different sub-phenomena, visible.

At the end of this process, each piece of data became attached to one or more sub-phenomena. Some sub-phenomena, as for example ‘challenging’, sometimes contributed directly to the production of issues and positions and could therefore create different sub-phenomena. From an agential realist perspective, these sub-

phenomena are an effect of the theories, literature reviews, the data, the researcher, and research conventions. They include the sedimented histories of the data, but also the practices of the research process. “The process of referencing makes use of this concept” (Schadler, 2019, p. 223).

4.5.2.3 Referencing

If a phenomenon includes a sedimented history (Barad, 2007) of boundary-making processes (e.g. the phenomenon of ‘Ongoing Struggles and Problematic Otherness’ contains a trace of all the performative effects and sub-phenomena that contributed to its emergence) the goal of an agential realist analysis is to rebuild this sedimented history (Schadler, 2019). “As the rings of trees mark the sedimented history of their intra-actions within and as part of the world, so matter carries within itself the sedimented historicalities of the practices through which it is produced as part of its ongoing becoming - it is ingrained and enriched in its becoming” (Barad, 2007, p. 180).

According to Schadler (2019), these differentiation processes leave a trace during their material becoming. Through this trace, the processes can then be reproduced. However, the identification of traces comes with challenges, as it is unlikely to have unfiltered access to original processes. Referencing allows to define a set of processes that may have been the basis of a present situation. This is a simplification, of course. Doing research is a boundary-making practice itself, and by reproducing these processes, the researcher draws boundaries, includes and excludes, and defines the research object. The effects are descriptions of a world, its inhabitants and processes. These outcomes include the sedimented histories of the agential realist research process entangled with the past differentiation processes in a present process of becoming. The outcomes are, however, not a representation of these past differentiation processes, but a product of all those agencies collaborating and producing research that has a reference to sedimentations of past differentiation processes within them (Schadler, 2019).

I used the tags to categorise the data, which produced several sub-phenomena, as described above. These categories were referring to field diary notes, audio-recordings, and photos. This section explains how I rebuilt processes from multiple

types of data. Both the data and the type of the data play an active role in the referencing process and contribute to how referencing is enacted.

4.5.2.3.1 Audio-Recordings

I explain the process of referencing based on one specific leadership moment, in this case ‘problematising’. I read through the transcribed recordings slowly and simultaneously listened to the recordings. The comments the participants made, and the tone of their voices became points of reference for sedimented processes. As processes, intra-actions and boundary-making practices are of importance in agential realism, the analytic process enacts references to these particular issues (Schadler, 2019).

The objective is to create a list of possible activities and boundaries contributing to the production of direction. I understand this as an activity of referring to the specific enactment of the phenomenon. The example below illustrates this process.

Jim: Many promises on investments were made in the past, but nothing has changed. I’m fed up with this. [Problematising]

I made the following references for this piece of data:

There seems to be a history of broken promises about investments, and Jim seems to be unhappy with the current level of investments. He considers more investments are required to allow for the transformation he understands to be required. His utterance indicates that he expects others to make this investment, probably the senior management team who decide about investments. He sees others as responsible, which creates a boundary between his team and the senior management team. His utterance therefore indicates that he understands his space of action to be limited. Jim is problematising this situation. What he said, and also his tone of voice, indicate that he will not accept this situation much longer and that he is very frustrated.

These references show how many sediments two lines of text can surface. They become the foundation for further tagging, which forms the raw material for a written analysis.

I would like to clarify that I did not understand these words as representations of past events, but as the record of the practice of observing and audio recording, which

also includes sediments and traces of past processes. However, the data does not represent the past; "*it is a specific past enacted in present processes of becoming within the phenomenon of research"* (Schadler, 2019, p. 225).

4.5.2.3.2 Field Diary Notes

I first reviewed my notes regarding this leadership moment and made references to possible processes. I documented all the references that I could think of, even when they did not seem to be relevant.

Note: Jim was very frustrated. I remember that he complained about this various times before and also before I have seen others agreeing with him, Again, the other team members agree with him. Many of them are nodding, which I can see on the monitor. Have I not pushed the senior management team enough to get these investments approved? We have many old machines, and these are breaking down regularly. Do they really need to be replaced or can we think more creatively to extend their lifetime and reduce breakdowns? Investing is the easy answer but is there anything else we can do?

The following references were made for this piece of data:

There is a CAPEX process and this machine is breaking down regularly. We have put it onto the CAPEX plan every year, but the investment has not been approved yet. Others generally agree with Jim and this seems to reinforce the issue and creates a boundary between 'them' as team and the senior management team who are approving capital investments. I see myself as in a between space between VT1 and the senior management team and I have to consider both sides. I also get pressure from both sides and it is hard to make both happy. I realise that I am also creating boundaries by thinking this way. On one hand it's about spend control and on the other hand about ensuring that all machines are running. I sense the frustration in the team. The team produces the issue as significant problem that holds the team back. The history of many breakdowns and the questions we are being asked about missed deadlines every month have most likely contributed to this frustration. The team also seems to be frustrated as the monitor and the geographical distance act as barrier and they cannot go to the machine, look at it and see what's wrong with it first-hand.

This is a small extract of the references I created. In other notes, different topics emerge. There are references to technological devices, such as machines or computers, to physical environments, company structures, and rules and guidelines, just to name a few. Referencing rebuilds the “complexity of the current world’s differentiation” (Schadler, 2019, p. 226). In this analysis, it becomes clear how important it is to rebuild this complexity and consider as many influencing factors as possible, which has been very time-consuming. A situation as simple as problematising a machine breakdown refers to an extremely complex network of processes and events.

4.5.2.3.3 Photos and Artefacts

I took photos of the machine, copied the capital expenditure request (CER) that was not approved and all the related data, which was, for example, showing the costs related to the recent breakdowns. The data also included costs of the proposed investment and the calculated payback time. I included all of these in a database. Thus, these objects also became part of the analysis. I studied the CER thoroughly and made references similar to the ones described in the previous examples. I tried to understand which processes made a person or a team write these particular words in this document? Which processes could have contributed to the situation where these specific words were used? How can these words be understood and how could someone else understand these? Why was the CER rejected? What could be done to get it approved? This process created several pages of references.

4.5.2.3.4 The consequence of referencing

The referencing process is the foundation for more data collection and subject to further tagging processes (Schadler, 2019). This procedure of data collection, tagging and analysis cannot be considered as linear as I have illustrated it here. For me it has been, in Holbrook and Pourchier’s (2014) account of research, not a clear and straightforward or linear process, but rather a mixing and remixing, a juxtaposing and erasing, a doing and doubting. During the referencing process, I created numerous referencing documents. When starting the referencing, each document refers to a single note, but each document ends up referencing a large number of existing and new material. In this process, tags were used to categorise these

references and include the reference documents into the data collection. The resulting sub-phenomena supported me to recreate the world from various perspectives.

While the text extracts presented in Chapter 6 are short sequences of team meetings my objective is to demonstrate how several participants of the process intra-act and become with each other to enact agential cuts and produce direction. My objective is to rebuild a world that makes it possible to understand particular boundaries, relationships and redirections. The intention is also to make participants of an entanglement become visible, such as the elements that contribute to the production of direction in a team. In Schadler´s words (2019, p. 228): “This enables a complex description of the already differentiated world of which I was a part. I was able to talk about, hence making references to, a world I am simultaneously researching, reconfiguring and inhabiting.”

4.6 The Workshop Process of Appreciative Inquiring

Having described and discussed the methods of data collection and analysis employed, I will now present the AI workshop process. Only FTF1 and VT1 participated in this process. My intention was to compare the transformations in the workshop teams with any shifts in leadership practice that occurred in the non-workshop teams over the same time period. The other main objective was to understand if the differences that occurred originated mainly from the AI process. This would not have been possible without the two reference teams FTF2 and VT2. Chapter 3 suggested to develop the concept of AI further and to conceptualise it as apparatus of appreciative inquiring. Thus, the AI workshop design in this study differs from inter-actional and human-focused appreciative inquiries present in the literature due to the application of an agential realist perspective.

There are three main differences between the AI workshop design in this study and traditional appreciative inquiries, which are outlined in the next section.

4.6.1 The Workshop Assumptions

The workshops were based on various assumptions identified in the literature reviews, which allowed me to develop AI into a process of L-a-PD.

Chapter 2 identified how L-a-PD in organisations should be carried out:

1) as collaborative learning process associated with lived experience that involves learners to review and renew their understanding of leadership by experimenting with their own practice in wayfinding processes;
2) it should explore the scene of everyday action and originate out of the context and challenges that people face collectively;
3) it is experiential, interactive, situated, embodied, sustained, and involves relational activities that create a new kind of engagement with others and the world; and
4) it introduces a disruptive dynamic that attempts to generate new and previously unconsidered possibilities by producing desired futures.

Denyer and Turnbull James (2016) have recommended to form teams, which focus on learning about collaboration and shared leadership practice, and they achieve this by integrating three forms of knowledge:

1) knowledge that the learners themselves bring;
2) practical and theoretical public knowledge to frame, support, or challenge participants' thinking; and
3) knowledge that is collaboratively produced or developed in the program.

Chapter 3 discussed how AI approaches should be understood as process of intra-vening, which

1) focuses on *possibilities (action space)* instead of on the essence of the positive;
2) continously generates focus, produces directions, and resolves indeterminacy;
3) is part of the phenomenon that 'it' enacts; and
4) is a world-shaping activity that extends its focus to material aspects.

In my attempt to give voice to team members and to let them initiate the transformation, the workshops were co-created with the teams. There was no static workshop design that was imposed on the teams. There were guidelines and a

proposed agenda, which became flexible and the teams made it their own (see Appendix C). Towards the end of each workshop day, a group of two people in each the face-to-face and the virtual teams were selected by the other team members to facilitate the next session. I was available to support the facilitators, and to prepare with them for the workshop day.

4.6.2 AI Workshops

The workshop series consisted of 8 workshop days for each workshop team and an initial 2-day kick-off event:

1) 2-day kick-off event (Defining)
2) Workshop day one (Discovering)
3) Workshop day two (Discovering/Dreaming)
4) Workshop day three (Designing)
5) Workshop day four (Delivering)
6) Workshop days five to eight (Delivering/Discussing)

4.6.2.1 Defining the Workshop

In August 2016, a 2-day kick-off event was held in a hotel near the German head office. FTF1 and VT1 were invited to attend this event. It was one kick-off event and team members of both teams attended this event in person. At this point I would like to highlight that this is not the usual mode of working together as a team for VT1 team members, as they usually communicate through CT. However, as my objective was to understand how leadership practice transformed in the teams, it was useful to have a common departure point for both teams. The kick-off event gave team members also the opportunity to meet, to form relationships and to learn from each other face-to-face.

Figure 12: Anonymised photo taken during the 2-day kick-off event

All invited team members participated in the kick-off event. They received AI training, defined the AI focus, and filled out the pre-AI survey. Full participation was ensured through careful planning, which involved:

1) discussing the project in advance with the team members;
2) sending out emails highlighting the purpose of the project and distributing information sheets;
3) giving team members the opportunity to select a preferred date for the two-day event;
4) choosing the date, which most team members opted for;
5) contacting team members that had chosen another date to identify ways how they could attend;
6) negotiating and agreeing on moving holidays;
7) asking for a written commitment of the team members to attend; and
8) booking of flights and hotel rooms centrally through the head office.

The team members were given time off work to be able to put their whole mind onto the 2-day event.

This event served the following central purposes:

1) to introduce AI;
2) to define the scope of the inquiry;
3) to shift the focus from describing problems to determining possibilities;
4) to let them answer the pre-workshop survey; and
5) to answer any questions of the participants.

On the first day, the team members filled out the pre-AI survey. An AI introduction session followed, in which I explained the purpose of my research project and the details and background of AI. I clarified my intention to co-create new ways of conducting leadership with the teams. Although this already set the expectation to focus on leadership, I did not give a lecture on leadership in order not to narrow down possible diffractions that could result in new opportunities. My plan was for them to work out what leadership meant to them individually and as team, thus enabling them to further detail the scope of the inquiry on their own. My intention was to give the teams as much influence as possible on the workshop design.

In an exercise, the team members then thought about what leadership in their team meant to them personally. We used coloured post-it notes to document individual responses. In this collaborative process the different views were diffracted, and a new diffraction pattern appeared: a team response emerged. The teams were encouraged to develop up to three sub-topics of leadership to focus on in the inquiry. The following topics emerged as team response:

1) Motivate people
2) Make decisions
3) Take the initiative to make progress and change the status quo

After the team response had been communicated, they were asked to identify inquiry questions that related to the topics. The teams received handouts and could draw from their knowledge of the introductory training.

The teams came up with the following three inquiry questions:

1) Remember a time when you felt most alive, motivated, or most excited about your involvement in the team. What made it particularly exciting and who else was involved?
2) Recall a time when a decision was made that helped to achieve something that benefitted all.
3) Tell about a time when new ways of doing things helped your team to change the status quo and achieve something important. Can you describe what happened specifically?

Towards the end of the first day, I noticed an unhelpful pattern developing as a few team members did not actively participate. I addressed this issue and some team members expressed concerns that important issues were not being addressed and the potential of the dialogue thereby undermined. I wondered, “how can we really ‘do’ AI if people do not feel free to express themselves openly?“ It was important to address this issue as the AI process should explore the scene of everyday action and originate out of the challenges that people face collectively, so all concerns needed to be addressed. I could not get over the feeling that some team members were experiencing a kind of oppression or were simply too shy to speak up. This could eventually damage any efforts to carry out an inquiry into the organisation’s many potentials if I could not work out how to engage these people. I investigated this further and it appeared that I had to encourage team members more actively to express negative content. This led to an intentional inquiry question that I asked:

- What concerns and reservations do you have, and how can these be addressed?

Initially, there was no response. Finally, one person replied: “Well, I do not know about this positive and strengths stuff. It is really difficult to apply on a daily basis.” There were some other participants who expressed their opinions as well. Eventually we found ourselves in an open conversation and collaborated to come up with a few strategies to address the concerns. Additional inquiry questions emerged, and the decision was made to put emphasis on the difficulties of an AI process, in order to create a richer response to the inquiry. I welcomed this development as it addressed the boundaries the teams were facing daily. We picked this up on the second day, when we did some brainstorming on which type of questions could be helpful to

resolve the difficulties we had experienced. By including these questions that addressed the ‘shadow’ side of the inquiry, I also addressed one of the main aspects AI has recently been criticised for: recognising that “[i]n exclusively favouring positive narratives, AI fails to value the opportunities for positive change that are possible from negative eperiences such as embarrassing events, periods of anger, anxiety, fear or shame […] moreover, in privileging positive talk, it fails to engage with the emotionally ambiguous circumstances of the workplace, such as when individuals feel torn between competing possibilities and differing voices“ (Fineman, 2006, p. 275).

By including the following inquiry questions, we transcended the trap of opposites and dualisms, which helped the teams to investigate into what lies beyond positive and negative, problem and solution, and towards: where is life? Or: What matters most to the teams in the given situation – the differences that matter. I was happy to include these questions, because such work into the shadow “allows us to reclaim parts of ourselves that bring us into wholeness” (Kolodziejski, 2004, p.16).

1) Which concerns do you have and how could these concerns be addressed?
2) Did you have similar concerns in the past? If yes, how did you manage to address them successfully?
3) When do you feel most capable of offering opposing opinions?

Towards the end of the second day, the teams decided about the timings of the workshops. It was decided that workshops one and two were carried out with just a few days between them. The third workshop was carried out a week later, giving the team members some time to reflect. The fourth workshop followed a week after the third workshop. The time between the fourth and fifth workshop was extended to two weeks, and workshop six followed three weeks later, workshop seven four weeks later, and workshop eight followed six weeks later. The teams decided on two persons of each team team to facilitate the next session.

After the kick-off event, there were separate workshop sessions for VT1 and FTF1. While VT1 team members attended their workshop sessions virtually by using AIT, FTF1 attended their workshop sessions face-to-face. This gave the team members of both teams the possibility to run and influence the workshop sessions based on

their needs and to generate new ways of doing leadership that works for them. These workshop sessions will be discussed in the next sections.

4.6.2.2 Discovering

In this workshop, participants were *Discovering what gives life* by interviewing each other using the questions that had been defined in the kick-off event (Cooperrider et al., 2008). This task consisted of:

- Preparing an interview
- Conducting interviews
- Analysing results

The personal stories that were told in this exercise provided richer information than merely listening to strengths. It is also particularly useful in this project because stories are created by the teller, which reinforces the idea of AI as collaborative learning process. Stories engage imagination and enable socialisation, “which creates a space for that tacit-to-tacit exchange to happen” (Thatchenkery & Chowdhry, 2007, p. 30). They can also create a framework to generate more ideas of what else could easily work well in the organisation. I encouraged the participants to include material aspects, such as technologies in their stories.

Figure 13: Anonymised photo from the interview process

The participants analysed their stories in pairs and documented strengths, values, wishes and concerns on posters. Out of these, the teams were asked to draw central themes, which are connecting ideas that are present in the stories when participants talk about their moments of greatest achievement (Ludema et al., 2003). “Themes become the basis for collectively imagining what the organisation would be like if the exceptional moments that we have uncovered in the interviews became the norm in the organisation.” (Watkins & Mohr, 2001).

By the end of this session, each participant reported back to the entire group about their interviews and stories were retold. The teams presented their list of themes to the wider group. After every presentation, I asked the group to express their opinions about the themes and, in the spirit of AI, to value them (Cooperrider et al., 2008). A lively discussion followed.

The team’s next task was to identify areas of strongest general interest. To do this, each person received three dots of the same color and could use these to vote for a theme of their choice. Each participant had three votes but could only use one vote per theme. The themes of each group were then distilled down to a central list of potentials. The lists for FTF1 and VT1 can be seen in Table 3, as it was recorded on a poster.

Table 3: Discovering phase potential list for each team as they were recorded.

Central List of Potentials	
Face-to-Face Team 1	**Virtual Team 1**

- Clear goals
- Sense of urgency
- Engagement
- Flexibility
- Mutual respect
	- Having clarity about
	  o Communication
	  o Goals
	- Trust
	- Teamwork/Relationships
	- Self-direction
	- Support

The central list of themes provides insight into the forces in the stories most participants found life-giving. They provided the foundation for the Dreaming phase and for determining possibilities.

The teams were asked to provide feedback about Discovering. The feedback was written on post-it notes and put on a poster, which was collected and stored for later use. The teams also identified two persons to facilitate the next workshop day.

Figure 14: Discussion in the Discovering phase

4.6.2.3 Dreaming

While Dreaming what could be, based on the Discovering phase, the teams created shared images for a desired future. They were asked to imagine the potentials (themes from the previous phase) as being constantly alive. A tangible vision forms the foundation to define guiding and developing actions that allow to work towards a realisation of the preferred life-giving vision (Cooperrider et al., 2008). The participants were invited to join on a journey to a successful future, in which the team has successfully built upon the opportunities expressed in their stories. A guided visualisation was used to support the participants to enter that vision:

“You have been gone from W-Tech for a year. When you return, you see that many of your dreams for the team have been realised. As you return, what do you see and

feel? What are people talking about? Who are the decision-makers? What are the achievements? What has pleased you most about what you have seen and heard?"

I reinforced the point that this was a practical activity based on past events and their own experiences in practice. The team members then documented their dreams and created a poster visualisation.

The participants then formed groups of three or four. They then described their visions and discussed similarities and differences between the visions and documented unique or unusual aspects. Each group created a composite picture of their shared vision, which was then presented to the main group.

After the presentations, the teams discussed the visions and worked on creating a shared team vision. These are some questions the teams used while working on the shared vision:

- Which main themes and ideas emerge from the visions?
- Do these reinforce existing potentials?
- In which way do the visions differ?
- Are relevant factors missing?
- Are the visions challenging enough, but still achievable?

4.6.2.4 Designing

In this session, the teams reviewed the shared vision and the participants designed actions to work towards the desired future.

I explained that they could now begin to design a plan on how to make changes needed to realise their dreams (Cooperrider et al., 2008). This is usually when provocative propositions are created based on the vision from the previous phase (Cooperrider et al., 2008). To do this, the team members formed groups of 2 or 3 people to create statements that described the vision.

They were then supposed to sort the aspects of the vision into short-range, medium-range, and long-range objectives:

- Short-term: Achievable within one week
- Medium-term: Achievable within three weeks

- Long-term: Achievable within twelve weeks

Each group then presented their results, followed by a lively discussion. Once the entire team was in agreement with the targets, they began working on defining actions to support the elements of the vision. In the next exercise, the groups were asked to create a monitoring plan for their suggested actions. They were given the task to think about the who, what, when, why, and how of monitoring. Afterwards, we discussed the results and created a unified monitoring plan (Cooperrider et al., 2008). The day ended with another feedback session and with selecting two facilitators for the next workshop.

4.6.2.5 Delivering

When Delivering, participants mobilise resources, engage in new relationships, learn new skills, and implement the action plan (Cooperrider et al., 2008). The team members formed pairs and worked on identifying ways how the group could strengthen the Delivering stage. The following questions were posted on a flip chart beforehand:

- Imagine that you have completed the planning phase and implementation has started:
    - What are the actions you should be taking?
    - Which decisions could you be making?
    - Which unanticipated happenings should you be expecting?

After this, the team members were asked to write down their personal commitment on a card to help ensure that they reach their goals.

After the review of the day, the workshop closed with a feedback session and with selecting two facilitators per team for the next workshop. Each team member also received some homework to deliver the vision.

4.6.2.6 Delivering (Follow-up Workshops)

The Delivering workshop was followed by several review workshops. The idea of these workshops was to review the progress together. In the follow-up workshops, we discussed the progress that was made and if the teams were on track with

delivering the vision. This phase closes the AI circle as delivering is supposed to become the focus for discovering ‘what gives life’.

4.7 Challenges and Limitations

One challenge in this research project was to present the data as a collaborative achievement of various intra-actors, such as the researcher, the team members, research methods applied, theories employed and artefacts or objects. I also strived to make the findings understandable to a broad audience that might not be familiar with agential realism. The process of writing this thesis involved a lot of trial and error and ‘back and forth’. From an agential realist perspective, writing means to enact boundaries and to rebuild a world (Schadler, 2019). My initial plan was to work in a systematic way that I could describe and document. In the process, however, I realised that this was unproductive and productive at the same time, because when I attempted to follow pre-defined steps, I recognised that I was heading towards new understandings. However, each time I thought I had achieved something, I experienced slippage. I oftentimes captured “the place in the in-between where language hesitates and falters, where un/certainty cannot be represented, and where knowledge remains unspoken” (Springgay, 2008, p. 160). When diffracting, i.e. when understanding the data through my understandings of theory, practice and experience, I found that I had difficulties to ‘capture’ my thought processes and oftentimes moved back and forth in my thinking. In this strange relationship of chaos and order, of collapsing of potentialities into specific meanings and of spreading out again into a superposition of possibilities, I recognised transactions of making and thinking that I could not put in words but which guided my practice. Writing this thesis was an embodied experience and very different from only thinking. It was about feeling urgency and frustration, the speeding up of the heart. It was about sensing something is afoot in the analysis, about diving into it, expecting that in the cutting together and apart of my data, meaning becomes unravelled, and gets stitched into the thesis.

One main benefit of participant observation is that the researcher can become very familiar with the participants. However, this naturally puts a limitation on the number of participants of a research study. This study was carried out with a group of 52 participants. This number may raise questions about the generalisability of the data

and the analysis. However, these questions are not that relevant for agential realist studies. Much more relevant, from an agential realist point of view, is to understand if a study is ethical and, hence, whether it is valid. This validity can be identified in the exploration in real time of a fieldwork setting and a recording through various mediums of events as experienced through the researcher-instrument. The immersion in participant observation is perhaps then the ideal method to practice ethical, accountable materialisations of phenomena. As I could spend such an extended period of time with my participants, this gave me multiple opportunities to document events unfolding in the workshops and meetings rather than drawing conclusions from isolated observations, which itself increases the reliability of my interpretations (Davies, 1998).

4.8 Chapter Summary

In this chapter, I presented the methodology that I designed to realise the vision from the Dreaming phase. This chapter engaged with the question *how* to apply AI and agential realism to answer the research questions.

The chapter started with an introduction of the pilot study, in which I had identified that different research methods could determine different facets of leading. The pilot study had shown that by including wider contextual and historical factors in the analysis, more facets of leading could be determined and a richer analysis could be provided. I also described the wider context of this study, including a description of the host company W-Tech. I highlighted that W-Tech had formed four project teams to support the global expansion of the business and to standardise production processes across different subsidiaries. Two of these teams were face-to-face teams located in Germany, and the other two teams were virtual teams. The project teams typically worked on similar projects. I went on to situate myself in the research and outlined the advantages of having insider knowledge and argued that some of the concerns that have historically been raised about the validity of research carried out by an insider should not be seen as concerns from an agential realist perspective. From an agential realist point of view, it is not possible to take an external observer perspective, because we always intra-act and the researcher is part of the apparatus. I discussed ethical aspects and the process of gaining consent from the participants. I also covered what I did in case I recorded a conversation of people

who were not participating in the study and had not given consent. I discussed the different data collection methods and how these were adapted to suit the agential realist perspective, as for example by expanding the view to capture material aspects in the observations, which was supported by taking photos and audio-recordings. To support the comparative analysis, a pre- and a post-survey were carried out to understand more about the participants' understanding of leadership. I then discussed data analysis. This chapter further explored leadership moments that had been identified in the previous chapter as focus of analysis. It was highlighted that the practices of producing positions and issues contribute to the production of direction, which is the core of leadership work. Thus, these are also to be considered as material-discursive and entangled practices. In the data analysis process, tagging was used to cut the entangled data together-apart. This was useful as, while coding erases differences due to its focus on reflection, tagging exposes differences, which is what agential realist researchers are looking for. The focus in the analysis was to identify novelty in speech acts to find out how the novelty changed the direction of leadership movements. However, from an agential realist viewpoint my perspective is that the material and the discursive are entangled. As intra-actions enact agential cuts, fixation on language alone is suggested to be reductionistic when trying to fully understand reality in its entire complexity. The primary semantic units I focus on in my analysis to determine leadership moments are not words, but material-discursive practice. Novelty was identified by focusing on the production of direction, which is a boundary-making practice. The processes of tagging and referencing processes to the various data created sub-phenomena. The objective of such a diffractive analysis is to rebuild processes. However, the outcomes do not represent these past differentiation processes. They are an outcome of all those phenomena working together and producing research that refers to sedimentations of past differentiation processes within them. This chapter also specified the L-a-PD process. While I provided training and some guidelines to the team members, my objective was to give them as much influence as possible in the workshop design. Thus, the workshop series emerged as collaborative learning process associated with lived experience. To transcend the dualist notions that are usually found in AI theory and practice, the team members were encouraged to expand their view and consider material aspects in their tasks. By considering concerns and the 'shadow' side of inquiry, it was my objective to move beyond the traditional focus of AI on the positive.

This increased a focus on possibilities and spaces of action of the team members. By generating focus, several directions were produced within/by the apparatus. The apparatus can thus be understood as enacting leadership moments, and it can also be understood as being part of the phenomenon that it creates, which, in this case, is new ways of doing leadership.

5 Delivering: The Temporal Unfolding of Leadership

5.1 Introduction

The previous Designing chapter focused on designing *what should be* done to bring the dreams created in the Dreaming chapter to life (Cooperrider et al., 2008). This chapter is one of two chapters dealing with the delivery of this design. According to Cooperrider, this phase is about innovating what will be. Thus, this chapter shows how ideas emerged through the application of the research design and it also creates the space for ideas to flow and develop by presenting the findings and by drawing conclusions, which paves the way for the discussion chapter.

This chapter looks at how leadership practice transformed in an L-a-PD process (Denyer & Turnbull James, 2016) in each team. In this chapter, I show the temporal unfolding of the material-discursive practice (Barad, 2007) of leadership through its sub-phenomena of producing positions and issues (Crevani, 2011). I understand these moments of leadership practice as processes of agential cutting through which boundaries are enacted that materialise as positions and issues. By observing team meetings, I explored this enactment of leadership practice in situ in everyday, social settings (Sergi, 2016). This study therefore connects to the field of L-a-P that has recently begun to show an interest in leadership as lived experience (Raelin, 2016) and in the in situ investigation of daily routines from which directions emerge (Crevani et al., 2010). By studying L-a-P in virtual teams I connect the phenomenon of e-leadership to a practice perspective, which is something that has not been studied before from an agential realist perspective. By observing a series of team meetings over time, I moved along with the fluid leadership phenomenon from meeting to meeting and followed the redirection of actions that were, as they unfolded, already on their way to somewhere else. This allowed me to trace the development of the material-discursive practice of leadership and the enacted boundaries over time in the different teams.

The order of this chapter is as follows. First, in section 5.2, I explain how the design of the methodology was applied in detail. Section 5.3 deals with the ‘differences that matter’ (Barad, 2007) that were produced in team meetings, and I explain the related

sub-phenomena of produced positions and issues in more detail. I also discuss the process of identifying these. Section 5.4 identifies the leadership moments or processes of agential cutting and enacting boundaries that produced these differences. Section 5.5 draws on the two preceding steps and focuses on how leadership practice unfolded over the course of the sessions. In this section, I present an overview of how the produced positions and issues and the leadership moments unfolded in the different phases of the project. Out of this, higher level patterns and related sub-phenomena of leadership were identified. This forms the base for further analysis in the next chapter. A summary closes the chapter.

5.2 The Application of the Design

One objective of this study was to understand how the leadership phenomenon transformed throughout the project in the different teams. To understand a phenomenon, it is important to understand the diffractions that contribute to its emergence. To understand the diffractions, it is important to understand the differences that matter (the enacted boundaries) and the material-discursive practices producing these differences (Barad, 2007). In analogy with Bateson's (1979) dictum of finding a difference that makes a difference, and the agential realist claim to find differences that matter (Barad, 2007), it therefore became my objective to identify material-discursive moves that made a difference in the enactment of leadership practice by carrying out a diffractive analysis that uncovers "how something different comes to matter" (Davies, 2014, p. 734).

As agential cutting creates differences (Barad, 2007), this process is the focus of this analysis. As conceptualised in the previous chapters, leadership can be understood as a diffractive practice that is enacting agential cutting, which creates boundaries by cutting things together and apart (Barad, 2007). This resonates with the idea of leadership being entangled with a space of action that is continuously transforming due to boundary-making practices and thereby determines possibilities for actions (Crevani, 2011; Lindgren & Packendorff, 2011). By using a diffractive analysis I also transcend humanist and dualist tendencies so often found in traditional processes of data analysis and conceptualisations of leadership, e-leadership and AI. The agential realist stance also made the traditional distinction between qualitative and quantitative methods blur as I blended in the analysis of two surveys into this

chapter. This was a process of diffracting, as this combining of the different types of data led to new insights about leadership in the teams that otherwise would not have emerged. I analysed data from 14 observed meetings in each team, which added up to 56 meetings in total, during which a range of business-related issues and positions were produced. The data that informed this chapter were extracted from 98 hours of audio-recorded conversations. The analysis was carried out in different phases. I argue that, even though Barad (2007) is not specific about how to carry out a diffractive analysis in an empirical study, such a multi-phase analysis is helpful to come to an understanding of the different processes contributing to the production of leadership and their temporal unfolding.

First, with the help of tagging, I identified the differences that were enacted as boundaries (Schadler, 2019) by identifying the *produced and materialised* positions and issues. This analytic move is crucial from an agential realist perspective as it is the differences in the form of boundaries that are formative of matter and meaning (Barad, 2007). “While traditional coding methods are used to categorize and reduce information, the process of tagging marks the information and relates it to specific processes and their boundary making practices” (Schadler, 2019, p. 223). Thus, the main focus in this analytic move was the identification of *agential cuts*.

In a second analytical move I focused on material-discursive practices by focusing on the practices of *producing* positions and issues, i.e. the practices that produced these differences. Thus, the focus of this move was the identification of boundary-making processes of *agential cutting* (leadership moments). I identified the different leadership moments of agential cutting by focusing on the novelty generated in speech acts and by creating references between the boundary-making practices and their effects (the differences identified in the first analytical move).

While these two analytical moves do not sufficiently take temporality into account, the third one does. Here I analyse how the identified differences (the produced positions and issues from the first analytical move) and the material-discursive practices producing these (the leadership moments) develop over the course of the project. This step uncovers the diffraction patterns and leads to the pattern of differences that were produced throughout the project.

The fourth analytical move, which is presented in the next chapter, binds together the preceding moves. This last move of analysis brings out the repetitive temporal patterns (Langley et al., 2013) visible in each meeting. While the previous analytical move shows the diffraction patterns and how leadership developed over the course of the project from a bird's eye view, this move goes into more detail about how leadership was enacted in the meetings through moments of agential cutting and an interplay of producing positions and issues. It thus adds another layer of analysis and contributes to the understanding of the analytical moves one to three by focusing on the daily practice through which direction was produced and leadership was enacted.

Table 4 shows an overview of the different analytical moves that I described above and in which chapter they are presented. The table shows the focus of analysis in each analytical move from an agential realist viewpoint and broken down for the topic of leadership.

Table 4: Analytic Moves 1 - 4

	CHAPTER 5			**CHAPTER 6**
	Analytical Step 1	**Analytical Step 2**	**Analytical Step 3**	**Analytical Step 4**
Focus of the Analysis (Agential Realist Perspective)	The Produced Differences	The Producing of Differences	Diffraction Patterns; The Effects of Produced Differences	Entanglements and Intra-Actions
Focus of the Analysis (L-a-P Perspective)	Produced Positions and Issues	The Material-Discursive Practices used to Produce Positions and Issues (Leadership Moments)	Temporal Distribution of Produced Positions and Issues and Leadership Moments	The Production of Leadership in Practice

5.3 Identifying Positions and Issues

The first analysis of the meetings aimed to work out the differences that matter (Barad, 2007) in the team meetings. As producing issues and positions can be understood as the core of leadership work (Crevani, 2011), this analytical move identified the variations of positions and issues that were enacted in the team meetings. This move also uncovered the points of crystallisation, such as concerns or topics, around which team meetings took place. This analysis was about identifying the boundaries drawn in meetings that can be seen as sites of difference. Throughout the teams and meetings, the analysis found a total of seven sub-phenomena of produced positions and issues. These, however, should not be understood as categories in the traditional sense, which reduce information (Schadler, 2019), but as fluid sub-phenomena, of which different variations were produced throughout the meetings. For example, in the meetings there were many variations of positions relating to technology. In VT1 pre-AI meetings, for example,

technology was often produced as necessary tool for humans to use and to do the work and in the production of technology as tool, boundaries were created, which limited the flow of dispersed collaboration (Wageman et al., 2012). Thus, there may have been an over-optimistic belief in human agency (Grant & Humphries, 2006). In VT1 post-AI meetings, however, these tendencies of separation were increasingly overcome as technology was positioned as part of the process and as 'non-human team member'. Thus, some of the traditional boundaries between the human and the technological may have been undermined in the AI process through material-discursive practices that "enact what matters and what is excluded from mattering" (Barad 2007, p. 148).

In the following sections I provide a description of these positions and issues and describe some of the identified variations. It won`t be until the analysis in the next chapter that the actual variations within the sub-phenomena are investigated, and the following overview only provides some examples for a better understanding. In this chapter the focus is on identifying how these sub-phenomena were distributed throughout all meetings and the teams, which provides a first picture of how leadership practice transformed throughout the project.

Produced sub-phenomena of issues:

Organisational issues:

This sub-phenomenon is related to daily routines, economic constraints, and business targets that are part of the organisational entanglement in which the teams operate. It includes the daily tasks the teams are working on. One example of a produced issue is the struggle of VT1 in the pre-AI phase to meet targets, which can be understood from the following extract:

"Well, it's become worse. The pressure has shifted and increased from last year. Because of the required performance, the goals, they are exaggerated. We know that we will not be able to meet the project goals. I even have the feeling they don't want us to be honest?" - Lothar, VT1

Another issue related to the budget available to replace machines or improve the work areas:

“I just don’t understand. This year we will probably meet financial targets and we are already being told next year the business will invest less. If this does not change it will just continue to fall apart. The buildings, the roof, the machines.” - Julia, VT2

Technological issues:

Issues related to technology, such as CT, were produced in different ways in various team meetings. There were issues when CT did not work as it should have and constrained the teams in their ability to act, which made meetings sometimes difficult and caused frustration. In these cases, technology was produced as problem:

“The meetings can feel like a waste of time when I sit there and can’t understand a word due to the voice quality. Sometimes I think we just do these because they are in the diary, and I think they would be useful, but it doesn’t work as it should.” - Christina, VT1

In other cases, technology was produced as helpful tool to implement efficiency improvements in material replenishment:

“I think we can extend the test period. It worked well. The system detects errors in our replenishment strategy and gives warnings when materials will run out based on our data. If we roll it out materials should be replenished faster and in theory, we should never run out.” - Marten, VT2

Due to the nature of this issue and the virtual team’s dependency on technology, it only played a minor role in the face-to-face teams.

Workplaces and -spaces:

There were also issues that related to the organisation and design of workplaces, or the distance between different areas at the site. The following examples show how the design of workplaces influenced daily routines:

“I need to go to the shop-floor frequently every day, but I also need to spend much time in the office. Sometimes I don’t go to the shop-floor although I should, just because of the distance. It sometimes feels like a waste of time.” - Robert, FTF1

The following example shows that this issue was produced in a different way after some physical changes to the work environment had been carried out:

“This has made a change. I am not sure if you have the same view but having the office here is just so much easier. I definitely prefer this to how it was before.” – Benjamin, FTF1

A sense of direction:

These issues related to the different degrees to which goals and directions were understood by the team members. These directions could have come from senior management or from within the team. Depending on the clarity about goals, team members moved into similar or different directions:

“It sometimes isn’t quite clear to me what the priorities are. I then work on what I think makes sense, but I don’t necessarily see the whole picture.” - Anne, FTF2

In another meeting, a completely different sense of direction was produced. In this example, there was a clear understanding of where to go, because the direction was produced collaboratively:

“This meeting has clarified the next steps. It is stretch but I think we all know what to do. Shall we get together again in a few days?” - Roland, FTF2

Produced sub-phenomena of positions:

The role of technology:

This sub-phenomenon relates to the different roles that technology was playing throughout the different meetings. The following example shows how technology, in one instance, was produced as tool to get things done:

“I need to get the software replaced. We have always used it but as you need to replace tools over time you also need to replace software to remain up to date.” - Charlie, FTF2

In contrast, the following example shows how technology was produced as partner and as being part of the team:

“This makes things much easier. It’s interesting to see how we have now arranged so many processes around this equipment, which really has become part of this team.” - Jonas, VT1

Formal roles:

This sub-phenomenon relates to the different perspectives on formal roles and positions produced. Some variations of this sub-phenomenon justify 'who is to do what' with the formal role of that person and reinforce hierarchies:

"I can't understand that they don't approve the budget to replace this machine. It's up to them to do it and to give us what we need to run this place." - Thomas, VT1

Another variation does quite the opposite and produces the need for a different distribution of roles and challenges existing hierarchical structures:

"I don't think this hierarchical structure works for us. We need to think about something different." - John, VT2

Informal roles:

The variation of informal roles relates to a distribution of tasks, i.e. 'who is to do what' without considering/pointing out the formal role of the person. This variation may consider past events, as for example if somebody did something well in the past and is therefore deemed as competent, as the following example shows.

"Do you think you could do this? You've done such a great job last time and I´m happy to give you a hand as well." - Tom, FTF2

It also shows personal entanglements. Depending on the relations people have developed, the distribution of tasks might work differently:

"We really need to get this cleared up before Monday. Can you give me a hand? It will be fun if we do it together." - Florian, VT1

One can assume that all of the variations within these sub-phenomena had further consequences, because, as Barad (2007, p. 181) highlights: "The past matters and so does the future, but the past is never left behind, never finished once and for all, and the future is not what will come to be in an unfolding of the present moment; rather the past and the future are enfolded participants in matter's iterative becomings." A closer look at the different variations within the sub-phenomena of positions reveal that they can have a *rather* barrier-reducing (opening) or a *rather* barrier-increasing (closing) effect, depending on whether they promote and support collaboration between people, departments, sites, or human and non-human and if they tend to include 'the other' (opening), or if they promote individualism and

separation (closing). I argue that this demonstrates a changing relationality in the teams. It is in the changing relationality (the agential cutting) that the indeterminacy is iteratively solved as boundary or 'cut'. As Crevani et al., (2010) explain, those engaged in producing direction produce the boundaries. The agential cutting "produce[s] determinate boundaries and properties of 'entities' within phenomena" (Barad, 2007, p. 148). The presented positions and issues are also much more than simple manifestations of problems, roles, or relationships that have been produced in the ongoing process of producing direction. These manifestations are linked to material-discursive practices that have come to matter (Barad, 2007) and are what matters for the teams as they carry out their tasks and routines. They focus attention and legitimate action in that they create the space of action (Crevani, 2011). They are an important sub-phenomenon in the process of leadership practice, and it is therefore important to understand their temporal distribution to uncover how leadership practice transformed and shifted.

5.4 Identifying Leadership Moments

In a second analytical move I focused on the leadership moments of agential cutting that produced these differences. I tagged the leadership moments based on the actions of the participants. For example, the act of 'blaming others for the current situation' was extracted from the following quote observed in a team meeting. This act was both producing positions (blaming others, closing) and 'problematising' an issue (for example: too much work).

"But again, they have pushed it on us. There is not much we can do about it. [Positioning – closing / Formal roles] We have never had to do that kind of work in the past and our work here hasn`t reduced, but we are still expected to deliver it so need to have time for it. Really, I think we should push back on it." [Problematising] - Laura, VT2

The way positions were produced by blaming others shifted relationalities and created boundaries between different groups, as in this case there was a group that was blamed for an issue and another group that was suffering from the issue. This example shows how a leadership moment itself can be understood as material-discursive practice that enacts boundaries by producing issues or positions. Such a

leadership moment is enacting differences; it is the process of agential cutting (Barad, 2007).

To capture the leadership moments, I looked for the novelty in speech acts and identified leadership moments as they "arose performatively in the juxtaposition of remembered pasts and anticipated futures" (Simpson et al., 2018b, p. 651), and when they were "immediately adjacent in the same speech act" (p. 651). As Simpson et al. (2018b, p. 649) highlight, "by bringing together a particular past and a particular future, present action is generated". This is based on an understanding that talk can create something new and that a 'present' is produced as an active turning point in the flow of social practice, which is also "one of the most under-examined aspects of contemporary sociological thinking" (p. 649).

In all teams, I identified multiple leadership moments. Working through the dataset I extracted 1,953 moments when remembered pasts and anticipated futures were immediately adjacent in the same speech act and could be referenced to produced positions and issues. As Simpson et al. (2018b) suggest, to identify the remembered pasts and anticipated futures, I used obvious clues such as the tense used by the speaker, as for example: 'there was' (past) or 'there is going to be' (future). Sometimes, the past or future orientation was more subtly determined by context, for example, when there was a reflecting on the past while referring to something that is already in existence. This was then understood as remembered past: 'This new process isn't working as it should.' Present tense prescriptions for novelty, as, for example 'I really want to make a difference here', on the other hand, were understood as anticipated futures.

Table 5 shows the effects enacted by the leadership moments that I identified together with a description and example of actions that were part of the process. The material-discursive practices can further be ordered into categories, depending on whether they contributed to producing positions, issues, or both; and whether they had an opening or closing (positioning) effect. The table shows that I found the practices of appreciating, modulating and problematising to be related only to producing issues, and the practice of positioning to be related to producing positions. The other practices of challenging and aligning could be related to both, depending on whether the speech act referred to an act of challenging/aligning the production of positions or both.

By combining the analytical moves one and two, I could reference the identified leadership moments (the agential cutting) to the differences they produced (positions and issues / the enacted cuts). The leadership moments identified and shown in Table 5 should not be understood as separate from each other. Each moment should rather be understood as a beat that plays a role in the rhythm of leadership. Sometimes, there is an irregularity or disruption in the beat or even conflicting rhythms, which may open doors to new possibilities (Crevani, 2011). Suddenly, a new beat is created, which is the transformation of leadership practice that I am looking for. Certainly, other interpretations might have been possible as well. However, the following leadership moments were identified as most helpful in understanding the dynamics of the meetings in the given context.

Table 5: Identified leadership moments

Leadership Moment	Related Action	Example	Sub-phenomenon of Producing Direction	
			Producing Issues	Producing Positions
Appreciating	Identifies a specific potential in the present situation based on what works well. Produces an issue as opportunity.	We have been really good at our on-time delivery [past]. We should learn from this and do what's necessary to achieve the same at your site [future].	X	
Modulating	Regulates the perception of threats, institutional imperatives and issues to act.	I was aware of this [past]. However, I would not overrate the issue. We need to make sure we focus on the plan [future].	X	
Problematising	Recognises an unsatisfactory present situation and introduces an issue as problem, often by highlighting already existing or potential negative consequences of the problem in the future.	Because of the voice quality I can never really participate [past]. If this continues to happen I will stop to attend these meetings [future].	X	
Positioning [closing]	Undermines cohesive group identity around an issue, produces positions (who does what) or the positioning between the actors or the actors and other people/things. (Re)creates barriers.	Just because operations have looked for new suppliers themselves in the past [past], this does not mean it's the right thing to do. This should only be a responsibility of supply chain [future].		X
Positioning [opening]	Promotes cohesive group identity around an issue, produces positions (who does what) or the positioning between the actors or the actors and other people/things. Reduces barriers.	We had a lot of unnecessary waste in the past as we often had to wait for approvals [past]. I suggest we bring this approval process into the team to reduce waste and improve the process [future].		X
Aligning	Involves confirming and agreeing with what was previously said. The team members come to an agreement and a common focus emerges.	I think this is the right thing to do [past], and we should implement a cleaning device or something in order to ensure surface quality [future].	X	X

Challenging	Involves actively negating or at least disagreeing with the view of others to provoke explanation, further thought or modifying ideas. Proposition of a version of events that introduces a transformation.	I don`t agree here [past]. We can`t do just go ahead without obtaining formal approval. [future].	X	X

5.5 Temporal Distribution of Positions, Issues and Leadership Moments

This analytical move draws on the two preceding moves and focuses on how leadership practice unfolded throughout the workshops. My analysis is based on the assumption that we must separate two forms of processes, which are entangled but must be 'cut' to analyse them individually. The findings can then be diffracted to come to new insights. The first form is based on the view that practice is a temporal process (Simpson, 2009) and uncovers the development of the produced positions and issues over the different sessions. However, practice is also relational and involves the exercise of agency (Simpson, 2009). The second form therefore focuses on the leadership moments of agential cutting, which shows the different ways in which boundaries are enacted. This analytic move deals with both temporality and social agency. In doing so, it rebuilds the history of past processes (Schadler, 2019) and shows the diffraction pattern of the enacted differences (Barad, 2007) to uncover previously unnoticed patterns.

5.5.1 The Temporal Distribution of Positions and Issues

I first turn to the question of how the enacted differences of issues and positions are distributed throughout the sessions in the different teams. The results presented rely on the first analytic move in which I first identified the different sub-phenomena (see Table 5). This analysis presents their temporal development and their variations. I have categorised the occurrences into the different project phases to visualise the impact of the AI workshop:

- Pre-AI: before the workshops
- During AI: when the workshops were running
- Post-AI: after the last workshop

The results summarised in Table 6 show the relative prevalence of the different sub-phenomena in the meetings in the different phases of the project, ranging from + to +++.

Table 6: Temporal Unfolding of Produced Positions and Issues in the Teams

WORKSHOP TEAMS

VT1

	Pre-AI	During AI	Post AI
Organisational	+	++	+++
Technological	+++	++	+
Sense of Direction	+++	++	++
Spaces and Places	+	++	+++
Role of Technology	+++	++	+
Formal Roles	++	++	+
Informal Roles	+	++	+++

FTF1

	Pre-AI	During AI	Post AI
Organisational	+++	+	+++
Technological	+	+	+
Sense of Direction	++	+++	++
Spaces and Places	++	++	++
Role of Technology	+	+	+
Formal Roles	+++	+++	++
Informal Roles	++	+++	+++

NON-WORKSHOP TEAMS

VT2

	Pre-AI	During AI	Post AI
Organisational	+	+	++
Technological	+++	+++	++
Sense of Direction	+++	+++	+++
Spaces and Places	+	+	+
Role of Technology	+++	+++	++
Formal Roles	++	++	++
Informal Roles	+	+	++

FTF2

	Pre-AI	During AI	Post AI
Organisational	+++	+++	++
Technological	+	+	+
Sense of Direction	++	++	+++
Spaces and Places	++	++	++
Role of Technology	+	+	+
Formal Roles	+++	+++	+++
Informal Roles	++	++	++

Table 6 shows how the sub-phenomena that are described in section 5.3 were distributed throughout all meetings and the teams. This provides a first picture of how leadership practice transformed throughout the project. The overview indicates that the use of the four sub-phenomena of issues and the three sub-phenomena of positions are not equally distributed across the three phases (pre-AI, during AI, post-

AI) and across the teams. In the analysis I considered how the focus of the teams shifted in the meetings throughout the project as different positions and issues materialised.

In the next sections I discuss the shift in focus within the teams, which is also more clearly visualised in Table 7 and Table 8. A red box around the sub-phenomena indicates that the team started to focus less on them as the project progressed. A green box shows that the team increasingly focused on these as the project progressed. An amber box shows that there was a shift in focus, but not necessarily in one direction. One example are the organisational issues in FTF1. The team focused on them quite intensely in the pre-AI phase and the post-AI phase, but not during the workshop phase of the project.

5.5.1.1 Workshop Teams VT1 and FTF1

The analysis suggests that before the workshops had started, in the pre-AI phase, VT1 focused mainly on issues relating to technology and direction. Examples for these would be difficulties with CT and discussions around conflicting priorities. The produced positions mainly related to technology, which indicates that the role of technology was quite intensely discussed. There, however, was a shift in the team´s focus after the beginning of the workshops. While organisational issues were quite low on the team's agenda initially, the team increasingly focused on these as the project progressed, which indicates that the team increasingly focused on business objectives. In addition, positions relating to informal roles were more frequently produced as the project moved on and there was a tendency to put less emphasis on formally assigned roles and positions. As the project progressed, the layout and relevance of workplaces and -spaces was more frequently discussed.

Looking at FTF1, the analysis suggests that before the workshops had started, the team focused heavily on organisational issues, such as, for example, part shortages or customer concerns. On the other hand, the team did not produce many issues related to a sense of direction or technology before the AI workshops had started. Also, compared to the virtual teams, more positions that related to formal and informal roles were produced in the pre-AI phase. The analysis also indicates that the team only rarely produced positions related to technology throughout the entire project. These aspects show that there is already a noticeable difference in the

patterns of produced issues and positions between FTF1 and VT1 in the pre-AI phase. There is also a shift in the focus of the teams after the beginning of the workshops. While organisational issues reduced when the workshops were running, they increased after the workshops. At the same time during the workshop phase, issues relating to a sense of direction increased, and positions relating to informal roles were more often produced.

Table 7: Temporal Unfolding of Produced Positions and Issues in VT1 and FTF1

WORKSHOP TEAMS							
VT1				FTF1			
	Pre-AI	During AI	Post AI		Pre-AI	During AI	Post AI
Organisational	+	++	+++	Organisational	+++	+	+++
Technological	+++	++	+	Technological	+	+	+
Sense of Direction	+++	++	++	Sense of Direction	++	+++	++
Spaces and Places	+	++	+++	Spaces and Places	++	++	++
Role of Technology	+++	++	+	Role of Technology	+	+	+
Formal Roles	++	++	+	Formal Roles	+++	+++	++
Informal Roles	+	++	+++	Informal Roles	++	+++	+++

5.5.1.2 Non-Workshop Teams VT2 and FTF2

In the non-workshop team VT2 the pattern largely remains the same throughout the project, whereas there is a noticeable transformation in VT1. Based on this analysis, VT1 and VT2 had the same jump off point in the pre-AI phase. However, in the post-AI phase there is a slight shift in focus in VT2 as well, which needs to be explored further in the next phases of the analysis.

FTF1 and FTF2 had the same jump off point in the pre-AI phase. However, the focus of both teams was quite different to the virtual teams. In the first two phases of the workshop process, there is no observable shift in focus in the non-workshop team FTF2. However, a slight shift is noticeable in the post-AI phase.

Table 8: Temporal Unfolding of Produced Positions and Issues in VT1 and FTF1

NON-WORKSHOP TEAMS			
VT2			
	Pre-AI	**During AI**	**Post AI**
Organisational	+	+	++
Technological	+++	+++	++
Sense of Direction	+++	+++	+++
Spaces and Places	+	+	+
Role of Technology	+++	+++	++
Formal Roles	++	++	++
Informal Roles	+	+	++

FTF2			
	Pre-AI	**During AI**	**Post AI**
Organisational	+++	+++	++
Technological	+	+	+
Sense of Direction	++	++	+++
Spaces and Places	++	++	++
Role of Technology	+	+	+
Formal Roles	+++	+++	+++
Informal Roles	++	++	++

This analysis focused on the distribution of produced issues and positions in the meetings across all teams and phases of the project. While this overview shows how the focus of each team changed and which sub-phenomena were produced within the team meetings in different phases of the project, it does not show the process of producing these positions and issues in detail and it thus does not show how they exactly materialised. In other words, it shows shows only the sub-phenomenon and not the exact variation. To understand this in a better way, the temporal distribution of leadership moments will be presented in the next section.

5.5.2 The Temporal Distribution of Leadership Moments

I now turn to the distribution of leadership moments over the course of the sessions and the different teams. The results presented rely on the second analytic move in which I identified the material-discursive practices of producing positions and issues. This analysis presents their temporal development and their variations. To support the analysis of the data I will also consider the findings from section 5.5.1 and use findings from the pre-AI and post-AI surveys. Figure 15 shows the distribution of the different leadership moments across all teams and sessions. The different colours represent the different leadership moments. While the x-axis represents the meeting number, the y-axis represents the overall quantity of leadership moments. The red dotted lines show when the workshops started and finished.

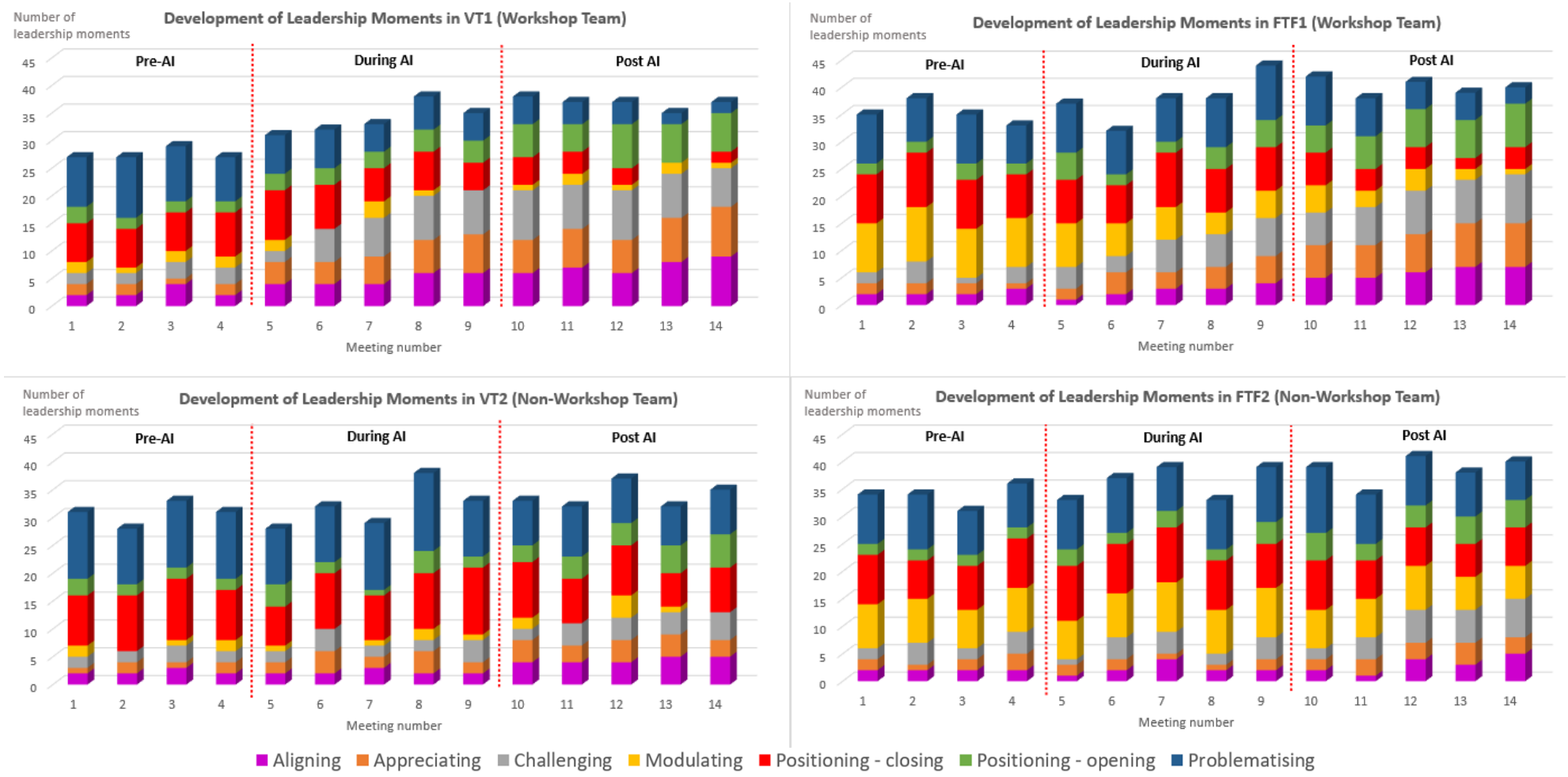

Figure 15: Leadership moments and their temporal unfolding across teams and meetings

5.5.2.1 Virtual Team 1

When looking across the VT1 dataset shown in Figure 15, there are several patterns emerging. Firstly, modulating turning points were rare and remained fairly steady throughout the entire project. Over time, the intensity of problematising turning points, which dominated initially, declined. Conversely, after the beginning of the workshops, the frequency of appreciating, challenging and aligning turning points increased. Barrier-enacting (closing) turning points reduced after the beginning of the workshops, and barrier-reducing (opening) turning points increased. I will go into more detail about their temporal unfolding below when presenting some of the survey results.

The findings indicate that the AI workshops had an immediate effect on the focus of the team, the enacted differences and the leadership moments in VT1. This demonstrates that just after the beginning of the workshops, there was a noticeable shift in leadership practice. The findings show that before the workshops, the team had problems with technology (high frequency of problematising leadership moments; focus on issues related to technology) and potentially created barriers around the technology used (high number of closing turning points; focus on positions relating to technology). In addition, the team had difficulties to develop a common focus to find solutions (low frequency of aligning turning points).

It has been argued that “[t]he effect of Appreciative Inquiry is so strong and powerful that it can even transform deficit discourse and negative thinking” (Cooperrider & Whitney, 2005, p. 73), which becomes noticeable after the beginning of the workshops. After the first workshops, the team started to reproduce problems as opportunities (increasing appreciating/decreasing problematising turning points), which changed how the team produced issues in this phase. The team also started to challenge the given situation more often (increasing challenging turning points) and started to generate alignment (increasing aligning turning points). In this process, barriers and boundaries were reduced (increasing opening turning points; increased focus on informal roles). These transformations are also supported by the following pre-AI and post-AI survey results.

The focus on problems in the early stages of the project is also confirmed by the pre-AI survey, when the team described the way in which unforeseen events were handled in the team as highly problem focused (4), problem focused (5), partially problem focused (2), and partially opportunity focused (1). In the post-AI phase, upcoming issues were more frequently produced as opportunities, and the focus of the team changed (increasing appreciating/decreasing problematising turning points). In the post-AI survey, the team members described the way in which unforeseen events in the team were handled as highly problem focused (post-AI: 0; pre-AI: 4), problem focused (post-AI: 0; pre-AI: 5), partially problem focused (post-AI: 2; pre-AI: 2), partially opportunity focused (post-AI: 3; pre-AI: 1), opportunity focused (post-AI: 5; pre-AI: 0), or highly opportunity focused (post-AI: 2; pre-AI: 0) (see Figure 16).

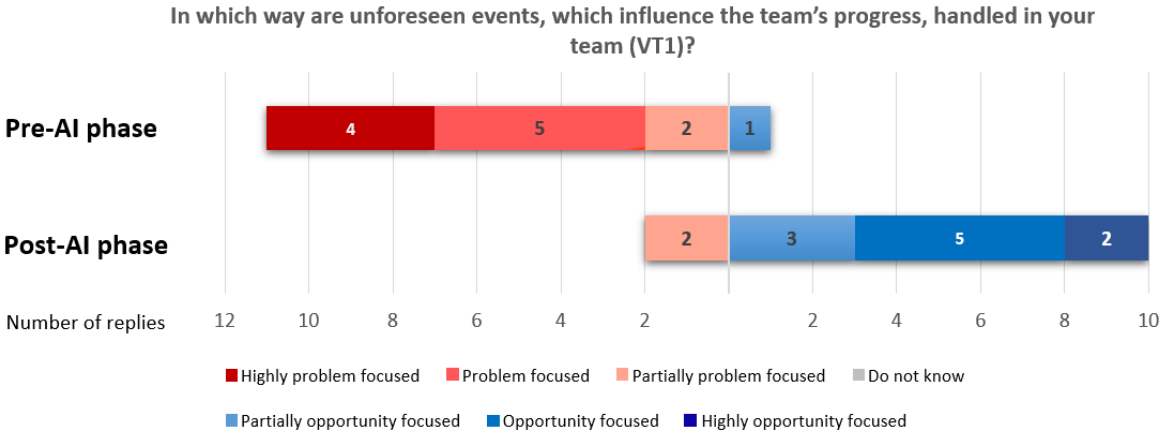

Figure 16: VT1 Pre-AI/Post-AI survey response comparison on how unforeseen events were handled

The findings also indicate that the team had a strong tendency to reinforce hierarchies in the pre-AI phase (high number of closing turning points in the beginning; focus on positions relating to formal roles). This was also confirmed in the pre-AI survey by the team members, when they described the dominant way of doing leadership as hierarchical (1), partially hierarchical (8), and partially cooperative (3). The team's understanding of the dominant way of leadership in the team changed throughout the AI intra-vention, as the team members described it as hierarchical (post-AI: 1; pre-AI: 1), partially hierarchical (post-AI: 3; pre-AI: 8), partially cooperative (post-AI: 4; pre-AI: 3), and cooperative (post-AI: 4; pre-AI: 0) (see Figure 17).

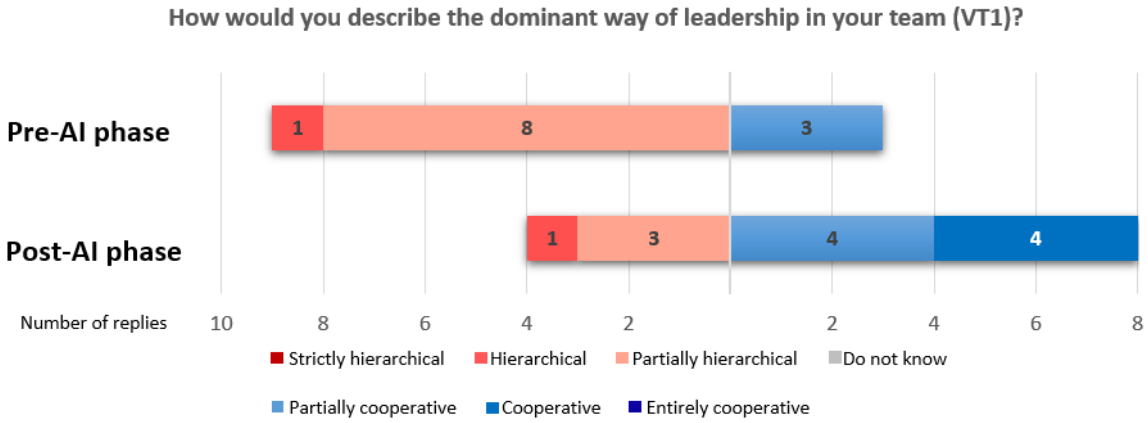

Figure 17: VT1 Pre-AI/Post-AI survey response comparison on the dominant way of leadership in the team

In the pre-AI phase, the team members did not challenge the status quo very often and did not focus much on their daily organisational issues (low frequency of challenging turning points and little focus on organisational issues). The findings show that in the post-AI phase, the team found it easier to generate a common focus (increasing aligning turning points) and the team kept challenging situations (high number of challenging turning points). The survey results confirm that in the post-AI phase, goals and processes were challenged more frequently. The team members described in the post-AI survey that tasks, goals and processes were questioned several times a day (post-AI: 5; pre-AI: 0), several times a week (post-AI: 5; pre-AI: 4), several times a month (post-AI: 2; pre-AI: 6), or several times a year (post-AI: 0; pre-AI: 2) (see Figure 18).

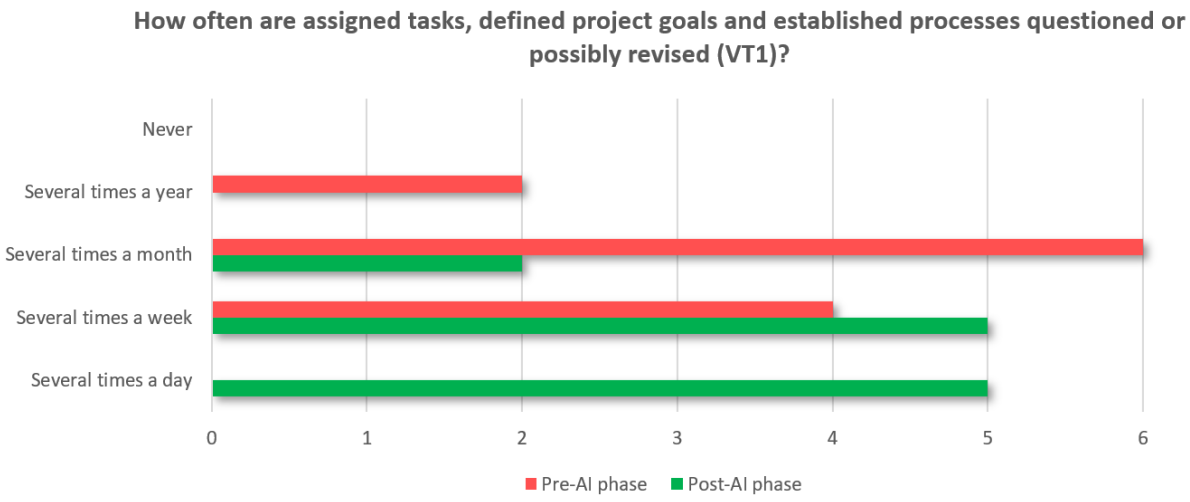

Figure 18: VT1 Pre-AI/Post-AI survey response comparison on how often assigned tasks, project goals and processes are questioned or revised

In the pre-AI phase, team members confirmed that formally assigned roles and responsibilities were very important (4), important (4), rather important (1), or rather unimportant (1). Two participants responded with 'Do not know'. In the workshop process, boundaries shifted and barriers were reduced (increasing opening turning points and increased focus on informal roles). It can be assumed that hierarchies were challenged by the team and the team members´ perception shifted as formally assigned roles became less meaningful. The team described the importance of formally assigned roles and responsibilities in the post-AI phase as very important (post-AI: 0; pre-AI: 4), important (post-AI: 2; pre-AI: 4), rather important (post-AI: 4; pre-AI: 1), rather unimportant (post-AI: 3; pre-AI: 1), or unimportant (post-AI: 3; pre-AI: 0) (see Figure 19).

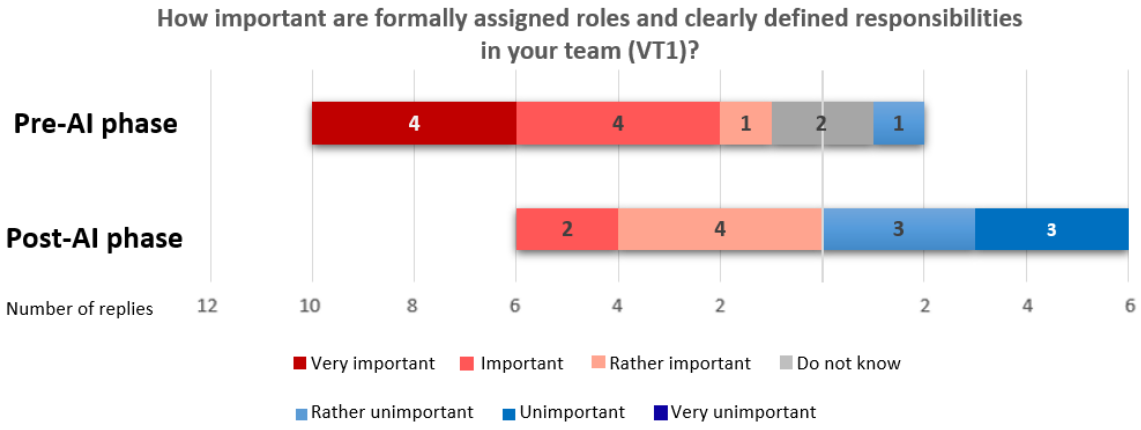

Figure 19: VT1 Pre-AI/Post-AI survey response comparison on the importance of formally assigned roles and responsibilities

Team members also confirmed that positions and roles in the team were changed several times a day (post-AI: 3; pre-AI: 0), several times a week (post-AI: 4; pre-AI: 1), several times a month (post-AI: 4; pre-AI: 5), or several times a year (post-AI: 1; pre-AI: 6). This indicates a shift away from a hierarchical structure towards more flexible ways of assigning responsibilities, as roles and positions changed more frequently in the post-AI phase (see Figure 20).

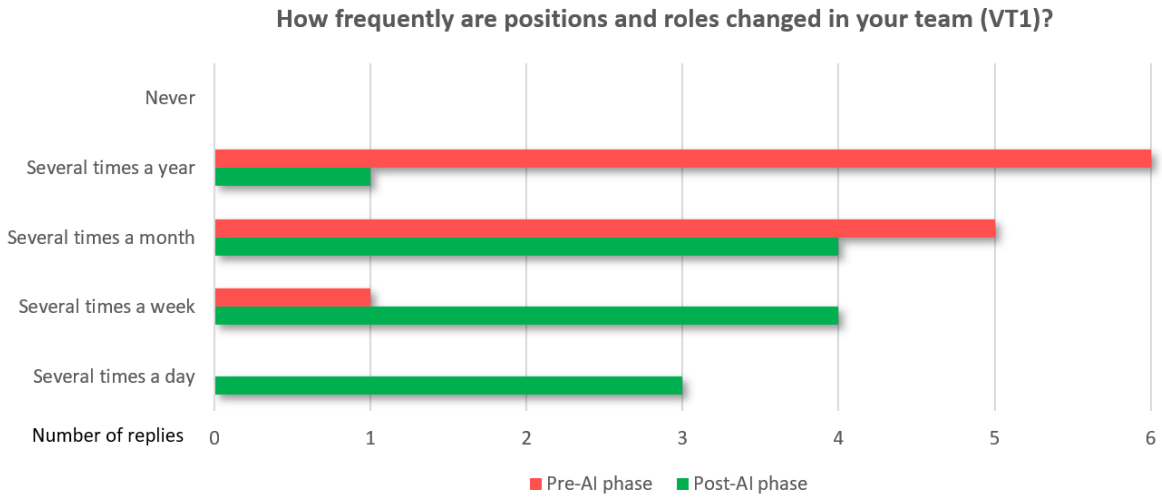

Figure 20: VT1 Pre-AI/Post-AI survey response comparison on the frequency of changing roles and positions

5.5.2.2 Virtual Team 2

Towards the beginning of the observations in the pre-AI phase, VT2 and VT1 shared a lot of similarities with regards to the produced positions and issues and the leadership moments. The overall frequency of the turning points in VT2 remained fairly steady throughout the pre-AI phase and during the workshop process and was very similar to the frequency of the turning points in VT1 during the pre-AI phase. Surprisingly, although VT2 did not participate in the workshops, a slight shift was observable in the post-AI Phase. The frequency of problematising turning points reduced slightly in the post-AI Phase. Conversely, the appearance of appreciating, challenging and aligning turning points slightly increased. Also, barrier-enacting (closing) turning points slightly reduced, and barrier-reducing (opening) turning points slightly increased. This development could be observed in VT1 as well. Overall, this slight shift showed a similar pattern as the transformation in VT1. However, this shift in VT2 was much less profound than in VT1 and started later. This finding of a slight shift in leadership

practice is also supported by the survey results. There is, for example, a slight shift away from problem-focused thinking towards opportunities, and away from formal roles and hierarchies towards informal roles and responsibilities. Team members described the way in which unforeseen events are handled in the team as highly problem focused (post-AI: 1; pre-AI: 3), problem focused (post-AI: 2; pre-AI: 2), partially problem focused (post-AI: 4; pre-AI: 4), partially opportunity focused, or opportunity focused (post-AI: 1; pre-AI: 1) (see Figure 21).

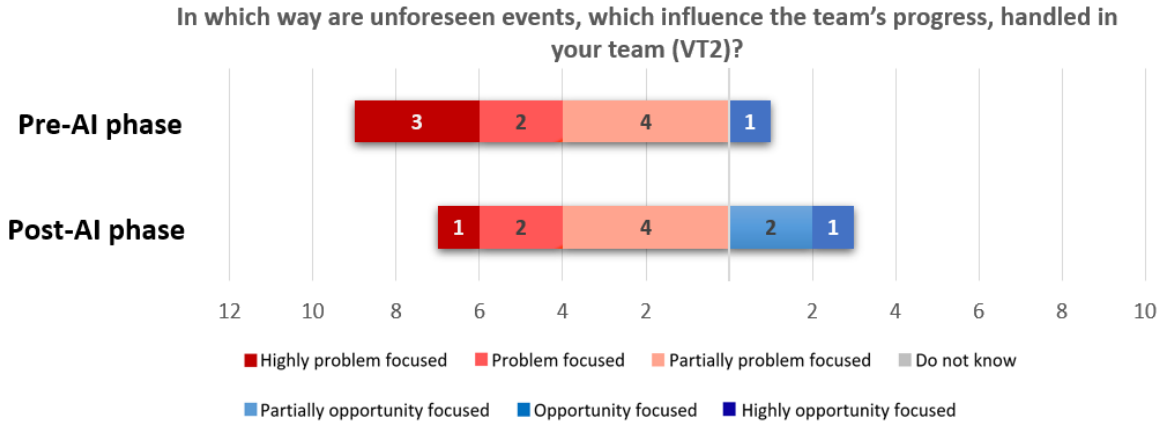

Figure 21: VT2 Pre-AI/Post-AI survey response comparison on how unforeseen events are handled

Another slight shift is noticeable with regards to the dominant way of leadership in the team. There is a slight shift towards more cooperative ways of doing leadership. In the post-AI survey, the VT2 team members described the dominant way of doing leadership in the team as hierarchical (post-AI: 0; pre-AI: 1), partially hierarchical (post-AI: 4; pre-AI: 5), and partially cooperative (post-AI: 6; pre-AI: 4) (see Figure 22).

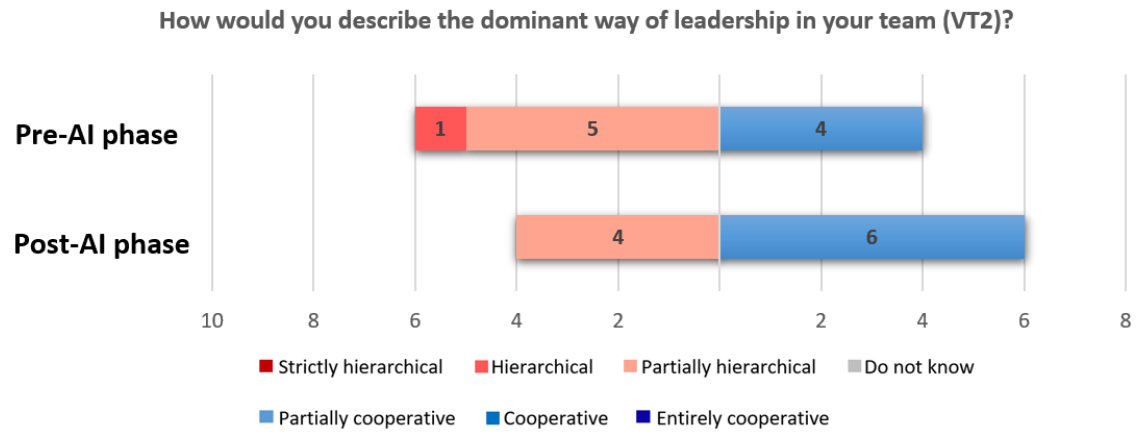

Figure 22: VT2 Pre-AI/Post-AI survey response comparison on the dominant way of leadership in the team

Challenging turning points slightly increased in the post-AI Phase and there was an increased focus on informal roles (higher frequency of challenging turning points and opening turning points). The survey results confirm this, as goals and established processes were questioned several times a day (post-AI: 1; pre-AI: 0; several times a week (post-AI: 6; pre-AI: 5), several times a month (post-AI: 4; pre-AI: 3), or several times a year (post-AI: 0; pre-AI: 3) (see Figure 23). This indicates a slight shift towards more participaton of the team members in defining and revising these in the post-AI phase.

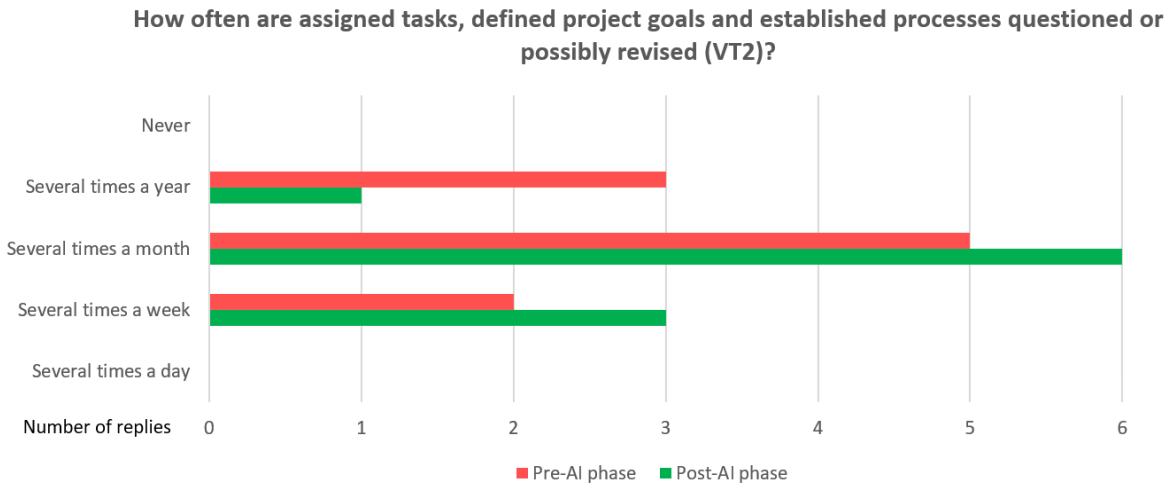

Figure 23: VT2 Pre-AI/Post-AI survey response comparison on how often assigned tasks, project goals and processes are questioned or revised

Due to space restrictions and as the VT1 and VT2 results show great similarities I will not present any further survey results. All diagrams can be found in Appendix B.

5.5.2.3 Face-to-Face Team 1

In FTF1 in the pre-AI phase, findings indicate that many of the organisational issues were understood as problems (high frequency of problematising turning points; focus on organisational issues). This was also confirmed by the team members in the pre-AI survey, when they described that unforeseen events were typically handled either highly problem focused (3), problem focused (5), partially problem focused (1), or partially opportunity focused (1). There were a lot of modulating turning points as well, which indicate that these problems were often deemphasised in the pre-AI phase. After the workshops, the focus of the team changed towards organisational issues, but these were produced more often as opportunities (less problematising turning points/more frequent appreciating turning points/focus on organisational issues). In the post-AI survey, team members confirmed that unforeseen events were handled highly problem focused (post-AI: 0; pre-AI: 3), problem focused (post-AI: 0; pre-AI: 5), partially problem focused (post-AI: 1; pre-AI: 1), partially opportunity focused (post-AI: 4; pre-AI: 1), opportunity focused (post-AI: 4; pre-AI: 0), or highly opportunity focused (post-AI: 1; pre-AI: 0), which supports this finding (see Figure 24).

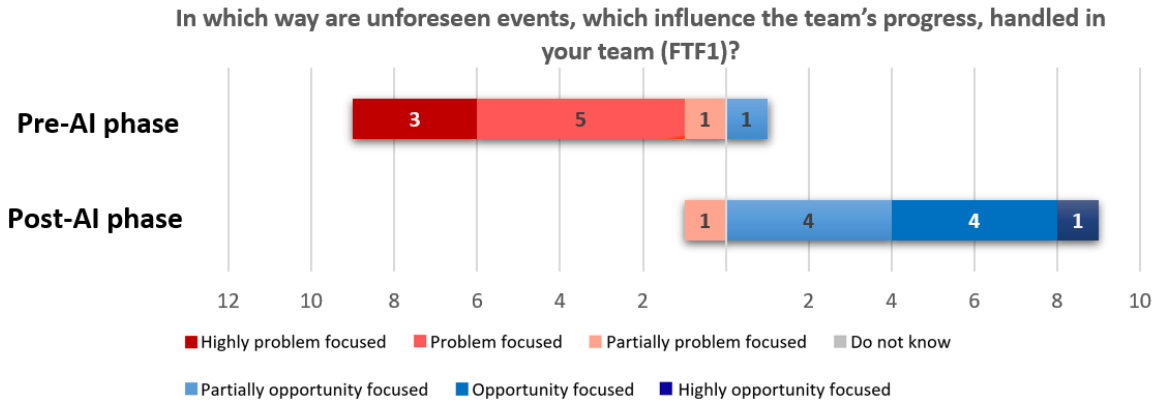

Figure 24: FTF1 Pre-AI/Post-AI survey response comparison on how unforeseen events were handled

There was also a strong focus on reinforcing hierarchical structures in the pre-AI phase (high number of closing turning points/focus on formal roles). This is also supported by the pre-AI survey, in which FTF1 team members described the dominant way of doing leadership in the team as either hierarchical (3),

partially hierarchical (3), or partially cooperative (2). Two participants answered 'Do not know'. While positioning practices regarding informal roles remained quite frequent throughout the workshop process, positioning practices regarding formal roles reduced slightly over time, and the increased challenging turning points together with the increasing opening turning points indicate that hierarchies were increasingly being challenged. The post-AI survey results support this as they indicate that the team members have changed their focus towards more collaborative ways of doing leadership. The team members described the dominant way of doing leadership after the workshops as hierarchical (post-AI: 0; pre-AI: 3), partially hierarchical (post-AI: 3; pre-AI: 3), partially cooperative (post-AI: 3; pre-AI: 2), cooperative (post-AI: 3; pre-AI: 0), or entirely cooperative (post-AI: 1; pre-AI: 0; in the pre-AI survey, two team members answered 'Do not know') (see Figure 25).

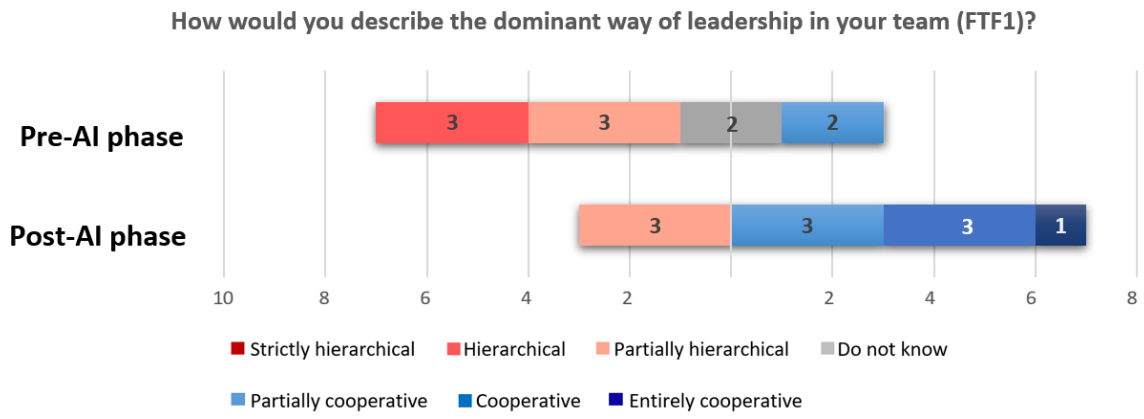

Figure 25: FTF1 Pre-AI/Post-AI survey response comparison on the dominant way of leadership in the team

In the pre-AI phase, the team members did not challenge assigned tasks, goals or processes very often and they seemed to get on with their work on organisational issues (low frequency of challenging turning points and high frequency of organisational issues). While there were many problems, the team continued with their daily routines without addressing the root causes of these issues, and they were often deemphasised (high frequency of problematising turning points and modulating turning points). The findings show that in the post-AI phase, the team found it easier to generate a common focus (increasing aligning turning points) and the team members increasingly challenged situations (high number of challenging turning points). The survey results show

that in the post-AI phase, goals and processes were challenged more frequently. The team members described in the post-AI survey that tasks, goals and processes were questioned several times a day (post-AI: 1; pre-AI: 0), several times a week (post-AI: 6; pre-AI: 4), several times a month (post-AI: 2; pre-AI: 5), or several times a year (post-AI: 0; pre-AI: 1) (see figure 26).

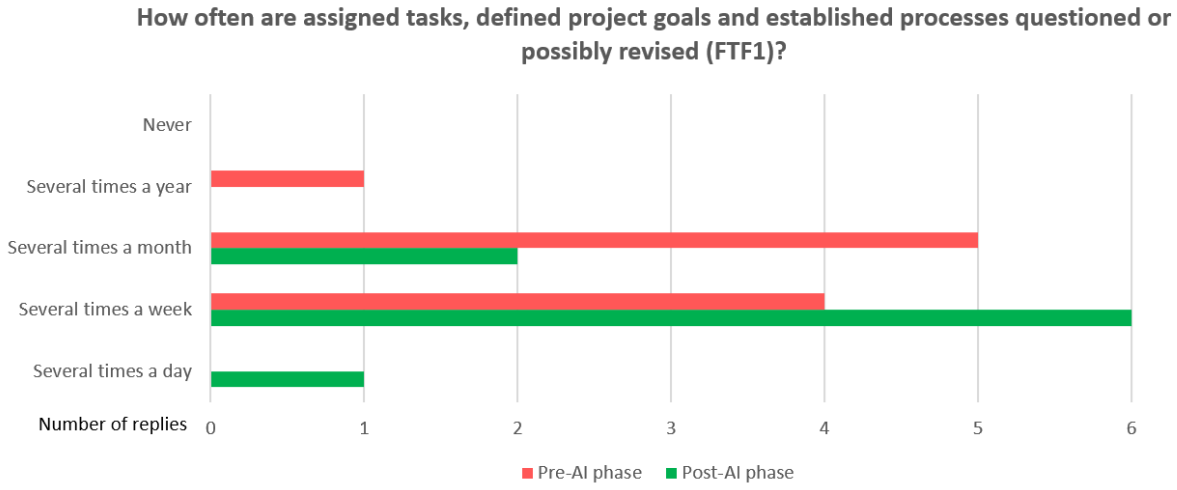

Figure 26: FTF1 Pre-AI/Post-AI survey response comparison on how often assigned tasks, project goals and processes are questioned or revised

In the pre-AI phase, FTF1 team members confirmed that to them, formally assigned roles and responsibilities were very important (3), important (4), or rather important (3). Throughout the project, barriers and boundaries were reduced (increasing opening turning points; increased focus on informal roles). It can be assumed that hierarchies were challenged by the team and the team member´s perception shifted as formally assigned roles became less meaningful. The team described the importance of formally assigned roles and responsibilities in the Post-AI phase as very important (post-AI: 0; pre-AI: 3), important (post-AI: 1; pre-AI: 4), rather important (post-AI: 3; pre-AI: 3), rather unimportant (post-AI: 3; pre-AI: 0), or unimportant (post-AI: 3; pre-AI: 0) (see Figure 27).

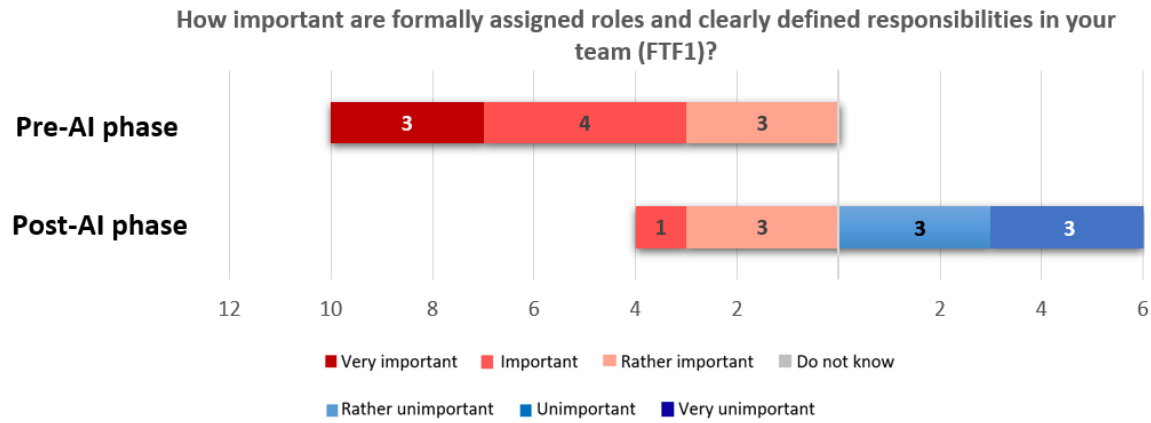

Figure 27: FTF1 Pre-AI/Post-AI survey response comparison on the importance of formally assigned roles and responsibilities

The survey results show that formal positions and roles remained quite stable in the pre-AI phase, which supports the team members´ initial understanding about the importance of formally assigned roles. The team members confirmed that positions and roles in the team were changed several times a day (post-AI: 0; pre-AI: 0), several times a week (post-AI: 3; pre-AI: 2), several times a month (post-AI: 6; pre-AI: 3), several times a year (post-AI: 1; pre-AI: 4), or never (post-AI: 0; pre-AI: 1). The post-AI survey results indicate a shift away from a hierarchical structure with unflexible roles and responsibilities, towards more fluid and flexible ways of assigning responsibilities, as roles and positions changed more frequently in the post-AI phase (see Figure 28).

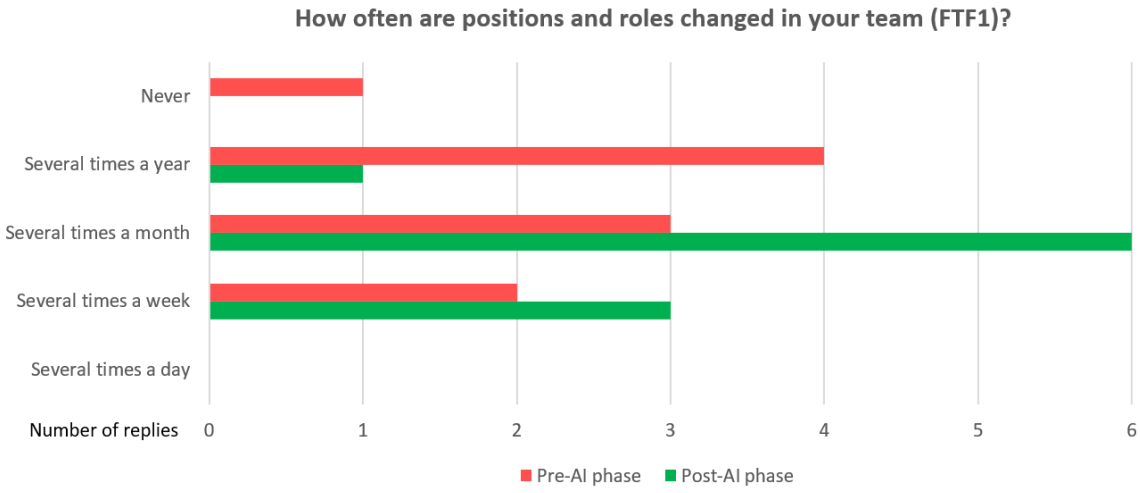

Figure 28: FTF1 Pre-AI/Post-AI survey response comparison on the frequency of changing roles and positions

Similar to the development in VT1, the AI workshops introduced a transformation in FTF1. This transformation, however, took another direction than in VT1. After the workshops had started, problematising turning points were still frequent, but modulating turning points decreased, which indicates that problems were deemphasised less often than in the pre-AI phase and they emerged to the surface more frequently, so they could be more openly discussed. The findings also indicate that the team in this phase increasingly challenged ways of doing things (increasing frequency of challenging turning points) while the team changed its attention from issues relating to technology towards discussing the team's focus (issues relating to a sense of direction). It seems as if the team started to recognise a need to properly address issues during the workshops. During the AI workshop phase, the team generated a common focus (increasing aligning turning points) and although problematising turning points remained frequent, appreciating turning points increased, which indicates a transformation from a problem focus towards an opportunity focus. This development continued in the post-AI phase.

5.5.2.4 Face-to-Face Team 2

In the pre-AI phase, FTF2 and FTF1 shared a lot of similarities with regards to the produced positions and issues and the leadership moments. While no noticeable transformation of the produced positions or leadership moments in FTF2 took place in the first two phases of the project, a slight shift could be observed in the post-AI Phase. While the produced positions and leadership moments in FTF2 that emerged before the post-AI phase are comparable to the ones that occurred in FTF1 in the pre-AI phase, the data indicates that the FTF2 team members deemphasised less problems in the post-AI phase (reduced frequency of modulating turning points in the last phase; still high frequency of problematising turning points). The findings of the survey indicate that the team continued to focus on problems throughout the project. The team described that unforeseen events were handled highly problem focused (post-AI: 2: pre-AI: 2), problem focused (post-AI: 4: pre-AI: 4), partially problem focused (post-AI: 2; pre-AI: 3), and partially opportunity focused (post-AI: 3; pre-AI: 2) (see Figure 29).

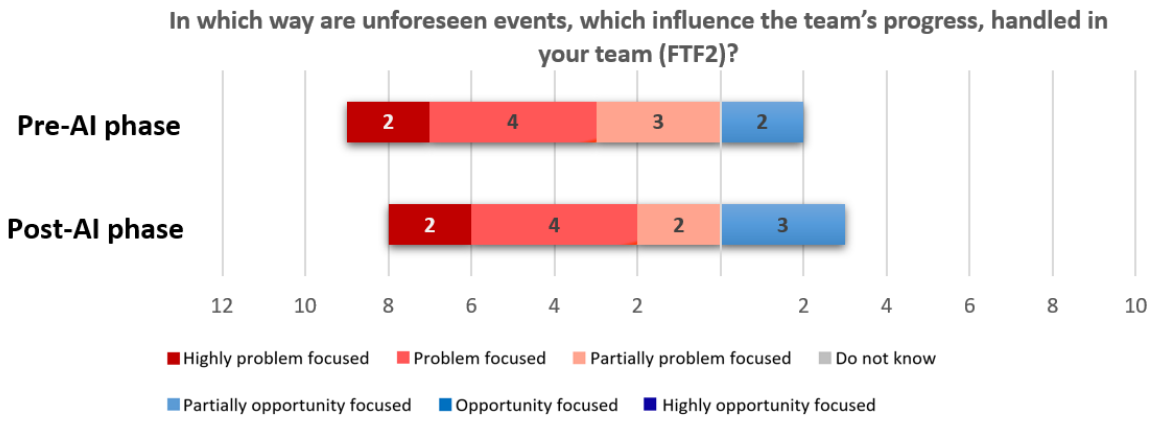

Figure 29: FTF2 Pre-AI/Post-AI survey response comparison on how unforeseen events are handled

Similar to FTF1 in the pre-AI phase, there was a focus on reinforcing hierarchical structures in FTF2. In FTF2, this was noticeable throughout the entire project (high number of closing turning points/focus on formal roles). However, a very slight shift was noticeable in the post-AI phase. The team members described the dominant way of doing leadership after the workshops as hierarchical (post-AI: 3; pre-AI: 3), partially hierarchical (post-AI: 4; pre-AI: 5), or partially cooperative (post-AI: 4; pre-AI: 3) (see Figure 30).

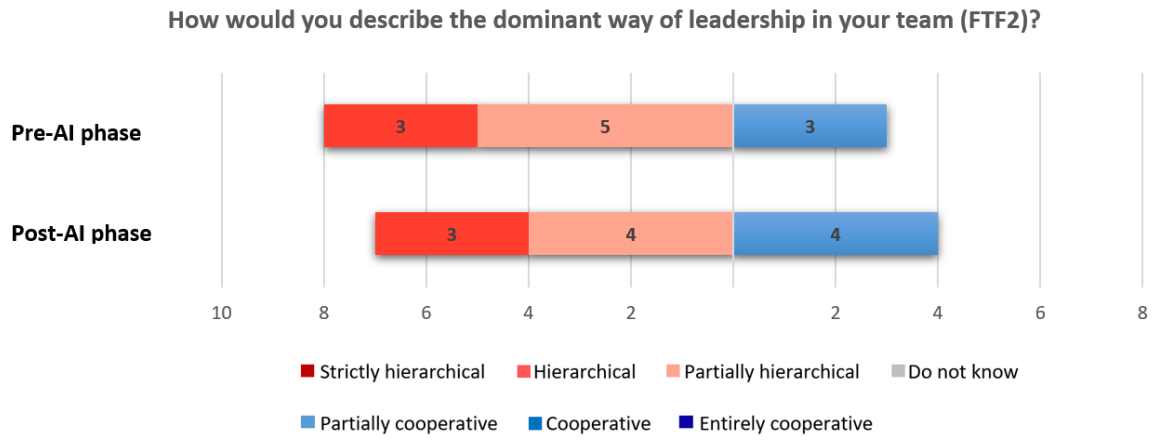

Figure 30: FTF2 Pre-AI/Post-AI survey response comparison on the dominant way of leadership in the team

FTF2 team members also generated slightly more alignment in the post-AI phase, and barriers were reduced (increased opening turning points; increased aligning turning points; increased focus on positions related to informal roles). This is also supported by the survey results, as the team members confirmed

that formally assigned roles were very important (post-AI: 1; pre-AI: 2), important (post-AI: 5; pre-AI: 7), rather important (post-AI: 4; pre-AI: 2), or rather unimportant (post-AI: 1; pre-AI: 0) (see Figure 31).

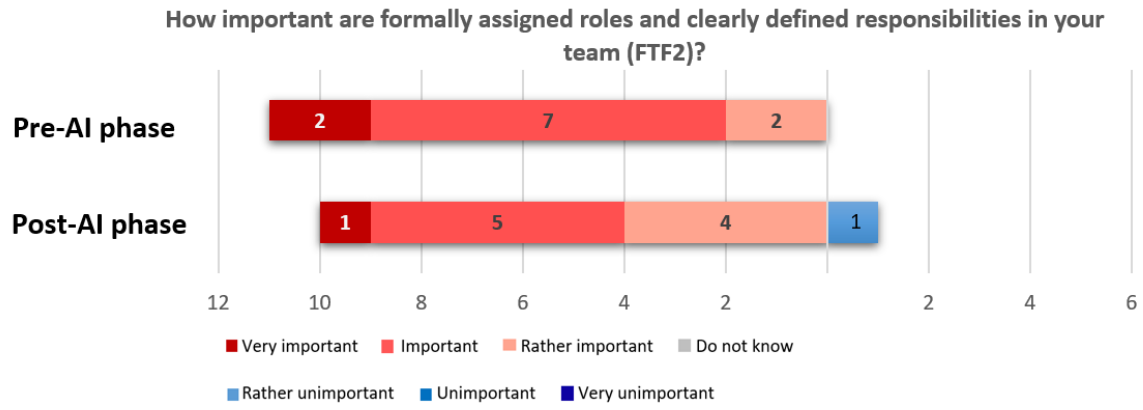

Figure 31: FTF2 Pre-AI/Post-AI survey response comparison on the importance of formally assigned roles and responsibilities

Challenging turning points slightly increased in the post-AI Phase. This is also supported by the post-AI survey findings. The team members described that tasks, goals and established processes are questioned several times a day (post-AI: 1; pre-AI: 0; several times a week (post-AI: 6; pre-AI: 5), several times a month (post-AI: 4; pre-AI: 3), or several times a year (post-AI: 0; pre-AI: 3) (see Figure 32).

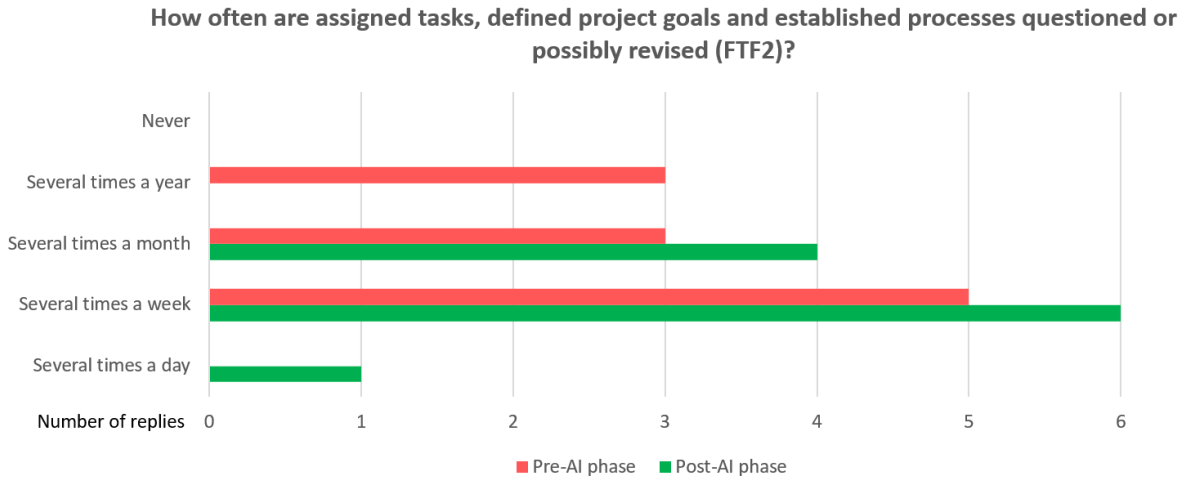

Figure 32: FTF2 Pre-AI/Post-AI survey response comparison on how often assigned tasks, project goals and processes are questioned or revised

This shift that began in FTF2 in the post-AI phase was very similar to the beginning of the transformation in FTF1 in the pre-AI phase. Patterns changed in similar ways – however, the shift in FTF2 was far less profound than in FTF1 and started later.

5.5.3 Phases of Leadership Practice in the Meetings

Based on the identified processes of agential cutting and the enacted differences I was able to identify broader patterns that I class as different phases of leadership practice that represent different ways of doing leadership in the teams.

The two sub-phenomena of producing positions and producing issues and the identified leadership moments could be traced throughout all meetings. In the data analysis process, I assigned each leadership moment to one or to both of these sub-phenomena, as described above. The results of this referencing process and the related interplay of leadership moments and produced differences then created further sub-phenomena. These phases in the workshop project in the different teams, such as ‘ongoing struggles and problematic otherness’, represented the different phases of leadership practice in the teams.

Table 9 shows the different phases identified:

Table 9: Different phases of leadership practice in the teams across the project

	Workshop teams		**Non-workshop teams**	
	VT1	**FTF1**	**VT2**	**FTF2**
Pre-AI	Ongoing Struggles and Problematic Otherness	Seemingly Trouble-Free: Operating Within Sight	Ongoing Struggles and Problematic Otherness	Seemingly Trouble-Free: Operating Within Sight
During AI	Reconfiguring Leadership: Transformative Pressures	Unsettling the Settled: Emerging Honesty		
Post-AI	New Opportunities	Realise Hidden Potentials	Starting to Reconfigure Leadership	Starting to Unsettle the Settled

A further explanation of these broader patterns follows in the next chapter in which I present different meeting extracts from these different phases. This part of the analysis contains the further unfolding of the leadership process to make the entangled folds, the different sub-phenomena, visible. I do this by rebuilding the sedimented history (Barad, 2007, p. 80) of the boundary-making processes (e.g. the phenomenon of ‘ongoing struggles and problematic otherness’ that contains a trace of all the performative effects and sub-phenomena from the previous step of analysis that contributed to its emergence). As discussed in the previous chapter, the goal of an agential realist analysis is to rebuild this sedimented history (Schadler, 2019). This, of course, is a simplification of the process. However, it highlights the key characteristics of the intra-actions as the apparatus of appreciative inquiring supported the teams in their transformative process.

Table 10 and Table 11 show a summary of how leadership practice transformed and materialised in each of the teams and in each of the workshop phases on a lower level. Some of these aspects will be further analysed in Chapter 6.

Table 10: Summary of how leadership materialised in the workshop teams

	Workshop teams	
	VT1	**FTF1**
Pre-AI	**Ongoing Struggles and Problematic Otherness** - Team members are frustrated, confused and targets are not achieved - Focus on problems, especially with technology, and these get reinforced - Local priorities are more important than team priorities - Team members see responsibility outside of the team - A situation that holds creativity back - Team understands CT as tool - Little focus on organizational issues - Leadership hierarchical - A focus on division	**Seemingly Trouble-Free: Operating Within Sight** - Everything *seems* to be in order - Team members seem to work together well - Focus on problems, these get discussed but are oftentimes deemphasized, which mitigates the need to act and to get to the root cause - Team members stay in 'trouble-free' environment - A situation that holds the team back to move on - Team members blame other departments - Focus on organizational issues - Leadership hierarchical - Unexplored opportunities - A focus on division - Team members often distracted by laptops and smart phones
During AI	**Reconfiguring Leadership: Transformative Pressures** - Team members less frustrated - Still a focus on problems, but team members increasingly appreciate what works - Increased focus on opportunities - Team priorities get more important - Creativity emerges	**Unsettling the Settled: Emerging Honesty** - Disruption in the team and the situation gets 'worse' initially, as team members rethink processes - Attempts to deemphasize problems are now successfully challenged - Team starts to take on responsibility - Problems get deemphasized less frequently

	- Drawing on experiences from workshops
	- Team starts to understand CT as partner
	- Increased focus on organizational issues
	- Leadership practice more cooperative
	- Reduction of boundaries
	- Phase of transformation, in which material changes are introduced, such as:
	  - Guidelines for virtual meetings
	  - Purchase of CT and new meeting software
	  - Dedicated meeting rooms at different sites
	  - New approval process for expenses
		- Team members more 'honest' with situation in the team
		- Existing processes and practices are increasingly challenged
		- Phase of transformation, in which material changes are introduced, such as:
		  - Guidelines for face-to-face meetings
		  - Redesign of meeting rooms
		  - More meetings take place on the shop-floor at the location where the action takes place
		  - More voices are being heard, as more people are being involved in the meetings

Post-AI	**New Opportunities** - No frustration, but encouragement and motivation observable - Focus on opportunities, and these get reinforced by focusing on "the best there is" - Pushing of boundaries - Focus on team priorities - Team members build on each others´ ideas - Team understands CT as partner - Focus on organizational issues and team targets - More cooperation - Enabling space of action - Willingness to explore unfamiliar territory	**Realise Hidden Potentials** - Team members find a way out of the disruption in the previous phase - Encouragement and motivation observable - Focus on opportunities, and these get reinforced by focusing on "the best there is" - Focus on team priorities - Team members build on each others´ ideas - Team understands the bigger picture - Focus on organizational issues and team targets - Enabling space of action - Willingness to explore unfamiliar territory

Table 11: Summary of how leadership materialised in the non-workshop teams

	Non-workshop teams	
	VT2	**FTF2**
Pre-AI	**Ongoing Struggles and Problematic Otherness** - Team members are frustrated - Focus on problems, especially with technology, and these get reinforced - Local priorities are more important than team priorities - A situation that holds creativity back - Team understands CT as tool - Little focus on organizational issues - Leadership hierarchical - A focus on division	**Seemingly Trouble-Free: Operating Within Sight** - Everything *seems* to be in order - Team members seem to work together well - Focus on problems, these get discussed but are oftentimes deemphasized, which mitigates the need to act and to get to the root cause - A situation that holds the team back to move on - Focus on organizational issues - Leadership hierarchical - A focus on division
During AI		
Post-AI	**Starting to Reconfigure Leadership** - Team members start to see opportunities - Focus on problems, but team members start to focus on opportunities in certain instances - Team priorities get more important - Creativity starts to emerge - Team starts to understand CT as partner - Attempts to increasingly focus on organizational issues - First attempts to make leadership more cooperative - Willingness to cooperate - Ideas and transformation in VT1 get noticed	**Starting to Unsettle the Settled** - Team members see changes introduced by FTF1 and start to rethink their own processes and practices - Attempts to challenge processes and practices and current ways of doing things - Team members begin to become more ‘honest’ about the situation in the team

5.6 Chapter Summary

This chapter applied the research design and is one of two chapters presenting the findings of the diffractive analysis. This chapter presented findings from three analytical moves as a means to better understand the everyday aspects of leadership in the teams: the identification of positions and issues, the identification of leadership moments (moments of agential cutting), and the temporal distribution of these leadership moments and the positions and issues (enacted differences/agential cuts).

The first move of data analysis focused on the positions and issues that were produced in the meetings in the different teams. From an agential realist viewpoint, these positions and issues should not be understood as traditional categories, but as fluid sub-phenomena that transformed throughout the project. By focusing on these differences, I identified the boundaries drawn in the team meetings. The second move of analysis dealt with the identification of the agential cuts that produce boundaries: the moments in which leadership was enacted and differences were produced. Thus, the focus of this analytical step was not the enacted difference (produced position or issue) but the process of producing these. I clustered the leadership moments based on the actions of the participants. To capture the leadership moments in the data, I looked for the novelty in speech acts and identified leadership moments as they arose performatively in the juxtaposition of remembered pasts and anticipated futures and when they were immediately adjacent in the same speech act. By combining the analytical moves one and two, I could reference the identified leadership moments to the differences they produced, i.e. to the produced positions and issues. The third analytical move drew on the two preceding moves and focused on how leadership practice unfolded over the course of the sessions. In this analytical move I analysed the temporal unfolding of the positions and issues and of the leadership moments in the different teams. Together with findings from the pre- and post-AI survey results, this analysis provided a picture of how leadership transformed across the teams and throughout the project. As a result, different phases of leadership practice in the project could be identified for each team, which was based on the interplay of produced positions, issues and leadership moments.

The findings from this chapter indicate that the workshop teams VT1 and FTF1 undertook a profound transformation throughout the project as the teams learned and developed new ways of doing leadership, but there was also a slight shift in the non-workshop teams. Furthermore, the developments in the face-to-face teams and the virtual teams went into different directions.

Before the AI intra-vention, VT1 was struggling to meet targets and focus on solving problems. Throughout the project, the status quo was increasingly being challenged. In this process, boundaries were redefined, and hierarchies were challenged. Communication changed from a problem focus to the co-creation of something new by identifying and realising possibilities and by increasingly appreciating issues. VT2 did not participate in the workshops. The pattern of positions and issues produced in VT2 and the leadership moments throughout the project did not transform in the pre-AI phase, but it shifted slightly in the post-AI phase. This slight shift that could be observed in VT2 went into a similar direction as in VT1, as the turning point patterns changed in a comparable way, but the shift started later and was far less significant than in VT1.

Initially in FTF1, problems were deemphasised quite frequently. Modulating turning points were used to reduce the need to act. As modulating turning points decreased after the beginning of the workshops, the team seems to have started to recognise the need to address issues. Over time, modulating turning points decreased and challenging turning points increased further. In contrast to VT1, FTF1 still focused on problems in the second phase. In this phase, VT1 had already made the transition towards addressing issues from a more appreciative perspective. It seems as if problems that had remained under the surface for a long time in FTF1 needed to be moved into focus and dealt with. Over time, the team also moved towards dealing with issues from an appreciative perspective, which is a development VT1 had already experienced earlier in the project. Later than VT1, FTF1 developed a common focus and started to challenge and reduce hierarchies, boundaries and processes and procedures. A very slight shift in focus was also noticeable in FTF2. This shift in FTF2 went into the same direction as in FTF1, as the turning point patterns changed in a similar way, but the shift started later and was far less profound than in FTF1.

Throughout the entire project, both virtual teams focused more on issues related to technology and the positioning of technology. The face-to-face teams only rarely focused on these aspects.

All of this indicates that the L-a-PD process had a profound impact on the workshop teams and transformed the ways in which leadership was carried out in various ways. AI started to influence the workshop teams already after the first workshops. While the transformations in VT1 and FTF1 moved into different directions, their transformation carried on until the end of the observations. There was also a slight shift in both non-workshop teams in the post-AI phase, which will be further explored in the next chapter.

6 Delivering: Snapshots of Leadership

6.1 Introduction

This Delivering chapter forms the second part of the agential realist analysis to understand the transformation of leadership practice in the teams. The Delivering phase of AI stands for creating “what will be” (Cooperrider & Srivastva, 1987; Cooperrider & Whitney, 2011, p. 30). Accordingly, this chapter demonstrates how different ways of leadership practice emerged in the teams.

In the previous chapter I explained that to better understand the leadership phenomenon as practice of diffraction it is necessary to understand the diffractions, or in other words: the differential patterns of mattering that created the phenomenon. To understand these diffractions, it is required to understand the differences that matter and the material-discursive practices that contributed to their production. In the previous chapter I presented the first three moves of the analysis. The fourth analytical move is presented in this chapter. It illuminates the findings from the previous chapter further by focusing on how the material-discursive moves, the moment-by-moment interplay of producing positions and issues as well as human and non-human actors in the meetings work together to create diffraction patterns (Ramsey, 2016; Crevani, 2018). This chapter binds together the preceding analytical moves, adds another layer of analysis and illustrates the enactment of leadership through examples to make the insights relevant for practice.

In this chapter I present and analyse meeting extracts from observations at different moments in time, which allows me to analyse how “leadership emerges, not as the actions of individual ‘leaders’, but as collective movements and shifting trajectories in the conversational processes of interacting and relating” (Simpson et al., 2018b, p. 645). I also engage with the environment in which the meetings took place, because matter is not just passive material; it undergoes a process as it “stabilizes over time to produce the effect of boundary, fixity, and surface” (Barad 1998, p. 90). I have therefore, whenever I found it appropriate to support the findings, included an anonymised photo in the data presentation. I have selected photos that reached out

“from the inert corpus (corpse) of the data” (MacLure, 2013) and that animated further thought and exerted a kind of fascination in me (MacLure, 2013). Presenting fieldnotes and text extracts certainly cannot or can only in limited ways register the material effects in the unfolding scenario – the body language of the team members, the setup of the meeting room, or the engagement of the team members. I am not suggesting that these things can be fully expressed by a photo, but it certainly adds to a rich description of the event. Taking an agential realist perspective, I recognise that data have certain ways of making themselves intelligible, e.g. in situations when I became especially interested in a piece of data from an observed event (MacLure, 2013). Thus, I chose extracts of team-meeting conversations that I found most interesting to present. The episodes, ordered along their temporal sequence, were also selected as they illustrate the development of leadership practice in each team throughout the project.

I put into use the idea of leadership being entangled with a space of action that is continuously transforming due to boundary-making practices and thereby determines possibilities for actions (Crevani, 2011; Lindgren & Packendorff, 2011). This space of action became a central part of the diffractive analysis, in which I pay particular attention to how leadership moments in the team meeting conversations intra-act with human and non-human actors to open new possibilities, which defines action spaces by continuously shifting possibilities to act. Thus, in this diffractive analysis I trace how issues and positions are separated out and form diffraction patterns. The human and non-human actors are, for example, team members, technologies, thoughts, experiences, technology, workplaces and -spaces, and policies and procedures.

First, in section 6.2, I present and analyse meeting extracts of the virtual teams. In section 6.3 I present and analyse meeting extracts of the face-to-face teams. Section 6.4 summarises the differences in the teams over the course of the AI workshops and describes both the transformations and the lower level shifts in leadership practice in terms of what they mean for practice. This comparative discussion of the transformations and shifts that occurred in the teams provide a clear picture of leadership practice in each of the four teams at the end of the project. I link the findings to the literary body of leadership and to the survey results in Chapter 7, which is where I will formulate the final answers to the research questions.

6.2 The Virtual Teams

6.2.1 The Pre-AI Phase: Organisational Tensions and Problematic Otherness

In this section I present episodes from the pre-AI phase. I called the diffraction pattern that emerged from the positions, issues, and the turning points indicated in Figure 15 and Table 6 “Organisational Tensions and Problematic Otherness”, which will be further explained throughout the analysis. In this section I analyse how this pattern materialised through material-discursive intra-actions of human and non-human intra-actors.

Meeting information		
Meeting no.	2	
Team observed	VT1	
Participants		
Thomas	Process engineer	**German site**
Jonas	Quality engineer	**German site**
Alexander	Process engineer	**US site**
Anne	Production team leader	**US site**
Larissa	Process engineer	**UK site**
Marcus	Quality engineer	**UK site**
Christina	Process engineer	**Italian site**
Matteo	Quality engineer	**Italian site**
Gordon	Production team leader	**Italian site**

Team Meeting Observations

In the following extract the team discusses a project plan. I am with Christina, Matteo and Gordon at the Italian site. They are waiting for the other team members to join. The Italian team members are concerned about a CNC machine that needs to be modified before the team can start working on other actions of the plan. Figure 33 shows the material arrangement in the meeting room.

Figure 33: Snapshot of the Italian team waiting for the other team members to join (VT1 – pre-AI phase)

Gordon: I didn't really look at this one.

Christina: It should be more visible. I´m sure if it is on the wall in the office it will act as reminder for all of us, which might help the team. [Positioning – opening / Role of technology] However, we won`t get all these actions done before the end of the year. It's just too much. [Problematising / Organisational]

Gordon: See, this is the main problem. This machine needs to get modified and we can't do it ourselves. This is what has been holding us back. I have not heard from them. [Problematising / Organisational]

Christina: They really need to give us a hand, it's their job. They have outstanding actions. We have to work together more. I mean I´m also happy to help them if they need support. [Positioning – opening / Informal roles]

Gordon: Definitely. Matteo, what do you think?

Matteo: Well, they need to be given the time by their management. If it doesn't work we may have to escalate this further, but I don't think it will change anyway. These are their actions. [Positioning – closing / Formal roles]

In this meeting extract, three intra-acting non-human phenomena can be identified that play a role in the creation of the diffraction patterns in this phase.

Firstly, it can be observed that for Christina, the action plan that has materialised as Excel spreadsheet, is connected to the team´s ability to track progress and complete actions. For Christina, it is the location and visibilty of the action plan that influences how the project materialises. She prefers a physical action plan that can be seen and touched in the office, and not a virtual spreadsheet. In doing so, she identifies a potential that would improve collaboration. Now, however, the spreadsheet seems to serve as 'hidden' tool that is only occasionally used in meetings and acts as reminder of actions. The spreadsheet therefore could be understood as playing an active role in the non-human diffraction patterns producing positions and issues of separation.

Secondly, I argue that the physical distance between the teams is another non-human phenomenon that is involved in the creation of issues and positions. After all, the virtual team seems to struggle to make progress and while this also seems to be linked to the spreadsheet that is hidden in the virtual space, it also seems to be related to the skills gap in the local team. As the required skills are not physically in one space, the progress slowed down. Linked to the physical distance is also the team´s inability to communicate frequently with each other due to distance and the related use of technology, as Gordon´s statement "I have not heard from them" indicates.

Thirdly, a host of further intra-acting and non-human phenomena are involved in the creation of issues and positions, all of which are related to the knowledge and experience from previously working with the virtual teams. The history of the project and past meetings have also partially materialised on the spreadsheet. Christina and Gordon, for example, problematise the outstanding actions on the spreadsheet. Quite interestingly, Christina is open to work more collaboratively with the other team members and so she is promoting collaboration and reducing barriers. However, Matteo steers the conversation toward the effect the management team would have on the team´s success by re-prioritising work, which is based on previous experiences he made in the past. This is indicated by his expression "I don´t think it will change anyway". This shows how a hierarchical structure can limit a virtual team´s ability to act by reflecting on experiences and by reproducing the past. Matteo´s expression "these are their actions" indicates that the spreadsheet acts as an artefact to divide the team members, instead of promoting collaboration. This

shows the limiting effect that defined responsibilities have on this virtual team. I argue that the frustration of the team members in the enacted diffractive pattern is also traceable to the physical distance between the team members. This extract also illustrates two potential opportunities to improve collaboration. One is that technology, in this case the spreadsheet, could be used differently. The other one is that the team members should support each other more. However, these sparks of potential do not materialise further.

As a result, the team´s ability to act is diffractively enacted into a situation in which they rely on the skills of the other team and the other team´s local management to prioritise actions. It can be observed that the team members assign 'power' to these managers while the team members themselves are unable to escape this situation.

The meeting continues as the other team members join:

Thomas: I cannot see the file. Last time I needed to get IT to sort it out. [Problematising / Technological]

Anne: Hiya, sorry, and I can't hear you very well. Any chance you can increase the sensitivity of your microphone? [Problematising / Technological]

Larissa: I have put my loudspeakers at maximum but can't hear you very well. Can you do something or I have to log out. [Problematising / Technological]

This shows another common phenomenon that I observed, namely how technology can serve as centre of disruption. The communication technology used seems to have created audible and visible boundaries and limited the flow of collaboration (Wageman et al., 2012; De Paoli, 2015). It also demonstrates the frustration of the team members when problematising the issues, and it can be assumed that the way the team members experience and deal with the technological issues contributes to the tensions and the deficit orientation in the team. This shows the impact of technology on what Barad calls "material-discursive practice" (2007, p. 178) and thus on the production of leadership (Orlikowski, 2015), because the team members spend a lot of time discussing these technological issues, which impacts their ability to act.

Let us have a look at a similar situation in VT2:

Meeting information		
Meeting no.	3	
Team observed	VT2	
Participants		
Laura	Process engineer	**German site**
John	Quality engineer	**German site**
Ulrich	Process engineer	**US Site**
Steven	Production team leader	**US Site**
Luke	Process engineer	**UK Site**
Mike	Production team leader	**UK Site**
Allen	Process engineer	**French site**
Danielle	Production team leader	**French site**
Julia	Process engineer	**Italian site**

Figure 34: Snapshot of the French team members in a meeting (VT2 – pre-AI phase)

Team Meeting Observations

These observations were made during a meeting in which VT2 team members discussed their project plan. While observing I am with Allen and Danielle at the French site. The team members face a similar situation as VT1, and they discuss the best way forward to modify another machine at the Italian site in a different production line.

Allen: It has found its way onto the action plan and not without reason. It really is the next action that needs to be completed. [Positioning – opening / Role of technology]

Laura: Okay, so, we could probably come over, but I don`t know when. Julia, eventually you will need to solve this locally and train people up. [Positioning – closing / Informal roles] It's not that I don't want to help but we also have other commitments. I would need to ask my boss when he will free myself up. [Positioning – closing / Formal roles]

John: That is the problem. I don't know what to work on. We can't focus on everything. I get pushed to support the new products project as well. [Problematising / Sense of direction]

Julia: I know, it`s frustrating. I don`t have an answer really.

Laura: But again, they have pushed it on us. There is not much we can do about it. [Positioning – closing / Formal roles] and our work here hasn`t reduced, but we are still expected to deliver it so need to have time for it. Really, I think we should push back on it. [Problematising / Sense of direction]

John: We tried this before and this doesn´t change anything [Positioning – closing / Formal roles].

In this extract it is possible to identify a conflux of non-human phenomena that contribute to the production of issues and positions. In addition to the phenomena that could be observed in VT1, such as the distance of the team members as well as a lack of skills that make a visit necessary, further phenomena can be observed in this extract.

The extract indicates again an entanglement of the Excel spreadsheet with the practice of leadership (Friedland, 2015; Hodder, 2012), because it is setting the agenda for what is to be discussed (Crevani, 2010). Allen positions the spreadsheet as a tool that makes the issue being discussed more important and supports collaboration. He achieves this by reminding the team that the issue has found its way onto the spreadsheet “not without reason”, which indicates that the spreadsheet can partially be understood as the materialised past of the project. However, the Excel action plan also seems to act as a source for frustration and confusion among the team members, as they do not find themselves capable of achieving the targets with the resources they have available.

This takes us to further non-human actors that are playing a role in the enactment of positions and issues, namely the project goals that have been assigned to the team. There seems to be a frustration about the kind of work as well as the available resources. Laura highlights that they “never had to do that kind of work in the past”, which indicates the team members´ fixation on past experiences and events when it comes to the production of positions and issues. Laura´s statement “they have pushed this on us” indicates her frustration about this and indicates that there is a reluctance in taking responsibility.

This takes us to the hierarchical structure of the organisation as another non-human actor restricting the team´s ability to act. Another indication for this is that there is a

general impression among team members they need to get approval for a re-prioritisation of work, as various team members talk about a lack of time, which could also indicate a lack of resources to complete the tasks. Laura, for example, reinforces formal hierarchies and highlighted “them” (the senior management team) who put it on “us”. While she seems to accept this in some way, she also problematises issues of prioritisation and resource issues. In addition to this, higher business expectations play a role, which is indicated by Laura´s statement that “we have never had to do that kind of work in the past”. Laura´s statement indicates that her past experiences, another non-human actor, in projects were different, which increases her frustration. As a result, the team´s ability to act is diffractively enacted into a situation in which they rely on others to prioritise actions. In the last turn Laura expresses that the team “should push back on it”. However, John´s reply “We tried this before and this doesn´t change anything” indicates that past experiences contribute to the production of a space of action that restricts the team´s ability to act.

All of these non-human actants as well as the physical distance between the teams and the lack of skills in one of the teams lead to an action space in which the team members are not only frustrated but also left confused and unable to proceed and get the work done. John, for example, problematises the issue of not really knowing what to focus on, which indicates a lack of collaborative focus. It is also unclear who is responsible for the task and if this issue can even be reversed.

I argue that there were two main diffraction patterns in the pre-AI Phase in VT1 and VT2. First, there were the Organisational Tensions. The discussions were not so much about the organisational issues. Rather, they focused on competing priorities, a lack of resources, other team members or the senior management team. The extracts illustrate instances of conflict and disagreement. There was confusion about what to focus on and who was supposed to do what. The team members seemed unable to work together closely, and this created tensions and frustration and takes us to the second aspect of Problematic Otherness. This relates to the observation that relational patterns in any hierarchical system are mainly driven by problem-focused visions, assumptions, and ideas (Ludema et al., 2006). Various non-human actants influenced the enactment of positions and issues. For instance, the use of technology and the team members´ experiences with technology led to quite a few

problematising turning points, which influenced the creation of boundaries. Existing hierarchical structures also played an important role in the meetings, as these structures were reinforced in this phase. While they were reinforced, the senior management team was blamed for the situation the team was in. Such defensiveness, in the form of blame shifting, is commonplace in a problem-focused environment (Cooperrider & Whitney, 2011). The team members saw others outside of the team as source of the problem, which highlights the Problematic Otherness. It could be argued that these contextual influences blocked the emergence of novelty and innovation. Thus, the team acted according to laws of cause and effect (Barad, 2007) by waiting for something external to change, instead of looking for ways to enact effects from within. I argue that the team was in a phase of uncertainty (Chia, 2017) and the team gave up its own destiny by reflecting on and reacting to external influences, which generated more of the same (Barad, 2007). This kept the team in the dysfunctional loop, because this focus on division and isolation cannot adequately account for the undifferentiated flux and restless transformation intrinsic to social life (Chia & King, 1998). Their conversations demonstrate a tendency towards established hierarchies and structures and a "subordination of movement, emergence, change and becoming" (Chia & King, 1998, p. 462). While they focused on an end goal of having the CNC machine modified, this kind of movement is "accounted for in terms of its *outcome* and not in terms of the dynamic process of change" (p. 462). This step-like and linear understanding of movement and the team's focus and reliance on the action plan and an associated focus on problems seemed to hold the team back from engaging with creativity and innovation (Chia & King, 1998; Chia, 2017). Based on these extracts I suggest that nobody in the team really bought into the tasks at hand. However, while on the surface it seems that a lack of resources, unclear priorities, or even the technological issues held the team back, the agential realist analysis reveals something else: leadership was taking place, but in a way that created Problematic Otherness that was entangled with Organisational Tensions. The related deficit-orientation and reliance on a structuring logic of otherness did not allow them to cope effectively in the face of uncertainty and to appreciate the nature and process of novelty-creation (Chia, 2017, p. 109).

6.2.2 During AI: VT1: Reconfiguring Leadership: Transformative Pressures

This section presents the observation of a team meeting of VT1 in the phase when the team was undertaking the AI workshops. To avoid repetition there is no extract of a VT2 team meeting, because no transformation in VT2 could be observed in this phase.

Meeting information		
Meeting no.	7	
Team observed	VT1	
Participants		
Thomas	Process engineer	**German site**
Jonas	Quality engineer	**German site**
Alexander	Process engineer	**US site**
Anne	Production team leader	**US site**
Larissa	Process engineer	**UK site**
Marcus	Quality engineer	**UK site**
Christina	Process engineer	**Italian site**
Matteo	Quality engineer	**Italian site**
Gordon	Production team leader	**Italian site**

Team Meeting Observations:

I am with Christina, Matteo and Gordon at the Italian site. In the first extract the team members discuss the team structure and in the second extract the modification of the CNC machine.

Instead of using a meeting room, the Italian team members use a sofa in their recently refurbished canteen. It also shows that the team members are using three laptops and Christina, Gordon and Matteo dial into the meeting individually. I do not observe the frustration that I observed in the pre-AI phase. Instead, while waiting for the other team members, Christina, Gordon and Matteo are laughing and quite relaxed.

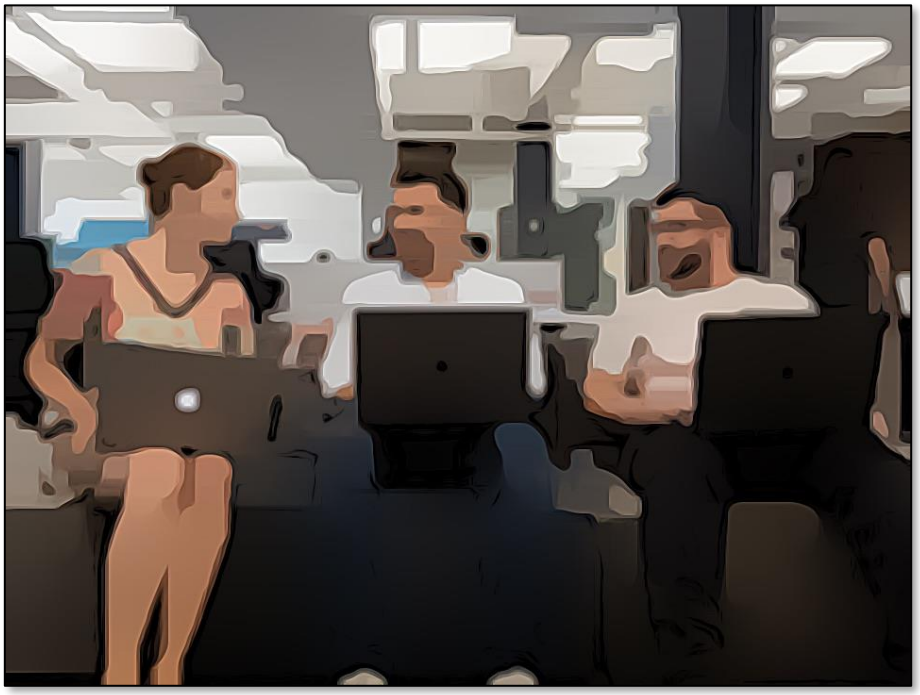

Figure 35: Snapshot of the Italian team waiting for the other team members to join (VT1 – During AI)

Thomas: Nothing has changed. I'm fed up with this. There's too much work and I can't focus to help this team. [Problematising – Sense of direction]

Marcus: I understand but disagree as well. You don't see what we've achieved already. [Challenging – Sense of direction] Look, we have transformed nearly the entire Italian site. You know the senior management team is appreciating this and this also has created a much better workplace. [Appreciating – Organisational]. But I agree with you that something must change. We can't work in the line structure and still be expected to work in this team long-term. The company has committed to give us the time to work on this. How can we get there? [Informal roles – opening]

Christina: I think it's up to us to create this structure as nobody else is doing it. We need to determine what works best. We already discussed this in the workshop. [Informal roles – opening]

Anne: I mean look at all the great changes we've made. We got much more done and really make an impact. Just imagine how much more we could achieve. [Appreciating – Sense of direction]

Thomas: Yeah, I mean if we could replicate this that would be fantastic. I suggest we think further about this in our next meeting, and all come prepared. [Aligning – Sense of direction]

In this episode it is possible to observe how alignment was created by challenging expressions of frustration with the help of non-human phenomena.

Thomas is problematising that promised changes have not been implemented and he is frustrated by the high workload, which is another non-human phenomenon. These promised changes are related to a different structure to free up capacity. Marcus, however, challenges Thomas´ viewpoint while highlighting a transformation that actually took place and in which the team played a role. It is possible to observe how experiences from the past play a key role here, as Marcus points out experiences of the ongoing and successful transformation of the Italian site. These experiences are another non-human actant in the process of producing positions and issues. As this transformation of the Italian site is meaningful and matters to the team, Marcus can actively appreciate it, which is a practice the team members learned in the AI workshops. The AI workshops could therefore be seen as another non-human phenomenon participating in this process, as the team members are drawing on experiences from this process. The influence of the workshops can also be observed when Anne refers to some other material transformations the team has achieved in the recent past. All of these are meaningful experiences the team members can use going forward, and which can have an impact on the enactment of positions and issues. One interesting utterance is Marcus' question: "How can we get there?". This question seems to have triggered a pattern of barrier-reducing turning points through which formal hierarchies are challenged and informal roles are produced. Thus, it changes the team´s action space as the team members re-focus, because "our questions focus our attention on what is "there" to be noticed" (Stavros

et al., 2016, p. 96). This question could be seen as apparatus itself (Barad, 2007), as it shifts the focus of the team to thinking about a different team structure. This is interesting, because it has been argued that traditional hierarchies may not be fit for purpose for virtual teams (De Paoli et al., 2017). Christina, then, is barrier-reducing as well when suggesting that the team should create their own structure. Thus, a non-human actor such as the hierarchical structure, which was seen as fixed and untouchable in the pre-AI phase, is now seen as something that the team members should influence. This builds the ground for Anne to appreciate the possibilities this would entail. In the next turn, an aligning turning point emerges when Thomas is agreeing to this. This shows how the team starts to find a way out of the deficit-orientation that could be observed in the pre-AI phase. This is achieved by successfully challenging the problem and then appreciating it. By doing this, the negative becomes a potent source of insight that serves more robust "vocabularies of hope" (Johnson, 2013, p. 204). This increase of appreciating and challenging turning points is also shown in Figure 15. This is what Raelin (2016, p. 125) relates to when he identifies leadership as "a coordinative effort among participants who choose through their own rules to achieve a distinctive outcome" and to demonstrate their own way out in moments of indeterminacy. This is supported by a range of non-human actants, such as recent and meaningful experiences the team can draw on and the AI workshops. In this meeting, the team members are less focusing on the idea that organisations are problems to be solved (Cooperrider & Srivastva, 1987), but they are looking into their issues increasingly with "appreciative eyes" (Stavros et al., 2016, p. 97).

The team members also discuss the modification of a machine:

Thomas: I am concerned something goes wrong as I've never done such a modification remotely with this new software. [Problematising – Technological] Just imagine what might happen if you lose the machine for a few days. [Problematising – Organisational]

Gordon: We should really have a backup plan.

Thomas: We don't and that's what I'm concerned about. I don't see and hear what the machine is doing when I make changes. I can't see how it reacts to what I'm

doing. It's just that I'm quite limited when I do it from here. [Problematising – Spaces and places]

Christina: You shouldn't plan to fail. I'm happy to support when you make the changes. [Challenging – Spaces and places]

Thomas: I just want to let you know the concerns I have beforehand.

Anne: Well, as Christina said, it doesn´t need to be that way. I'm sure they can get something set up. How could we make it work for you? [Challenging – Technological]

Thomas: Cameras would certainly help me a lot, but I would also need a microphone. It would then not be much different to actually being there, I guess. [Role of technology – Opening]

Christina: I'm really excited about this. This would eliminate one of our biggest roadblocks. We could then reduce overtime as the cycle time is likely to reduce. [Appreciating – Organisational]

It is possible to observe how important non-human phenomena, or the absence of them, are for a team´s space of action and ability to act.

In this case Thomas feels uncomfortable and explains that he has never done such a machine modification remotely before. This does not only indicate that he is still enacting a problem-focused approach with associated deficit talk (Stavros et al., 2016), but also how the material environment, such as location and technology, impacts leadership practice (De Paoli, 2015). Christina proposes to make changes to the workplace. However, Thomas does not seem convinced. Anne challenges Thomas and asks the question: "How could we make it work for you?" I argue that this question has a barrier-reducing effect as Thomas then positions the technology as helpful partner that would support him to modify the machine by reducing boundaries of visibility, audibility and space (De Paoli, 2015). Christina is appreciating the issue and she links the elimination of this roadblock to further opportunities. This indicates the generative force of questions and how the AI workshop contributes to a shift from talking about problems to talking about possibilities, because organisations gravitate towards even the most innocent questions they ask (Cooperrider & Whitney, 2011). This shows how a material change, such as the proposed introduction of cameras can transform boundaries and create new possibilities.

I called the pattern in this phase of talk ‘Reconfiguring Leadership: Transformative Pressures’ as it demonstrates how the team found a way out of the dysfunctional loop through challenging thoughts and assumptions. I also argue that these acts of challenging were only possible due to a conflux of non-human phenomena, such as the AI workshops, new technologies and new experiences the team members had made. It is interesting that the team members were not using the “unconditionally positive approach” (Saretsky, 2013, p. 3) that is often proposed in the mainstream AI literature. Thomas’ concerns and the opportunities Christina identified in the second extract, for example, were entangled and contextualising each other. Instead, the team members took an appreciative stance towards the difficult and on what is meaningful, which may be more generative compared to AI approaches in which nothing difficult is touched (Bushe, 2013). The team members disarmed problems, and the team grew past the grip of negative issues. There was also less blaming and less reliance on external influences and the team seemed to grow beyond old ways of thinking and acting and initiated a new way of leadership, in which the team members started to deal collectively with the unexpected. The extracts demonstrate how the human and non-human actors overcame boundaries, which gives rise to the application of other issues and consequently new actions became possible through agentic collaboration. This indicates the emerging generativity as the result of the AI workshops, because AI transforms the way people think so that new options for decisions or actions arise (Bushe, 2013). This reconfiguration of leadership put pressures on the team and the organisation as hierarchies and roles were reproduced and viewpoints were more often challenged than before. The word ‘pressure’ also related to the multiplicity of opposing viewpoints in this phase, as the team was only just starting to increase alignment in this phase. It could therefore be argued that AI was helping the team to open up directions (van der Haar & Hosking, 2004, p. 1020). By focusing increasingly on the unknown, they were taking attention away from known distinctions and categories, which seemed to allow them to see new opportunities in the realm of intra-active becomings (Barad, 2007). Thus, the team members moved away from a process of navigation and instead reached “out into the unknown” (Chia & Holt, 2009, p. 159) and were starting to find their way through as-yet uncharted terrain (Bouty et al., 2019).

6.2.3 The Post-AI Phase

6.2.3.1 VT1: New Opportunities

In this section about the observations in the post-AI phase I present extracts from VT1.

Meeting information		
Meeting no.	13	
Team observed	VT1	
Participants		
Thomas	Process engineer	**German site**
Jonas	Quality engineer	**German site**
Alexander	Process engineer	**US site**
Anne	Production team leader	**US site**
Larissa	Process engineer	**UK site**
Marcus	Quality engineer	**UK site**
Christina	Process engineer	**Italian site**
Matteo	Quality engineer	**Italian site**
Gordon	Production team leader	**Italian site**

Team Meeting Observations:

The team members discuss the next steps after the CNC machine modifications and a new team structure. I am with Marcus and Larissa at the UK site.

As part of the AI workshop actions the teams created dedicated meeting rooms at their sites that they started to use for virtual team meetings. These meeting rooms

improved the audio and video quality in the meetings due to the use of new cameras, new monitors and professional microphones.

Figure 36: Snapshot of the team meeting in the post-AI phase

Gordon: I think the team did a great job. This machine was giving us a headache for a while and now it's all sorted. [Appreciating – Organisational]

Larissa: As we all seem to agree this part of the project was successful, we should now think about what we've learned from the workshops and we should ask ourselves: what went well? [Appreciating – Sense of direction]

Christina: Yeah, good point.

Alexander: I think what really went well was the implementation of the cameras.

Larissa: Yes, these have been very helpful.

Anne: I don't think we should just ask ourselves what went well but instead think about how we can use this going forward, for example when creating the new welding area. [Challenging – Sense of direction]

Larissa: Well, the camera and microphone with the new software will help in the future. We can move it around and put it up to record any changes and it also reduces the need to travel. [Appreciating – Technological]

Jonas: This really improved the way we work as a team. It's a new workspace we can access. Everything seems much closer now. [Appreciating – Spaces and places]

Thomas: It went really well. I will be able to support more often now. I think we will also be able to share work in different ways going forward [Positioning – opening / Informal roles].

This extract shows how the transformation of workplaces is impacting the emergence of leadership moments and the production of positions and issues.

It can be observed that the team members appreciate the project itself and I argue that these appreciating turnings points have become possible due to the learnings from the AI workshops, which Larissa refers to. These learnings and the AI workshops can therefore be understood as one non-human phenomenon that intra-acts with other human and non-human phenomena and creates a new diffraction pattern. This now enables the team members to appreciate the work that was carried out. The gained experience can be helpful in future projects. This extract also demonstrates the influence of workplace improvements that materialised as new tools and equipment, such as cameras and microphones. This improvement in the technology used has enabled the team to succeed in the project and they can now work together in a different way. In this meeting, it is also the first time that the challenging of an appreciating turning point occurs. Thus, it can be argued that challenging in the New Opportunities phase takes place from a different viewpoint. Instead of challenging problematised issues, in this phase opportunities are challenged, which then creates further opportunities. This is the first time I observed this snowball-effect of creating opportunities and improvisation by building on other opportunities. This shows that also challenging turning points can be life-generating and appreciative and that the meaning of appreciation should not be limited to praising moments of excellence, but "requires connecting with what others value in the moment" (Barge & Oliver, 2003, p. 130).

In the following extract the team discusses the progress they have made so far to create a new welding area at the Italian site:

Alexander: Well, Thomas can you look into how much capacity you have used this month? If you can help Italy by making some of their parts we could potentially still go ahead and transform line 2 as well. [Positioning – opening / Informal roles]

Thomas: Unfortunately, we can't. We are full already will also be busy next month. [Problematising – Organisational]

Larissa: How about you Anna? I know you have never made these parts, but we all now need to help each other. [Positioning – opening / informal roles]

Anna: Yeah, I mean I can certainly look into it. I think we have some capacity left. I just need to double check. Jonas, I just need your help to clarify some technical questions if possible. [Positioning – opening / informal roles]

Jonas: Certainly! If this works, we may get both done and possibly even overachieve our targets. [Appreciating – Organisational]

In this meeting Thomas refuses to help, but instead of getting caught in deficit-based thinking as before, Larissa asks Anna for support. It is possible to argue that one non-human phenomenon plays a role in the production of positions, namely the learnings from the AI workshops, because "[t]he effect of Appreciative Inquiry is so strong and powerful that it can even transform deficit discourse and negative thinking" (Cooperrider & Whitney, 2005, p. 73). Anna is willing to support and is reducing barriers when she, in turn, asks Jonas for support. The extract finishes with Jonas appreciating the team's direction. In his turn, Jonas is appreciating that the team could even overachieve the targets.

In the phase of New Opportunities, I could observe two diffraction patterns. In the first extract, the 'snowball-effect' was triggered by a challenging turning point that was preceded by one and followed by two appreciating turning points. Thus, possibilities were not only limited to the original inquiry context but spread to other contexts as well, as, for example, technology and spaces and places. I argue that this is a practical application of Cooperrider's and Fry's call to develop a new language of non-deficit-based change, which is prospective (Shotter, 2012, p. 254) and points towards "future possibilities rather than past facts". This may be what Cooperrider (2013) calls the "the exponential inquiry effect". In this process, questions and words continue to do their work and help to create the world we later discover (Grieten et al., 2018). It seems that through AI the team members

developed a way “to challenge the knowledge base of others” and “to activate a system-wide investigation into moments of unique excitement and passion” (Ghosh, 2019, p. 40). Related to this, one could argue that the team’s choice to implement new technology to improve collaboration helped them to see further opportunities. While the team members still reacted to the environment, they actively created it as well. As Jonas highlighted, a new workspace had been created through the implementation of technology. Harrison and Dourish (1996, p. 69) suggest that “[s]pace is the opportunity; place is the understood reality […] We are located in “space”, but we act in “place””. Thus, this new space of working allowed the team to explore new opportunities, as space and place are co-evolving. This is also demonstrated by the new meeting rooms the team implemented. This demonstrates the role spaces and places play in the enactment of leadership (Carroll, 2016) and how the social and material are interpenetrative (Barad, 2003).

The second extract illustrates another transformation of leadership practice as the team members’ focus changed as well as the team’s ability to “learn their way out” (Raelin, 2018) through positioning practices. Problematising turning points were still present in this phase, but they were dealt with differently. The problematising turning point in this episode emerged after a series of challenging and opening turning points in an attempt to push the boundaries of what others thought was possible. It could be argued that the team members were looking for potentials that push beyond the boundaries of the problem (Bhattacharya & Chakraborty, 2019) and there were attempts to break through existing patterns. Larissa refused to accept the capacity issue and tried to collaboratively find a solution. The problematising turning point forced the team to move into a new direction and to explore other options. I argue that the team developed a mindset to accept a wide range of varied understandings and experiences and observed the problematised issue differently. There is also a focus on organisational issues in this extract, which indicates that there was a collaborative and coherent focus within the team as the team members focus on the issues they were supposed to be working on and they did not get distracted by technological issues.

6.2.3.2 VT2: Starting to Reconfigure Leadership

In this section about the observations in the post-AI phase I will present an episode from VT2.

Meeting information		
Meeting no.	14	
Team observed	VT2	
Participants		
Laura	Process engineer	**German site**
John	Quality engineer	**German site**
Ulrich	Process engineer	**US Site**
Steven	Production team leader	**US Site**
Luke	Process engineer	**UK Site**
Mike	Production team leader	**UK Site**
Allen	Process engineer	**French site**
Danielle	Production team leader	**French site**
Julia	Process engineer	**Italian site**

Figure 37: Snapshot of a VT2 team meeting in the Post-AI phase

Team Meeting Observations

In this meeting I am with Laura and John at the German site.

In this meeting, the team members are discussing a machine modification that VT1 already completed several weeks before them.

Mike: Guys, we still have not made any progress regarding the machine. This is starting to become a real problem. [Problematising – Organisational]

Allen: Yes, this really needs to be done. When will it be completed? [Aligning – Organisational]

John: Well, I don't see how. I don't suddenly get more time to come over. [Problematising – Sense of direction]

Mike: You should not use this as excuse, seriously. This is urgent now and we cannot lose more time. [Challenging – Sense of direction]

Luke: Did you already speak to your boss? If not, then please escalate this. You need to come over so we can move on, and he needs to understand that you need to be released for this task. [Positioning – closing / Formal roles]

John: He knows about it.

Danielle: Well, I know the other guys have modified the machine in Italy weeks ago. They have the same resources as we have. I think they have done a great job. They are now much further ahead. [Appreciating – Organisational]

Laura: I´ve heard of this. Apparently, they have done a really good job. It would be useful to apply what they´ve done. It just shows how much we need to focus on this now. [Appreciating – Sense of direction]

Luke: I agree, I wonder how they´ve done it that quickly. I guess it´s just a matter of prioritising. [Aligning – Sense of direction]

John: Don't get me wrong. I understand the issue and I will give my best to support. [Positioning / opening – Informal roles] However, I can't just book a flight. I need to run this through my boss. [Positioning / closing – Formal roles]

What this extract demonstrates is that until this meeting, VT2 has not made any substantial progress regarding this project since meeting number 3, even though 14 weeks have passed. This demonstrates why W-Tech and myself were motivated to carry out this study.

It is possible to identify various non-human actants that intra-act and contribute to the production of positions and issues. The first non-human actant that can be identified is the hierarchical structure. The power to prioritise work is still assigned to the senior management team as John´s and Luke´s utterances show. Local prioritites also still seem to be more relevant than the tasks within VT2 in the post-AI phase. However, these aspects are getting increasingly challenged. One example of this is Mike´s utterance. A large part of the discussion is centred around the progress of the other virtual team, which is another non-human phenomenon that influences the production of positions and issues in VT2. The team discusses the progress of VT1 and the common perspective is that they have done a good job.

This indicates that there have been some ripple effects as some sharing of information has taken place, which seems to influence the focus within VT2. I therefore argue that while the team was still struggling with deficit-based thinking and issues of prioritisation, it is possible to identify a slight shift. Even though the VT2 team members had not participated in the AI workshops it can be argued that leadership practice in the team in this phase was indirectly influenced by the AI workshops, which is a non-human phenomenon whose ripple effects seemed to

affect VT2 as well. I argue that the progress VT1 has made can be traced back to the AI workshops, and in this extract VT2 team members were appreciating the progress VT1 has made, which would not have happened without the AI workshops and the transformation of leadership practice in VT1. While the team members seemed to be affected in a certain way by the ripple effects of the transformation in VT1, the ripple effects were not strong enough to carry VT2 into new directions and to break the deficit cycle the team has remained in since the pre-AI phase. It is worth mentioning that the VT2 members at this point did not use any new meeting rooms as these, throughout the project, were dedicated to VT1 as they were part of the AI workshop process. They continued to use traditional meeting rooms on site or just their laptops and they did not create new workplaces or introduce new technology. I argue that we can therefore see no change in how often spaces and places or issues about a sense of direction were discussed.

6.3 The Face-to-Face Teams

6.3.1 The Pre-AI Phase: Seemingly Trouble-free: Operating Within Sight

In this section about the observation in the pre-AI phase I present episodes from FTF1 and FTF2.

Meeting information		
Meeting no.	3	
Team observed	FTF1	
Participants		
Carla	Process engineer	**German site**
Joe	Process engineer	**German site**
Tim	Process engineer	**German site**
Robert	Quality engineer	**German site**
Marcel	Maintenance supervisor	**German site**
Benjamin	Lean manager	**German site**
Roman	Production supervisor	**German site**
Lisa	Production team leader	**German site**
Anke	Strategic buyer	**German site**
Dennis	Market segment manager	**German site**

Team meeting observations:

In the first extract, the team discusses a problem with a customer order. The team has been having problems with this customer for a long time.

The team members are gathering in a meeting room. Figure 38 illustrates a typical situation in team meetings in the pre-AI phase. Each team member has a printed action plan, on which current issues are recorded. Figure 38 shows that most team members are working on their laptops while one team member is presenting.

Figure 38: Snapshot of FTF1 in the pre-AI phase

Roman: I am frustrated. We have tried it three times now and it's still out of tolerance. [Problematising – Organisational]

Robert: Why has it worked in the past?

Joe: We don't do anything differently. These are just difficult orders, and we all know that. Don't worry. Sometimes the raw material batch is not suitable. We usually make several attempts until it works. [Modulating - Organisational]

Marcel: What if it doesn't work?

Tim: We'll get there.

Benjamin: This costs an awful lot of money. Something needs to be done. [Problematising - Organisational]

Roman: We´ve never found a solution and it seems like a waste of time to deal with this. It's not ideal but we have other, more important things to deal with. [Modulating – Sense of direction]

Carla: This order needs to go out. It`s too late for anything else or we´ll get problems with the customer again. [Problematising – Sense of direction]

Tim: I agree. We can`t tell the customer that we can`t do it. We now have to get the order out as we´ve always done it. [Aligning – Sense of direction]

In this conversation, a customer order issue is enacted in different ways, leading to a unique diffraction pattern that is part of the pre-AI phase in the face-to-face teams. It is important to note, however, that it is not only the team members who engage in the enactment of this diffractive pattern, but also a number of non-human phenomena. It is possible to identify the multifaceted nature of this issue, and its entanglement with factors that the leadership literature would not necessarily see as part of leadership practice. I would like to draw attention to the way in which the team members separate the issue into different components, some of which are mattering more than others.

One way this diffraction pattern gets visible is through the team members´ characterisations of different factors that have an impact on the company´s profitability. It can be observed how the discussion separates out different aspects. While Benjamin is concerned about the costs that would have an impact on the budget, Roman emphasises the wasted time, and Carla is concerned about the customer relationship. It is interesting to observe how past experiences and events, as non-human actants, play an important role in generating positions and issues. One example I´d like to highlight is Carla´s utterance as she mentions that there might 'again' be problems with the customer. One more example is Joe's mitigating statement, which is also based on past experiences. These non-human actants contribute to an outcome of the situation in which the team members decide to do what they have always done before, instead of dealing with the root cause of the issue. While the team members seem to have different priorities, such as cost, time and customer satisfaction, these conflicting priorities intra-act with other non-human

phenomena and stop the team from exploring innovative ways of dealing with the issue. Instead of making a difference that matters, the team members do not make a difference and remain in a seemingly trouble-free environment as they can overcome the issue in the short-term. Another element that contributes to this is a boundary that is drawn between orders that are ‘normal’ and ‘not normal’. Joe´s statement that these are “just difficult orders” creates a situation in which these special orders just need to be sent out as these are not a daily occurrence. Joe, while he recognises the issue, modulates and thus deemphasises the problem. He does this by generalising (just difficult orders). He then reflects about past experiences and makes the past remembering relevant to the present engagement: “What we usually do is to make several attempts until it works”. Roman, in his response to the issue that Benjamin problematises, generalises as well and draws on experiences from the past: “We have never found a solution”. He then suggests not to focus on finding a solution to this as “there are more important things to deal with”. This shows that modulating turning points in FTF1 in this phase are often related to reflections and past events. However, reflective thinking has been related to a reductionist way of thinking about things and words (Haraway, 1997). Barad (2007) argues the physical act of reflecting merely shines back what is being reflected upon.

This extract illustrates one of the key diffraction patterns that emerged in both face-to-face teams in the pre-AI phase. This included a back and forth between problematising and modulating until eventually agreement was generated, which materialised in an aligning turning point, and which led the conversation away from looking for a long-term solution for the problematised issue. This pattern of generalising, reflecting on past experiences and creating a sense of urgency did not allow the team to see through a different lens and to step into “world-making” activities (Nayak & Chia, 2011). It could be argued that, while only a few team members engaged in this patterning, the entire team participated in this, because at no time did anyone attempt to contradict or challenge the modulating turning points.

The next episode is an extract of a team meeting of FTF2.

Meeting information		
Meeting no.	4	
Team observed	FTF2	
Participants		
Tom	Process engineer	**German site**
Peter	Process engineer	**German site**
Charlie	Process engineer	**German site**
Robert	Quality engineer	**German site**
Anne	Strategic buyer	**German site**
Bob	Production team leader	**German site**
Frank	Maintenance team leader	**German site**
Herbert	Production supervisor	**German site**
Joanne	Market segment manager	**German site**
Roland	Lean Manager	**German site**
George	Process Engineer	**German site**

Team meeting observations:

In this extract, the team discusses third-party inspections. Before certain orders can be sent to the customer, an independent organisation needs to inspect these. Figure 39 shows that, similar to the FTF1, some team members are working on their laptops instead of fully participating in the meeting.

Figure 39: Snapshot of FTF2 in a pre-AI meeting

Bob: We don't have all parts available for both inspections. I think we will have to cancel at least one of them. [Problematising - Organisational]

Robert: That's frustrating. This happens all the time and costs us probably around 8,000 a year. [Problematising - Organisational]

Tom: This happens because inside sales don't plan and they prioritise orders without having all the information like part availability. We can't do anything about it. It's their job. They should start doing their job properly. [Positioning – closing / Formal roles]

This extract demonstrates another diffraction pattern that I commonly observed in the pre-AI phase in the face-to-face teams. This involves problematising followed by barrier-enacting. In this case, Bob is problematising the organisational issue that at least one inspection needs to be cancelled. There are various non-human phenomena that participate in leadership practice here, as for example the absence of parts, the customer order, previous delayed inspections, and the department budget. Robert is problematising the issue as well and reinforces the problem when he expresses his frustration. In what follows, Tom is barrier-enacting when he identifies the responsibility of the inside sales team. By doing this he is also reinforcing formal structures in the organisation and introducing boundaries that separate and divide (Barad, 2007). The formal roles and structures in the organisation are therefore another non-human phenomenon playing a role in the

production of positions and issues here, as well as the processes in the inside sales team. While in the previous extract the modulating turning points mitigated the requirement to act, in this case the barrier-enacting turning point moves responsibility away from the team to the inside sales team. By reinforcing this divide, the team members are constraining opportunities. The team members also construct boundaries. In this instance the boundary is created between them (the project team) and the sales team as they “agreed to take these orders and now we have the problem”. The team members refuse to take responsibility and choose to see themselves as victims and to blame others.

I called this pre-AI phase in the face-to-face teams ‘Seemingly Trouble-Free: Operating Within Sight’. I chose this description as the teams´ ability to act is diffractively enacted into situations in which responsibility is shifted to another team or department, or the need to act is deemphasised. This restricts the team to improvise and to identify long-term solutions and realise opportunities.

The first diffraction pattern that was identified in these extracts relates to remembering the past in a way that created a similar present and predictable future that reinforced the status quo. In a sense the team was mirroring the past (Gergen, 2014) instead of making a new future. The observations show modulating turning points that deemphasised the need to deal with the root cause of an issue. I observed navigational behaviour (Chia & Holt, 2009) and I argue that the team’s ability to cope in these new emerging situations was very limited (Chia & Holt, 2009). The team members did what they always did by dealing only with the immediate issues and not the root causes of the issues. Even though from a business perspective this was never a concern as the face-to-face teams generally achieved their targets, it shows that there were many opportunities that remained unexplored. As a transformation is not achieved through the implementation of a known process (navigating) but requires the disruption of existing patterns (wayfinding) and experimentation to enable emergent futures and previously unconsidered possibilities (Denyer & Turnbull James, 2016), the team was unable to engage in “re-membering the future and re(con)figuring the past” (Barad, 2010; 2014) in a different way. Instead, they chose to focus on limiting events of the past, and thus they were choosing a present that predicted a similar future, which limited their space of action (Crevani, 2010).

The second pattern relates to blaming another department for the problems that were discovered. This is what Cooperrider and Srivastva point out when they argue that the more problems people discover, the more they begin to blame each other for them (Ludema et al., 2003). This pattern relates to the enactment of boundaries between the team and someone/something outside of the team. These strategies kept the team in a seemingly trouble-free environment, as the team tended not to accept responsibility for issues. They allowed the team to avoid differences by finding ways around dealing with the issues in depth. It was not difficult for the face-to-face teams to do this as all team members were located at one site and there were established processes. It is quite interesting that while there was a lot of problematising in this phase, there was no real conflict coming up. While there were different opinions and some attempts to do things differently and to explore the root cause of issues, the modulating turning points deemphasised the requirement to act and allowed the team to stay in familiar terrain.

6.3.2 During AI: Unsettling the Settled: Emerging Honesty

This section presents the observation of a team meeting of FTF1 in the phase when the team was undertaking the AI workshops. There is no episode of FTF2 presented to avoid repetition.

Meeting information		
Meeting no.	7	
Team observed	FTF1	
Participants		
Carla	Process engineer	**German site**
Joe	Process engineer	**German site**
Tim	Process engineer	**German site**
Robert	Quality engineer	**German site**

Anke	Strategic buyer	**German site**
Lisa	Production team leader	**German site**
Marcel	Maintenance supervisor	**German site**
Benjamin	Lean manager	**German site**
Roman	Production supervisor	**German site**
Dennis	Market segment manager	**German site**

Team meeting observations:

Figure 40 shows a very engaged team. Only one person is using the laptop to take notes.

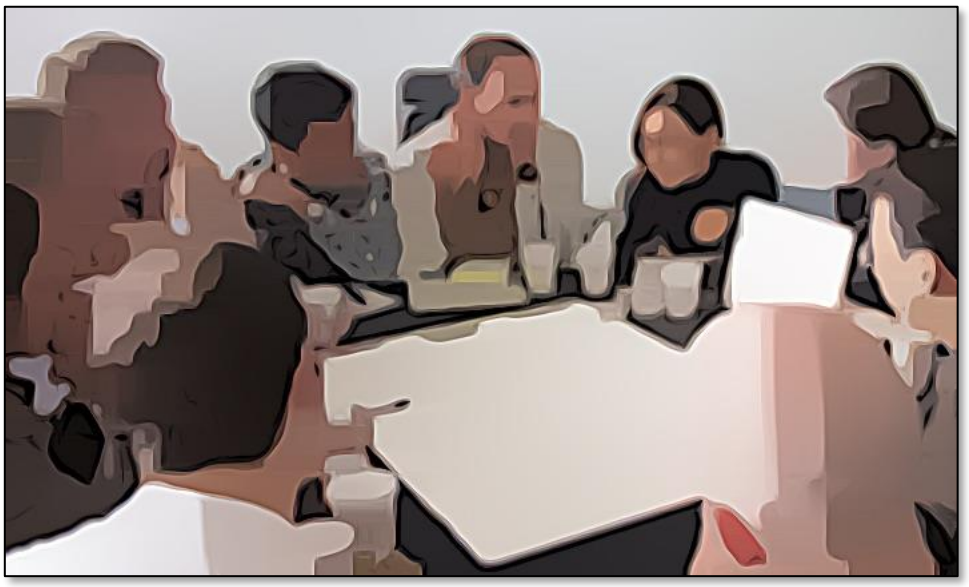

Figure 40: Snapshot of FTF1 in the team meeting

In this extract, the team discusses the same issue with a customer order that was already discussed in the pre-AI phase in meeting number 3. After the last meeting, the business has received another order from the same customer.

Roman: We cannot achieve the thickness they request. It can't go on like this. Last month we managed to send it out after six attempts. This caused stress and other customer orders got delayed. [Problematising - Organisational]

Carla: I agree. This gets annoying. We need to find a solution. [Aligning - Organisational]

Anke: Let's send an email to inside sales. They need to inform the customer that we cannot deal with this any longer. [Informal roles – Closing]

Tim: I wouldn't. They will ask why we have always managed to do it and suddenly we can`t. This won't make a good impression. [Challenging – Sense of direction]

Carla: As soon as we get the rolling machine that we have asked for several times we can get rid of this issue. It's up to the senior management team to finally approve this. [Formal roles - Closing]

Roman: Well, this doesn't help now. You know how long it takes to get approval. We need to think about something else. [Challenging – Sense of direction]

Lisa: It might be a project for someone to work on. But I don't see who can take the lead on this as we all struggle with time. [Problematising – Sense of direction]

Anke: I agree that it will take a while to get sorted. But I also don't know who can take the lead on this. [Aligning – Sense of direction]

In this extract we can observe a conflux of non-human phenomena that influence leadership practice. In contrast to the pre-AI meeting there now seems to be some agreement that a longer term solution needs to be found, which is indicated by Carla´s statement "we need to find a solution". However, again it seems to be that past events hold the team back. Tim refers to the negative impression it would make to stop producing these orders as the team has produced them in the past. Another non-human actant is the rolling machine that needs to get approved by the senior management team. It is also the long approval process that plays a role in this meeting and related to this the hierarchical structure, as the new machine needs to be approved by the senior management team. Lisa proposes a project for someone to work on, but limited resources and further non-human phenomena do not allow for this project to materialise, as Lisa´s and Anke´s utterances indicate.

This extract shows that there was some confusion in the team about which direction to take. While there were voices that tried to push responsibility away from the team and that were barrier-enacting, these voices were increasingly being challenged. It is worth pointing out that in this phase the team members seemed to be recognising a requirement to act, but there was uncertainty about how accomplish this as directions were unclear. The team was in a phase of uncertainty (Chia, 2017). In this phase, problems were still coming up and there was a decreasing tendency to mitigate issues. The team was starting to accept responsibility for daily issues instead of working around them. Related to this, the team started to challenge structures and procedures. With the problems being discussed more openly and honestly, the team challenged and moved boundaries. This created more intense discussions about issues, because “when an exploration is directed towards human problem and conflicts, in most of the cases the intensity of the problem increases” (Ghosh, 2019, p. 40). I argue that in this phase, even though problems were challenged, FTF1 was struggling to generate a common focus as alignment started to emerge only very slowly towards the end of this phase (see Figure 15). In addition, the tone in the meetings became more challenging and previously unimaginable suggestions became possible, but these often did not materialise further. I called this phase ‘Unsettling the Settled: Emerging Honesty’ as it was a constant up and down and the stability of the known and familiar of the pre-AI phase became unsettled. Also I felt the team became more honest by acknowledging these problems and the requirement to act.

6.3.3 The Post-AI Phase

6.3.3.1 FTF1: Realise Hidden Potentials

This section presents the observation of a team meeting of FTF1 in the post-AI phase.

Meeting information	
Meeting no.	14
Team observed	FTF1

Participants		
Carla	Process engineer	**German site**
Joe	Process engineer	**German site**
Tim	Process engineer	**German site**
Robert	Quality engineer	**German site**
Marcel	Maintenance supervisor	**German site**
Benjamin	Lean manager	**German site**
Roman	Production supervisor	**German site**
Lisa	Production team leader	**German site**
Anke	Strategic buyer	**German site**
Dennis	Market segment manager	**German site**

Team meeting observations:

Figure 41: Snapshot of FTF1 post-AI meeting on the shop-floor

In the first extract, the team discusses the same issue with a customer order that was already discussed in the previous phases in meetings number 3 and 7. The team decided to involve machine operators and to hold this meeting in the production cell in which these orders are produced (see figure 41). The customer and supplier names have been anonymised in this extract.

Roman: We want to avoid the same problems and agree on a way forward before we start working on this order. I can't believe we have accepted another order. [Problematising – Organisational]

Dennis: Firstly, I want to thank the team. I know making these orders is frustrating. We are good at making something happen if it's urgent. So, I've spoken to the customer this morning and they appreciate our efforts and it's important to know that they can only get these parts from us. [Appreciating – Organisational]

Tim: Oh, really good to hear.

Lisa: So, the problem is that we still run additional overtime to get these parts out. These costs are not reflected in our standard costs. We will have further problems if we don't change this. [Problematising - Organisational]

Operator: We could explore a new set of rollers?

Benjamin: Ah we looked at that already a year ago and the costs are just massive compared to the benefit. Not worth it. [Modulating – Organisational]

Dennis: Don't rule it out straight away. It's important to explore all options. [Challenging – Sense of direction]

Benjamin: Well, okay, we can look at it again.

Carla: It's important to point out that the customer has been happy most of the time. So, what are the potential ways to achieve this, without all the rework? [Appreciating – Organisational]

Operator: Could we explore subcontracting? I think C&R do quite a lot of work for us at the moment and it's going really well. [Appreciating – Organisational]

Anke: I could certainly explore this further.

Marcel: Great. And can we ask KRS [the customer] to come in? This would allow us to discuss their requirements in detail. Maybe there's some space for negotiations about some of their requirements. For example, does this chamfer really need to be there? [Informal roles - Opening]

Carla: Yeah, some of their requirements might be historical and perhaps we can find a way to make it easier for us and ideally find something we can improve for them as well. [Aligning - Organisational]

Lisa: It's been really useful to discuss this here. We should do this more often. It´s really beneficial for the brainstorming and if you see it in front of you it´s much easier to participate. [Appreciating – Spaces and places]

The issue is addressed from an appreciative point of view for the first time in this meeting. The first non-human phenomenon participating in this process is the idea that the customer can only purchase these parts from W-Tech. Dennis´ utterance, in which he appreciates the work the team has done in the past, is related to this. Another non-human phenomenon is the additional cost that is related to overtime and rework, which is linked to the problematising turning point in Lisa´s statement. It can be observed that new ideas and thoughts emerge. I argue that these emerge as operators are involved as well, who can share new views. I also argue that the appreciative question that Carla asks leads to a noticeable shift in the conversation as various ideas emerge as a result. It is worth noting that appreciative questions

could not be observed in FTF1 in the ‘During AI’ phase. After this question, the team is focusing increasingly on possibilities and opportunities. One example is the purchase of new rolling machine tooling. Another example is the subcontracting of this process step, which I argue only was suggested as the operator is involved in preparing the material for other subcontracting jobs. Another idea that was brought up was to discuss the specifications with the customer, as some of these might not be required. I argue that this idea would not have come up without having some of these parts located where the meeting took place. Marcel, for example, refers to the chamfer that he sees. Past experiences and events also influence the production of issues and positions in this meeting. Benjamin, for example, deemphasises the need to act after an operator suggested to purchase new rollers by mentioning this has already been explored before without success. However, this statement is successfully challenged by Dennis and Benjamin then agrees to consider it once more. Lisa appreciates how useful it was to hold the meeting on the shop-floor, which indicates the importance of spaces and places in the enactment of leadership. The setting is part of the apparatus (Barad, 2007) and therefore always influencing leadership practice. By holding the meeting on the shop-floor, the team made the conscious decision to do something differently, and some opportunities might not have emerged otherwise.

While FTF1 dealt with issues from a problem-based perspective in the first two phases, the team started to appreciate what works in the post-AI phase. In these ongoing relational moments, in which they relate to each other and in which a common perspective emerges, a collaborative movement starts to emerge. This is why I called this phase ‘Realise Hidden Potentials’. According to Simpson (2016), agency and power can be found in the leadership moments that emerge as intra-actors coordinate work in collaborative ways. These changes of direction create spaces for new opportunities and actions and are full of agentic collaboration. According to Raelin (2011, p. 199), agency is “the manner in which we make a difference in the world by mobilizing social actions”.

The team found alignment and generated coherence to work on these issues in more depth to realise hidden and unexpected potentials by addressing the issues from an appreciative standpoint and by accepting responsibility. What made this phase in FTF1 distinct was that the team seemed to have changed focus and started

to work with the whole system by involving other people of that system in finding possible ways to deal with issues. This phase also included appreciative questions, which inspired “collaborative and wise action” (Holman, 2010, p. 202).

Modulating and problematising turning points still appeared in this phase, even though they were declining (see Figure 15). However, if they appeared, then they were successfully challenged. Barriers were reduced by actively involving other departments, other project teams, suppliers and customers. The team was therefore engaged in a process of “continuous correcting” (Berger, 2005, pp. 124/125), similar to a carpenter with a saw, who must continually adjust movements to maintain alignment with a moving target (Ingold, 2009). When the appreciative question emerged, however, there was a noticeable shift in the rhythm of leadership.

6.3.3.2 FTF2: Starting to Unsettle the (Presumed) Settled

This section presents the observation of a team meeting of FTF2 in the post-AI phase.

Meeting information		
Meeting no.	14	
Team observed	FTF2	
Participants		
Tom	Process engineer	**German site**
Peter	Process engineer	**German site**
Charlie	Process engineer	**German site**
Robert	Quality engineer	**German site**
Anne	Strategic buyer	**German site**
Bob	Production team leader	**German site**
Frank	Maintenance team leader	**German site**

Herbert	Production supervisor	**German site**
Joanne	Market segment manager	**German site**
Roland	Lean Manager	**German site**
George	Process Engineer	**German site**

Team meeting observations:

The team members are discussing a recent customer complaint. Figure 42 shows the team members as quite engaged and focused at a meeting table without any laptops or mobile phones that acted as distractions in previous meetings. Until then, this had not been their usual way of working. Some team members had used smart phones and laptops quite openly during team meetings before, which had distracted them. Throughout the project FTF1 and FTF2 used different meeting rooms, so that any material changes introduced by FTF1 would not directly affect FTF2. In this case, however, the FTF2 team members went ahead and introduced rules and guidelines for team meetings that the FTF1 team members had introduced as part of the AI workshop series for FTF1 team meetings. These rules and guidelines for team meetings created ripple effects that reached FTF2 and prompted the FTF2 team members to act.

Figure 42: Snapshot of FTF2 Post-AI meeting

Robert: We need to take it seriously. This is one of our most important customers in that area. We can't risk anything. [Problematising – Sense of direction]

Charlie: Well, we always used to have these complaints. They just come up from time to time and in the past we all agreed they are too expensive to resolve so we just offer refunds. [Modulating – Organisational]

George: But we shouldn't just accept this going forward as it seems to be getting worse. Customer expectations might have changed. [Challenging – Sense of direction]

Frank: Eventually this is a business decision and not only up to us. We know why it happens. And also the senior management team is aware of this and they need to tell us what they want us to do. [Positioning – closing / formal roles]

Herbert: We looked at this in the past. We would have to apply much more primer, and the primer is very expensive. It would slow us down. I mean, look at the complaints we receive. This does not justify the additional cost. [Modulating – Organisational]

Robert: I don't agree. We always say quality comes first and we have to act now. [Challenging – Sense of direction]

Charlie: I think it is a balance.

George: Don't stick to what we've done in the past. As Robert said this is one of our most important customers in the area. If they have another issue like this it could damage our reputation in the region. [Aligning – Sense of direction]

Roland: I agree. Just because something worked for us in the past doesn't mean we can always get away with it. We might have to change something. [Aligning – Sense of direction]

Charlie: This creates problems. If we must prime each individual part, we will easily reduce our output by 20%. [Problematising – Organisational]

This extract is an example of a very lively discussion. I rarely observed this in the pre-AI phase in the face-to-face teams. Robert first introduces the issue and asks the team to deal with this complaint differently. This takes us to the first non-human phenomenon that influences leadership practice in this meeting: the complaint as phenomenon influences the discussion in various ways. Firstly, the complaint has come from one of the most important customers in the Middle East & Asia region. Secondly, a failure to deal with this complaint might damage W-Tech´s reputation. Thirdly, the potential solution could negatively impact the output of the production cell and lead to higher cost. Related to this, it is possible to observe conflicting priorities in this meeting. While Herbert believes that the few customer complaints do not justify the cost, Robert, Roland and George emphasise the need to act. This takes us to another non-human phenomenon, which is W-Tech´s set of values. Robert reminds the team that one of W-Tech´s values is a focus on quality. The last non-human actant I would like to point out here is the hierarchical structure. Frank emphasises that a key decision has to be made by the senior management team, before they can act. This shows a reinforcement of hierarchical structures and processes in this phase, and a reliance on the senior management team, which delays decisions. It could even be argued that the delay in the decision-making process as a result of approval processes tied to the hierarchical structure has led to this latest complaint, as there have been complaints in the past and a possible solution seems to be available.

In this phase I could observe that calls to do things differently were increasing in the team. There were less modulating turning points and a slightly increased focus on challenging boundaries. I could also observe slightly more challenging turning points than in the pre-AI phase (see Figure 15). Existing boundaries were more often pushed but still the modulating turning points came up frequently and the team generally tended to avoid to deal with the root cause of issues. Nevertheless, I observed that more and more team members started to understand the requirement to act and more often preferred to do something differently instead of moving responsibility away to another department or the senior management team, even though this still happened. It was also the first time that I could observe two aligning turning points following each other in this team. I therefore argue that alignment and coherence in this team increased in this phase. However, there were still conflicting viewpoints and problematising turning points still outweighed appreciating turning points (see Figure 15). The team also still had difficulties to find alignment when problems were discussed more openly, so discussions took quite long. In this phase the team focused less on organisational issues and more on the direction to take. This brought forth a mode in which team members brought the other to accept specific interpretations by persistently pointing out the relevance of their own interpretation. This is a tendency that I could also observe in FTF1 during the AI workshop phase. However, this shift was less profound than in FTF1, possibly because FTF2 did not participate in the AI workshops, and there were still many modulating turning points. I could observe that the team was heading into the same direction as FTF1, however, it was much slower.

6.4 Chapter Summary and Discussion

This chapter formed the second part of the agential realist analysis. It presented extracts of observations of all four teams and demonstrated how leadership practice transformed in each team throughout the project. I applied Barad´s conceptual repertoire, including diffraction patterns and the process of agential cutting to offer a perspective of leadership as a non-human phenomenon. Important here is that leadership from this perspective is part of the performative process altogether. It plays an integrative role in enacting the diffractive pattern of positions and issues that produces direction. I therefore argue that this chapter supports one of the main

claims of this thesis, namely that leadership can be conceptualised as diffractive practice that reworks organisational practice by producing direction. I have also illustrated how leadership emerges through particular entanglements of, among other phenomena, knowledge, past events, thoughts, technology, humans, time and space and makes certain 'outcomes' possible. Leadership is mobilised through this intra-activity of flows between human and non-human phenomena. The diffraction patterns that emerge and that were presented in this chapter are the bodily responses to this relational intra-action. In identifying these phenomena as contributors in the practice of leadership, I contribute to an appreciation of the concept of L-a-P. This is important for creating a richer understanding of how leadership is practiced and how 'outcomes' come to materialise, and, just as importantly, how other ways of leading are prevented from mattering. From an agential realist perspective, the emergence of specific issues or positions, and their co-existence, is the expression of various phenomena intra-acting with(in) the team.

In the following sections, I will provide a comparative discussion about how leadership practice transformed in each team, what this means for practice and how these differences emerged.

Pre-AI - VT1 & VT2 (Ongoing Struggles and Problematic Otherness):

In the pre-AI phase in VT1 and VT2 I observed the pattern of Organisational Tensions and Problematic Otherness.

The leadership pattern of Problematic Otherness relates to the team members' focus on problems and the associated deficit-talk, which kept the team in a dysfunctional cycle. While there was a general willingness to support other team members in this phase, the team openly complained about problems but was unable to develop a common focus to find solutions and a way out of this cycle. By focusing on problems in team meetings (problematising), they focused on division, isolation and self-identity, which reinforced these elements. The team members were oftentimes so focused on discussing problems that held the team back, that there was only limited time in meetings to actually brainstorm, discuss solutions and agree on a way forward. This dysfunctional cycle led to frustrations in the team and the team members did not successfully manage to challenge the status quo. One aspect that was oftentimes problematised was the aspect of technology. The material aspects of

technology were produced as problem and technology acted as centre of disruption. Adjustments to CT were often required in meetings to overcome related audible or visible boundaries. This took time and consequently, the team members had less time to discuss organisational issues, which held the team back from achieving targets. Thus, the team relied on the environment and oftentimes waited for something external to change that would cause a change in the team.

There was also a degree of confusion in the team and a lack of alignment, because not all team members accepted the issues that were discussed. The confusion related to what to focus on and responsibilities were sometimes unclear. Alignment on a certain direction was oftentimes missing. This situation was made more difficult due to the physical distance of the team members and local priorities, as team members had their individual line managers at different sites and in different departments. As a result, not all team members could support each other when required, which led to further delays. In meetings, local priorities were regularly produced as being more important than the project team priorities. This situation led to tensions in the team and contributed to the dysfunctional cycle, which was at play. While some opportunities for collaboration emerged in this phase, these sparks of potential did not materialise further due to the focus on problems, lack of alignment and boundaries that were enacted. The way in which leadership was enacted in this phase was navigational and did not allow the team to engage in a process of wayfinding to cope in the face of uncertainty.

The team also created boundaries by making persons, teams or other external factors responsible for the situation the team members were in and thereby looked for excuses for not achieving targets. The team members, for example, saw others outside of the team as problem, such as other departments or teams. VT1 and VT2 team members also reinforced hierarchies by using approval processes, managers or senior managers as excuse for poor performance, for example, if priorities were unclear. I observed a few times that the team members blamed the senior management team for the situation they were in.

It could be argued that the way in which the team focused on issues by problematising them and creating boundaries reinforced them in a way, which led to a subordination of movement, emergence and becoming. The team oftentimes reflected on issues, which reinforced them, instead of agreeing on a way forward.

This stopped the team from exploring innovative ways to address the root cause of issues. Non-human phenomena also played an important role in contributing to the production of direction in this phase, such as the physical distance of the team members, skills gaps at one site, past experiences and events, as well as the hierarchical structure in the organisation. Technology also acted as source of disruption and created some additional visual and audible boundaries. Due to a poor sound or video quality, team meetings were sometimes inefficient. There was no standardised process and alignment on how to use CT to dial into a virtual team meetings. As a result, some team members dialling into virtual meetings with their phones from their car, while other team members used their laptops.

These aspects also reinforced each other. One example are the technological issues that were identified and that provided additional challenges when communicating. This reduced the time available in meetings to discuss organisational issues, which then led to further frustrations and to the problematising of further issues.

The entanglement of these aspects created the diffraction pattern of Ongoing Struggles and Problematic Otherness. I argue that this diffraction pattern developed over time after the team had been created. As highlighted before, W-Tech had no prior experience with virtual project teams and no specific training was given. The analysis of this diffraction pattern explains why targets were regularly not achieved, more team meetings were required and communication among team members was oftentimes challenging.

During AI - VT1 (Reconfiguring Leadership: Transformative Pressures):

Very soon after the beginning of the AI workshops, I could observe an effect on leadership practice in VT1. In this phase I could observe a transformation of leadership in VT1 from mirroring to making, as there was an increased focus on generating ideas instead of reflecting on past experiences or problems. It was a transition phase within which new patterns of leadership practice developed in the team. I called this phase Reconfiguring Leadership: Transformative Pressures. In VT1 there was a shift from talk about problems to talk about opportunities and the team started to overcome old ways of acting. While problematising turning points decreased, appreciating turning points increased. However, a focus on problems was still observable, especially in the beginning of this phase. The transition towards

more appreciating turning points was achieved as team members started to appreciate some of their own achievements, by challenging the status quo and by discussing how to change aspects in the environment, as, for example, technology used or workspaces. I argue that these were direct results of the workshops, in which team members learned about AI and how to ask appreciative questions. When the team started to use appreciative questions the focus of the team and the rhythm of leadership changed as there was an effect observable when comparing the patterns before and after the question. I argue that the other activities in the workshops also supported the transformation of leadership practice in the team, such as the sharing of personal stories about peak experiences and the definition of a common vision. In this phase, the team also seemed to find alignment more easily and a common direction was beginning to form. I argue that this could have become possible as the team members had developed a common vision in the AI workshops. Just like apparatuses in themselves, the questions moved the team's focus and allowed them to explore new ways of doing things by changing assumptions and perspectives. By appreciating and by actively challenging the status quo, the team started to generate alignment and thus there was an increased coordinative effort to find a way out of the dysfunctional loop. Through the questions and the practice of appreciating, the focus on problems reduced. The team members more actively looked for what worked, and they started to find alignment. There was, however, a lot of challenging noticeable. This practice of challenging also led to transformative pressures. Generally, the team started to be willing to deal with the unexpected, the team members` new approach opened up directions to explore opportunities and the team started to reach into the unknown. In this phase, the team members identified necessary changes to the workplace that led to a reduction of boundaries but there were also opposing viewpoints. Some physical changes were already implemented early in this phase, such as additional or new CT to reduce visual and audible boundaries. I observed that this material change also had an effect on leadership practice in the team, as the improved quality of communication allowed for the team to focus more easily on organisational issues. The team members also created dedicated meeting rooms for virtual team meetings at the different sites. They also created guidelines for attending virtual team meetings to make sure that every team member used the same technology and dialling in from a car, for example, was not not accepted any longer. The team also started to actively challenge hierarchies and

existing structures that were deemed unfit for purpose in the current situation. Related to this, a new understanding and concept of roles and positions was developed by the team members in the AI workshops. There were tendencies to take on more responsibility within the team and to move responsibilities within the team. The team members developed these ideas in the AI workshops, and I therefore argue that the physical changes that were introduced were a direct result of the AI workshops. I argue that these material changes influenced leadership practice in the team, as these contributed to a new space of action for the team members, within which they could communicate in different ways and approached situations differently.

Post-AI - VT1 (New Opportunities):

In the post-AI phase of New Opportunities, VT1 had implemented most of the changes that had been defined within the workshops. In this phase I could observe a completely different way of doing leadership. The team, for example, carried out the virtual meetings in new meeting rooms that had specifically been set up for virtual team meetings. This reduced many of the audible and visual barriers. The team members also implemented further remote technology on the shop-floor to make it easier for certain team members to log onto a camera and see the area and make changes to a piece of equipment. This also allowed the team to involve other colleagues more easily in team meetings, such as machine operators. These material changes made it easier for the team members to support each other remotely and thus, the importance of spaces and places in the enactment of leadership was demonstrated and it showed how the adjustment of places can affect the space of action and thus leadership practice. In addition, the team focused more on organisational issues as technology had become less of an issue to worry about. This freed some time up for the team and I could observe that upcoming issues were usually produced as potential. In rare cases, if they were still problematised, then these were mostly challenged and reproduced as potential in another move. This was a continuation of the development I could already observe in the “During AI” phase. The interesting aspect is that these problematising turning points did not have a detrimental effect on the team anymore. They were rather acting as signpost for the team to look for new and other ways to overcome issues, and they showed the team that particular practices needed to be refined. In this phase, appreciating

turning points were also challenged and this practice of challenging created further possibilities, just like the snowball effect, which Cooperrider called the exponential inquiry effect, and which was not observed in any other team or phase.

Throughout the AI workshop phase the team had developed a new concept for a hierarchical structure in the team, which emphasised a more fluid and flexible understanding of roles. Thus, team members moved away from a traditional and formal hierarchical structure and informal roles were more often produced within team meetings. As a result, boundaries collapsed, which led to more shared and equal decision making, autonomy of the team and an active attempt of everyone to support everyone else in the team. Generally, there was an increased focus on future possibilities and a noticeable transformation in the rhythm of leadership. There was a more linear direction noticeable in the team as alignment was more naturally produced.

In this phase, many new patterns of leadership became observable. The team members, for example, became far less interested in which formal position or role someone holds. In the pre-AI phase and to a certain degree also in the workshop phase, the team members were more focused on producing boundaries between individuals, sites and departments. However, in the post-AI phase, the direction shifted to a focus on how to cross the boundaries and it was possible to observe a commitment to achieving targets and working towards high standards, as well as not letting down others. Within VT1, there was a shift from a situation in which direction was only achieved in a chaotic and rather messy way and where teams had to navigate within a defined framework, to a situation in which direction is accomplished in a rather linear way and where team members were more flexible to find new ways.

Post-AI - VT2 (Starting to Reconfigure Leadership):

In the post-AI Phase, a small shift in leadership practice could be observed in VT2. This was interesting, as VT2 had not participated in the workshops. Surprisingly, however, it could be observed that some ripple effects of the AI workshops did influence VT2. One example can be found in section 6.2.3.2. In this team meeting, the team members discussed that VT1 had managed to complete the modification of a CNC machine, and they themselves were still weeks behind. This led to some observable differences and would not have been discussed had VT1 not participated

in the AI workshops. There was appreciation in VT2 and a willingness to learn from the differences VT1 had enacted. I argue that these are clear ripple effects that would not have occurred without the AI workshops. However, there was no use of appreciative questions and despite an increased emergence of appreciating turning points, opportunities did not materialise further. One possible explanation for this is that VT2 had not participated in the AI workshops and while the VT2 team members saw and experienced ripple effects, they only had a minor impact on the team, as VT2 team members had not participated in any of the AI activities. It can also be argued that they did not materialise as the team still relied on hierarchies and needed to run certain issues, as for example the capacity issues, through the next hierarchical level for approval. Thus, there was less of a collaborative focus, but certain ripple effects could be observed: even though VT2 did not participate in the workshops, offshoots of waves generated in VT1 reached VT2 and opened the space for new possibilities.

In the post-AI phase, however, VT2 also implemented some guidelines for the participation in virtual team meetings, similar to VT1. They did this after VT1, and this can be regarded as another example of ripple effects that reached VT2. As a result, I could observe less disruptions and an improved participation in team meetings. While this did not have a significant impact on leadership practice in the team, I could observe less technological issues and a slightly stronger focus on organisational issues. VT2 also discussed about further changes that had been implemented in VT1, such as the hierarchical structure, which again shows how ripple effects reached VT2. However, a new structure was not implemented in VT2 in this phase.

Pre-AI - FTF1 & FTF2 (Seemingly Trouble-Free: Operating Within Sight):

In FTF1 and FTF2 in the pre-AI phase I observed patterns that I called Seemingly Trouble-Free: Operating Within Sight. The face-to-face teams oftentimes hit their targets. On the surface, there were no major issues within the face-to-face teams. However, when observing the teams more closely, some very interesting patterns became visible. In this phase, there was a strong tendency in the teams to stay within a certain comfort zone and within a certain space of action. Processes ran in predictable ways and new approaches to dealing with issues were oftentimes not accepted. This led to a situation in which issues were dealt with, but the root cause of these issues was oftentimes not addressed. While the face-to-face teams discussed problems quite often, there was a back-and-forth between modulating and problematising. The modulating turning points deemphasised the requirement to act and to deal with the root cause of the issue. This deemphasising happened by generalising or by remembering limiting events in the past. By remembering the past in a certain way, the teams reinforced the familiar past, made it relevant to the present and created a similar future. The remembered pasts were used to justify a sense of urgency to deal with the immediate issue and to distract from a deeper inquiry into the root cause that would provide the possibility to create a different future. Thus, I could observe navigational behaviour and the team was caught in the realm of the known and familiar past. While there was a lot of reflecting, the team did only rarely engage with the uncertain and unknown. The team was also barrier-enacting and boundaries were created that moved responsibility to the sales team. This was justified by blaming the sales team for the issues that were coming up. Issues were also often escalated to the senior management team as the team oftentimes reinforced the formal hierarchical structure. In doing this, the team was creating barriers between themselves and other teams and hierarchical structures were reinforced. I observed various attempts by certain team members to change these patterns, but the overall direction within the team did not shift due to strong attempts to deemphasise the requirement to act and to tap into unchartered territory. This restricted the team's ability to take different perspectives and engage in world-making activities of transformation. This was a really interesting observation, because as a project manager, I generally did not have to worry about the results that the face-to-face teams accomplished. I focused a lot on the virtual teams, as

these required more of my attention. The observations showed, however, that many opportunities within the face-to-face teams remained untouched and unexplored. As targets were oftentimes achieved, the senior management team accepted the face-to-face teams´ performance as acceptable and it was even set as standard to evaluate the virtual teams´ standards of work. It is worth noting that while on the surface things were looking acceptable or even good, there were many opportunities that remained unrealised and in the medium or long term these issues, which were not addressed, could damage W-Tech´s business.

During AI - FTF1 (Unsettling the Settled: Emerging Honesty):

I called the patterns that I observed in the workshop phase in FTF1 Unsettling the Settled: Emerging Honesty. I observed that in the case of FTF1 the AI process led initially to confusion and to a phase of unsettling the familiar, which had previously seemed so settled. The confusion related to uncertainty about the direction to take. I observed that in this phase, more issues were produced regarding which direction to take and this left less space and time to deal with organisational issues. It was a phase of transition. While the the face-to-face teams had their established processes in the pre-AI phase, in this phase of the project it could be observed how these were disrupted and it created a certain messiness in daily routines and practical coping actions. Whereas there were fewer modulating turning points than before and attempts to mitigate problematised issues were often challenged, there were, for example, not enough aligning turning points for the team to create a collaborative focus. Problematising turning points were increasing, because the team members started to discuss problematised issues in more detail as they started to understand the requirement to deal with the root cause. Related to this, the team members also started to take on more responsibilities and I could observe that the team started to challenge structures and procedures that led to a rearrangement of boundaries. This created noticeable discomofort in the team, as established processes and structures were increasingly challenged. There was a tendency in the team to take on more responsibility and not to push responsibility away to other teams or departments. It is worth mentioning, however, that the team members did not fall into a dysfunctional cycle as VT1 did in the pre-AI phase when there was a similar number of problematising turning points. It may be possible that this is because of the team's focus on issues related to a sense of direction, which opened a discussion about

how to move on and which direction to take. It might also result from the fact that the team members participated in the AI workshop process when they started to discuss problems in more depth. In contrast to the virtual teams, there were also no technological issues that created boundaries within the team. The team members also saw each other face to face each day, which may have also helped to prevent the emergence of a dysfunctional cycle. I argue that this disruption and messiness was required to allow for the creation of new patterns to emerge. It could be observed that the team members started to recognise that issues had to be dealt with in different ways than before. I called this phase Unsettling the Settled: Emerging Honesty, as I had the impression that the team members dealt with issues much more honestly and transparently. I argue that this was a direct result from the AI workshops, in which the team discussed their peak experiences and defined a common vision.

Post-AI - FTF1 (Realise Hidden Potentials):

In the post-AI phase in FTF1, which I called Realise Hidden Potentials, I could observe that previously hidden and unnoticed opportunities materialised. The team continued the transformation that could be observed in the “During AI” phase, namely that issues were discussed in more depth. However, in addition to this, the team was able to create a collaborative focus by generating alignment. There was a noticeable shift in leadership practice generated through the application of appreciative questions, which indicates that the participation of FTF1 team members in the AI workshops contributed to the transformation of leadership practice within the team. In the beginning of the post-AI phase there were still quite a few modulating turning points appearing in the team meetings, but this decreased towards the end of the observational period, which indicates that attempts to mitigate the requirement to act reduced. Even though there was an increased focus on possibilities, I could not observe the snowball effect that was related to challenging appreciating turning points to build on them and to generate further opportunities, as in VT1 in the post-AI phase. However, challenging turning points increased in this phase and when they appeared, they challenged modulating or problematising turning points. There was appreciation in the team about how useful it was to hold meetings in the area where an issue occurred and to involve customers, suppliers and people from other teams. There were increased attempts to carry out meetings

at the place of action and shop-floor operators and other colleagues who could contribute to the meetings were often spontaneously involved. In this phase the team was working on bringing responsibility back into the team, instead of blaming others or escalating issues. Instead of blaming others, there was now more collaboration as others were invited to share their opinion. While VT1 had moved to a different hierarchical project structure, FTF1 did not develop a proposal for a new hierarchical structure. However, I could observe more flexibility of the team members to take on additional responsibilities and barriers were reduced. My view is that while there was a significant shift in this phase, the team was still struggling sometimes, which may be because the team first had to go through a phase of unsettling in the "During AI" phase, before a new coherence could emerge. The virtual teams were in this phase of uncertainty already in the pre-AI phase and could therefore start earlier to generate coherence.

Post-AI FTF2 (Starting to Unsettle the Settled):

In FTF2 I could only observe a slight shift in leadership practice, and I therefore called this phase Starting to Unsettle the Settled, as I could observe similar patterns that I also observed in the "During AI" phase in FTF1. However, as already highlighted, these were far less noticeable. In this phase I could observe less modulating in the team compared to the phases before. There was also a slightly stronger focus on challenging modulating turning points and boundaries in general. This means that established boundaries were more often pushed than before. However, modulating turning points were still generated quite frequently. Team members started to recognise a requirement to act instead of deemphasising issues. However, even though there was honesty emerging and the tone in the meetings became more challenging, the team struggled to find alignment in this phase. I argue that in this phase the unsettling of routines was only just starting. One possible explanation for this is the sharing of information throughout the organisation. Even though team members of FTF1 and FTF2 work in different project teams, they all work at the German site and some of them work in the same departments. While FTF2 team members were excluded from any AI workshop activities, there were informal conversations between FTF1 and FTF2 team members, and the sharing of information could have resulted in the triggering of certain shifts also in FTF2. One example I would like to point out here is the adoption of meeting room rules and

guidelines. FTF1 developed certain rules for face-to-face team meetings. FTF2 heard about these and decided to implement these as well in FTF2 team meetings. This led to a noticeable shift in how FTF2 team meetings were carried out, and are one example of a material change that was introduced, which triggered different practices. As a result of the new guidelines, team members were not allowed to use laptops and smart phones during team meetings any longer. This led to more lively discussions and more participation of different team members in meetings.

7 Discussion: Study Reflections and Diffractions

This thesis was framed as AI. One characteristic of AI is its cyclical nature. It is not a linear process that stops when it is completed. It is a neverending process as the phases are repeated and organisations continue to learn and revisit phases in the process (Watkins et al., 2015). Thus, the findings of this AI process will be the foundation for future inquiries within W-Tech but also in future studies. In the sense of this way of thinking, this chapter discusses the main findings of the study, their implications, the contributions of this study, and makes recommendations for future research and inquiries. The objective of this chapter is to take a step back from the specific cases presented in each of the previous chapters and elaborate on what has been learned.

This closing chapter is organised as follows. First, I revisit the motivation to carry out this AI. I then present the key findings of the study and ground them in academic literature to produce actionable recommendations for leadership practice. Then, I bring together the threads of analysis, synthesise the findings arising from these, discuss the implications and reflect and diffract these through theory. From here, I move on to the overall contributions of this study and make suggestions for future research. I then conclude the thesis with some closing remarks.

7.1 Research Motivation

Within this study, I have set out to explore new possibilities for leadership in virtual teams and face-to-face teams together with the participants of this study. Not much empirical research has been carried out on the specific path I set out to explore: an appreciative inquiry into the development of leadership practice in face-to-face and virtual teams. Even more unusual was the approach to study this from an agential realist perspective. However, I argue that an agential realist approach is well-suited for the exploration of leadership practice, as agential realism re-visions humanist assumptions and the concept of practice itself (Barad, 2007). It therefore allows us to overcome the emphasis on linguisitic over material aspects, and the focus on the human in AI and

leadership research. The process of AI was also useful to carry out L-a-PD (Denyer &Turnbull James, 2016) as collaborative learning process associated with lived experience (Raelin, 2016) while the application of agential realism allowed to transcend the traditional boundaries between the human and the non-human and to recognise that social contexts are continuously changing. This combination of approaches was a suitable choice to develop new ways of doing leadership.

This study was motivated by the challenges that I faced when managing virtual teams at my workplace. The ongoing diffraction processes at the time led to specific entangled effects and materialised in missed deadlines, higher costs and unrest within the virtual teams. These materialisations were visible to the individual team members, the senior management team, the wider organisation and even customers, as it generally took the virtual teams longer than planned to implement new products or processes. To avoid these specific materialisations going forward, my employer had a significant interest to carry out this project.

On a smaller scale, the daily routines and practices within the virtual teams materialised in misunderstandings, a lower quality of work, meetings that were missed due to local priorities and frustrations among team members. Some of the spatial configurations and material aspects that influenced these visible effects as well were the physical distance among the team members, the CT used, as well as local hierarchies and priorities. Even past events contributed to these effects. I, for example, observed how virtual team members rushed due to missed deadlines, which then resulted in a lower quality of work. These or similar issues are also highlighted by researchers, who emphasise the difficult working environment and specific challenges involved with virtual teams (DeRosa and Lepsinger, 2010; Gazor, 2012; Lee, 2014; Trivedi and Desai, 2012; White, 2014). These issues that I experienced and observed put additional burden on my team members and created risks for the business, as the teams had been formed with a long-term vision to harmonise production processes across manufacturing sites.

The issues I experienced in my daily interactions with the virtual teams, and the challenges highlighted in the literature about virtual teams suggest that virtual

teams differ from face-to-face teams in various ways, and that a more distributed approach of leadership may be required in virtual teams (Bell & Kozlowski, 2002; Caulat & Pedler, 2012; Davis & Bryant, 2003; Muethel & Hoegl, 2010; Zigurs, 2002).

My original motivation was therefore to reduce or eliminate the issues in the virtual teams by exploring alternative ways of working with the virtual teams and by facilitating an AI workshop programme that would allow for a substantial development of leadership (Raelin, 2011) in the teams. The team members were asked to generate these new ways of leadership themselves and a process of AI was created within which FTF1 and VT1 participated. Even though the face-to-face teams achieved their targets, FTF1 participated in the AI workshops as well. This enriched the present study as it provided new insights into how leadership practice in face-to-face teams and virtual teams differs in this context. The teams FTF2 and VT2 acted as reference teams and did not participate in this process.

Interestingly, it had seemed in the pre-AI phase as if there had been no significant issues in the face-to-face teams, as they usually had delivered projects on time and within budget. However, as the previous chapters revealed and as I will further discuss in this chapter, issues in FTF1 first needed to be made visible through a diffractive process so that they could be addressed and new ways of leadership could emerge.

7.2 Findings

The main findings from this study address the research questions presented in section 1.2, which, to remind the reader, are:

- ***Research question 1:*** *How can Appreciative Inquiry be used to develop leadership practice in virtual teams and face-to-face teams?*
- ***Research question 2:*** *How is leadership practice different in each team before and after the Appreciative Inquiry process?*
- ***Research question 3:*** *How can leadership and its transformation be studied empirically from a practice perspective?*

- ***Research question 4:*** *How can leadership practice be theorised as an emergent social process?*

To address these questions, within this section, I describe and interpret the following central findings:

- ***Finding 1:*** *Leadership practice in virtual teams and face-to-face teams can be developed through an appreciative inquiry, which is transformed into a material-discursive apparatus of appreciative inquiring.*
- ***Finding 2:*** *Leadership practice has transformed in both workshop teams into a much more collaborative practice. Both workshop teams have taken different routes to get there. Leadership practice has slightly shifted in the non-workshop teams into a similar direction as in the workshop teams, but the shift is far less noticeable.*
- ***Finding 3:*** *Leadership and its transformation can be studied empirically by applying an agential realist approach including diffractive data analysis.*
- ***Finding 4:*** *Leadership practice can be theorised as a diffractive practice, which reworks direction by producing positions and issues.*

I now proceed to elaborate on each of these findings in greater depth and I will discuss their implications, before I discuss the study´s contributions in section 7.3.

7.2.1 Leadership-as-Practice Development Through AI

7.2.1.1 AI as Collaborative Learning Process of Appreciative Inquiring

The results of the study indicate that a transformation of leadership practice was achieved in the workshop teams FTF1 and VT1 through a series of AI workshops. Within this collaborative learning process, new boundaries in human-non-human and human-human relationships were generated, which created new capabilities for action and transformed the ways in which leadership was enacted. The AI workshop series can be understood as an apparatus of appreciative inquiring, within which new, more collaborative and distributed ways of practicing leadership emerged.

The findings support the idea that supporting teams and organisations to develop new ways of doing leadership requires a departure from traditional approaches to leader(ship) development. It has been argued that traditional approaches, in which individuals are trained (Raelin, 2011, p. 204) and perform in isolation do not give the opportunities to develop leadership substantially (Raelin, 2007, 2011). Team members should engage in a collaborative learning process (Raelin, 2016) in which learners address the question: “what kind of phenomenon is leadership?” While I provided the AI training and some guidelines to the team members, my objective was to give them as much influence as possible in the design of the workshops. Within this enabling space of action, the workshop series emerged as collaborative learning process, which is a non-traditional way of leadership development (Raelin, 2016). To achieve leadership development from such a perspective requires paying attention to the practice that is tied to the social relations between people, objects and their organisations (Ladkin, 2010, p. 3 in Denyer & Turnbull James, 2016, p. 264). As the team members were only given guidelines, they had the flexibility to create something new that worked for them, and they could change routines within an enabling environment. To transcend the dualist notions found in AI theory and practice, the team members were encouraged to expand their views and also consider material aspects in their tasks. The tasks also produced material effects, as for example flip chart posters or walls full of post-it notes. More substantially, the team members introduced changes to meeting rooms and new communication technology, and the findings show that these changes were entangled with new ways of doing leadership practice. These findings are aligned with the idea that there is more at play in the process of leadership than people (Carroll, 2016; Denis et al., 2010; Fairhurst & Connaughton, 2014; Hawkins, 2015; Ropo et al., 2013, 2015; Sergi, 2016). For example, Carroll (2016) points attention to spatial configurations, routines, and artifacts as pivotal resources for leadership, and she sees “any context or interaction as potentially ripe for immanent leadership action depending on how those involved understand themselves in relation to each other, their context, their shared work, and their purpose” (p. 107). I argue that this new understanding emerged in the workshops.

The findings are consistent with the idea that “Appreciative Inquiry is so strong and powerful that it can even transform deficit discourse and negative thinking” (Cooperrider & Whitney, 2005, p. 73). AI seemed to be the appropriate choice to support VT1 escape the negative spiral of deficit thinking and frustration. This could be observed and it materialised as a reduction in problematising turning points and an increase in appreciating turning points in VT1 and FTF1 throughout the workshop series (see Figure 15). After the workshops had started, I could regularly observe that old habits and patterns and thoughts were challenged, which led to new turning points that made new actions possible. This process was sometimes also introduced by an appreciative question. In this process of unlearning and re-learning, boundaries were created, sustained and eroded through processes of intra-action. I argue that these boundaries were created by the apparatus of appreciative inquiring itself, because Barad reminds us that agential cuts are always enacted by apparatuses (Barad, 2007). This will be further explored in section 7.2.1.2.

As a result, the VT1 team members developed more collaborative ways of doing leadership. The collaborative learning approach that was developed in this study may have also solved one of the key challenges in virtual teams, which is to figure out how to encourage team members to work cooperately and to create a culture that ensures that all the voices of leadership will be recognised (Pulley & Sessa, 2001). The findings also support the idea that in virtual teams, different ways of acting and behaving are required, and thus also a new approach to carrying out leadership work (Caulat & Pedler, 2012), as the team members developed something that worked for them and the business, which was considerably different to how leadership practice looked like before the workshops had started. However, the AI workshop process did not only support a transformation in the virtual team, but also in the face-to-face-team. The L-a-PD process also appeared to be suitable to support FTF1 to deal with their own issues (Raelin, 2007). Overall, the study has shown that AI is capable of engaging participants on a pathway of re-imagining *what could be* to facilitate the creation of a shared vision (Watkins et al., 2015) of leadership. This apparatus of appreciative inquiring includes and supports the decentralised development of leadership in virtual and face-to-face teams. Such an apparatus can provide the space for teams to learn about new ways of doing leadership in

ways that de-centre leadership from ‘leaders’. This AI workshop series transformed leadership practice as well as originated “out of the context and the challenges that people in the organisation face *collectively”* (Denyer & Turnbull James, 2016, p. 266). A transformation was achieved by disrupting existing patterns, by experimenting with emergent futures and previously unconsidered possibilities (Denyer & Turnbull James, 2016). AI was therefore successfully employed as method for Leadership-as-Practice development (L-a-PD) and could support practitioners in the future as alternative method for leadership development.

7.2.1.2 Leadership as Enactment of the Apparatus

In this section I would like to discuss one implication of the findings, which relates to the development and application of the apparatus of appreciative inquiring to enable L-a-PD. I argue that leadership was enacted by the apparatus itself. This has implications on how we understand leadership and leadership development in organisations, as it detaches leadership from individuals and leadership becomes a practice of/within the apparatus.

From an agential realist perspective, leadership is understood as phenomenon, which is mobilised through the intra-activity between human and non-human phenomena. Leadership can only be understood in the context of the apparatus, as apparatuses are always part of the phenomena they produce (Barad, 2007). In the case of this study, the apparatus of appreciative inquiring is entangled with the new ways of doing leadership (the phenomenon) that it produces. As argued in the previous chapters, leadership can be found within the process of agential cutting. Leadership therefore is an element of the apparatus of appreciative inquiring, because agential cuts are enacted by apparatuses (Barad, 2007). As apparatuses are not “static arrangements in the world, but […] dynamic (re)configurings of the world” (Barad, 2003, p. 816), and thereby both parts of phenomena, and phenomena themselves, I argue that it was the apparatus itself that enacted leadership and created new boundaries that manifested in new ways of doing leadership. This understanding could help us to approach leadership development in organisations differently.

From an agential realist perspective, people can be understood as being entangled in the material-discursive apparatuses of an organisation. I argue that

the apparatus of appreciative inquiring, with which the team members were entangled, was shaped in a certain way and made certain ways of doing leadership possible. These new ways of doing leadership differed from how leadership had emerged before the workshop process. More specifically, the boundaries and properties of a phenomenon (leadership) become determined through agential intra-actions. A specific intra-action, which relates to a certain material configuration of the apparatus, enacts an agential cut. The agential cut creates differences, and in this case different ways of doing leadership.

The agency required to conduct such an action is not something anyone or anything has or possesses. It is something that happens. Thus, agential cuts are not produced by individuals, but through the wider "material arrangements of which we are a part" (Barad, 2007, p. 178). Agential cutting is intra-active, because the act of cutting produces boundaries of entities that only emerge through their relation. In other words, agential cutting is a material-discursive practice where boundaries of the entangled phenomena are remade.

The individuals in the process cannot meaningfully be said to exist independently of the relation. And this relatedness is universal; it is not the case that human beings alone through their material-discursive practices lend existence and essence to all there is. In the case of this study, entities may include team members, office furniture, or communication technology. Each of these emerge through intra-actions in which all these seeming entities influence and inform each other and are entangled in complex ways with each other.

This can have significant implications for the leadership development in organisations. While traditional pre-designed programmes, in which individuals are "sent away to learn their leadership" (Raelin, 2011, p. 204) do not give the opportunities to develop leadership substantially (Carroll et al., 2008; Raelin, 2007, 2011), such an apparatus can provide the space for teams to learn about new ways of doing leadership in ways that de-centre leadership from 'leaders'. I argue that the L-a-PD approach, as it has been developed in this study, is particularly helpful to develop cooperative ways of doing leadership. Such an approach relates to real-time, in-situ actions that generate leadership in practice (Crevani et al., 2010). This goes well in line with what Raelin (2016, p. 134) writes: "[...] ultimately, leadership becomes a consequence of collaborative

meaning making in practice; in this way, it is intrinsically tied to a collective rather than to an individual model of leadership." As agential realism shows us, non-human phenomena also contribute to the emergence of leadership. These could be contextual aspects, such as furniture, meeting rooms, or technology. I argue that these are all part of the apparatus within which and through which leadership takes place, and these can also enable or restrict action.

I argue that AI helped the team members to detach from past events and experiences, which held the teams back. In the extracts presented in Chapter 6, it could be observed that leadership moments were influenced by past activities and events, and these sometimes held the team back. Such a reflective process, however, "displaces the same elsewhere" (Haraway, 1997, p. 16) and "remains caught up in sameness because of its mirroring of fixed positions" (2016). This focus on past experiences and problems also reinforced these problems (Watkins et al., 2015) and led to frustrations, which could be observed in the teams. The team members often predicted the future based on past mechanistic thinking. In the face-to-face teams, for example, this was oftentimes achieved by modulating and by making a past relevant to the future. In the virtual teams, this was regularly achieved by problematising past occurrences or current issues. I argue that within the apparatus of appreciative inquiring the teams could get beyond these past memories and the external influences, and reduced these reflective practices, which allowed the teams to become more creative and focus on opportunities. An emerging collaborative focus could be observed in the "During AI" phase team meetings in VT1. In post-AI meetings in FTF1 and VT1, an increased focus could be observed. Thus, it could be argued that AI changed patterns of being in the teams to becoming something different so that they could create from potential. The emergence of a shared vision and positive core in the workshops (Watkins et al., 2015) created a new future that the teams could 'remember'. Thus, the teams could draw a potential from the field of intra-actional becoming into reality by observing differently, which resulted in different agential cuts, which changed the way leadership was done. I argue that, especially in the workshop teams, the AI workshops have sharpened the team's skills of observing and the team members understood reality in a different way, because it is only through intra-action of observed and observing apparatus that there is an agential cut able to

reconfigure matter, reconfiguring boundaries and separations, or where indeterminacy is resolved (Barad, 2007). These leaderful moments of agential cutting then collapse potentialities into reality. These leaps of finding a way out of the indeterminacy (Raelin, 2016) were only possible by shared observing and focusing on a vision. I therefore argue that different ways of leadership practice arose from the different observations the team members made. This was made possible by a different action space that was produced from within the apparatus of appreciative inquiring. Thus, the AI workshops directly facilitated a reconfiguration of boundaries in human-non-human and human-human relationships, which created new capabilities for action and transformed the ways in which leadership was enacted.

It greatly matters in which way the apparatus is set up, because depending on how the diffraction apparatus of AI is produced, the recorded phenomena (leadership) will “emerge in particular ways, and through particular cuts” (Sauzet, 2015, p. 41). In this case, a collaborative learning process of appreciative inquiring was part of the apparatus and influenced the direction from the beginning. One non-human aspect that influenced the apparatus, for example, were the appreciative questions, which were asked in the beginning of the workshops. The apparatus supported the team members to develop a common focus and direction. In this study I introduced the new concept of intra-vening, a neologism that has emerged from my engagement with Karen Barad’s agential realism, AI and L-a-P. Intra-vention is a prospective movement that focuses on possibilities instead of on the essence of ‘the positive’, which brings previously overlooked or neglected aspects of activities imaginatively to the surface. Intra-ventions are performative with respect to their ability to be generative in the sense that they continuously *generate focus, produce directions, and resolve indeterminacy.* In other words, the apparatus of AI is generative in the sense that it helps participants to collaboratively strengthen their focus in a collaborative effort to co-determine a certain phenomenon. It therefore supports intra-actors (humans and non-humans) to co-produce a certain direction that allows new spaces for action and new possibilities to emerge. Intra-vening thus offers a posthumanist alternative to the humanist concept of inter-vention and is an answer to the call “for a broader scope of appreciation” in AI practice (Bushe, 2010; 2012b), and thus offers a way to

develop leadership practice in appreciative ways. With its focus on diffraction, it is a way of overcoming the dualities that are so prevalent in the AI literature. Instead, intra-vening is based on movement, process, entanglement, becoming, and transformation, which allows for more complete processes of appreciative inquiring, which include considerations of context. I argue that this is much more relevant for practitioners than traditional leadership development programmes. As these appreciative inquiry processes can take place in the organisation, the specific context as non-human phenomenon will influence the development of leadership practice, which may lead to a more suitable, or relevant, way of doing leadership.

Based on the above, I argue that decentralised leadership practice development programmes, such as in this study, can be understood as processes of reconfiguring boundaries that lead to an unfolding of possibilities by co-construcively shifting the focus to what has been indeterminate before. This is achieved through creating focus, producing direction and resolving indeterminacy. I argue that this nondualistic process of appreciative inquiring is initially directed and determined by the generative questions formulated and thus by the focus generated to uncover hidden and unnoticed possibilities. Appreciative inquiring can therefore be understood as apparatus that creates differences and creates the space for different ways of leadership to occur.

7.2.2 Leadership in Virtual and Face-to-Face Teams

7.2.2.1 Shifts in Leadership Practice

The findings of this study show that leadership practice transformed in the workshop teams in different ways. Detailed summaries were provided in section 5.6 and 6.4. While there are profound effects noticeable in the workshop teams VT1 and FTF1 already after the beginning of the workshops, there are also slight shifts in leadership practice noticeable in the non-workshop teams VT2 and FTF2.

In both workshop teams FTF1 and VT1 leadership practice transformed and a more collaborative and distributed way of doing leadership emerged. This supports the view that more distributed ways of doing leadership are useful in organisations (Bell & Kozlowski, 2002; Caulat & Pedler, 2012; Davis & Bryant,

2003; Muethel & Hoegl, 2010; Zigurs, 2002), and specifically in virtual team environments (Caulat & Pedler, 2012; DasGupta, 2011; Zigurs, 2002).

However, both teams got there in different ways. Initially in FTF1, issues were deemphasised quite often and FTF1 team members oftentimes did not address the root cause of issues. On the surface, however, and as FTF1 achieved targets, there was no requirement to change anything in the team. However, these mitigating actions decreased after the beginning of the workshops and the team seemed to recognise the issues and to deal with them more often. In this phase of disruption the team developed new ways of doing leadership and uncovered new patterns. Initially in VT1, there was a strong focus on problems and this even reinforced these problems (Watkins et al., 2015). This led to frustrations, which could be observed in VT1. Throughout the project, however, the status quo was increasingly being challenged. In this process, boundaries were redefined, and hierarchies were challenged. The team started to see technology as partner and also introduced various material changes. These material changes also differed between FTF1 and VT1. While FTF1 team members changed the layout of meeting rooms and the location of physical meetings, VT1 members introduced new communication technologies that worked and reduced boundaries. Both teams, however, developed new rules, guidelines and procedures that allowed them to make decisions when and where needed. Within this workshop process, communication changed from a focus on problems towards the co-creation of something new by identifying and realising possibilities and by increasingly appreciating instead of problematising issues.

VT2 did not participate in the workshops. The pattern of positions and issues produced in VT2 and the leadership moments throughout the project does not transform in the pre-AI phase and while the other teams were participating in the workshops, but it shifted slightly in the post-AI phase. The shift that could be observed in VT2 went into the same direction as in VT1, as the turning point patterns changed in similar ways, but the shift started much later and was far less noticeable than in VT1. FTF2 did not participate in the workshops. There was a slight shift in leadership practice and in the produced differences noticeable in FTF2 in the post-AI phase. These shifts moved into the same direction as in FTF1, but the shifts started much later and were less noticeable

than in FTF1. In the next section, I discuss what could explain these shifts in leadership practice in the non-workshop teams.

7.2.2.2 Entanglements and Ripple Effects

To explain what could have caused these shifts in leadership practice in the non-workshop teams, I would like to emphasise the concept of entanglement. From an agential realist perspective, everything is constantly intra-acting with an ‘entanglement’ of human and non-human processes (Barad, 2007). I have used the metaphor of Indra´s Net to explain entanglement in Chapter 3. At each node within the net, a jewel is reflecting every other jewel in the net. Each and all exist only in their mutuality and there is no single point from where it all arises. Within Indra´s Net, the myriad reflections within each glittering jewel, are the essence of the jewel itself. Each jewel could not exist without these reflections. They are all entangled. In other words, all phenomena are identifiable with the whole, but not in isolation, just as the phenomena that constitute a particular phenomenon are identifiable with it (Kaza, 2004). According to Cooperrider, organisations can be understood as networks. When any element of the individual/team/organisation is ‘touched’, all other elements are affected. This could explain how the teams FTF2 and VT2 were ‘touched’ as well when leadership practice in FTF1 and VT1 transformed and the entangled effects of differences materialised. Based on the metaphor of Indra´s Net, FTF2 and VT2 could not remain unaffected.

Some evidence can be found in the observations that ripple effects from VT1 have found their way into VT2, and that ripple effects from FTF1 have found their way into FTF2. In some meetings in the post-AI phase, VT2 members started to appreciate some of the results that the VT1 team members had achieved and took these as examples for further action. One of these examples can be found in section 6.2.3.2:

Danielle: Well, I know the other guys have modified the machine in Italy weeks ago. They have the same resources as we have. I think they have done a great job. They are now much further ahead. [Appreciating – Organisational]

Laura: I´ve heard of this. Apparently, they have done a really good job. It would be useful to apply what they´ve done. It just shows how much we need to focus on this now. [Appreciating – Sense of direction]

Here, VT2 referred to a machine modification that VT1 have carried out successfully. This phenomenon of VT1 being able to complete tasks and projects on time while VT2 is not, led to a shift in leadership practice in VT2. In this example, the results VT1 had achieved were appreciated and the approach and status quo within VT2 was challenged. It could therefore be argued that indirectly these were still the ripple effects of the apparatus of appreciative inquiring, which reached VT2.

In section 6.3.3.2 I described observations of an FTF2 team meeting in which FTF2 had changed their way of working. While the usual mode of working in team meetings was to use phones and laptops quite a lot, which led to the team members being distracted, there was a noticeable shift in how the team members acted within team meetings. In this team meeting the team members had stopped to use smart phones and laptops and were fully focused on the team meeting (see Figure 42). The reason for this shift in the team members` way of working was the implementation of rules and guidelines for team meetings. FTF2 introduced these guidelines after they had been introduced by FTF1 as part of the AI workshop process. While the FTF2 team members were not involved in the workshop process and had dedicated meeting rooms throughout the project, they still adopted these guidelines that had been introduced by FTF1 for FTF1 team meetings. Even though FTF2 team members used different meeting rooms than FTF1 and even though they did not participate in the workshop series, they still communicated with their work colleagues and saw, heard about or experienced some of the transformations introduced by FTF1 in the AI workshop series. This may have motivated FTF2 team members to question their own routines and ways of working. I argue that this shift in how FTF2 team members carried out team meetings led to a shift in leadership practice, as this new space of action enabled team members to act

differently. This new space of action without distractions allowed for more ideas to be shared and heard, and allowed new diffraction patterns to emerge.

7.2.3 A Way to Study Leadership Practice and its Development Empirically

7.2.3.1 The Core of Leadership Work

In this study I developed a way to study leadership practice and its development empirically in face-to-face and virtual teams. In particular, the focus was on the production of direction and the practices of producing positions and issues as well as their performative effects, which is the core of leadership work (Crevani, 2011). As none of these aspects have been studied in an agential realist study on L-a-P to date, this study offers various new insights and opportunities for leadership research. It was required to find and provide adequate methods for studying leadership practice (Raelin, 2016) due to the difficulties researchers have to study a world that is on the move (Urry, 2007).

In this study I adopted an agential realist approach to acknowledge the relationship between seemingly stable structural elements and more dynamic aspects unfolded within organisations (Simpson, 2009). Agential realism seeks to undermine the traditional boundaries between the human and the technological and thus is not centred in Cartesian dualism (Barad, 2007).

Firstly, as the focus of this study was on L-a-P, my observations focused on the everyday and mundane actions and routines of the team members. Secondly, I considered the importance of materiality in the shaping of leadership practice. As Oborn et al. (2013) suggest: “leadership enactment entails engaging with materiality” (p. 256) and Sergi (2016) argues that it is the focus on action that makes it possible to get closer to materiality in leadership. Thirdly, I focused on leadership as process.

I argue that this concept therefore was particularly well suited to overcome the inter-actional perspectives in the three concepts AI, e-leadership and L-a-P. The intra-actional perspective was helpful to study leadership practice in changing environments. As an agential realist process was adopted, leadership was understood as phenomenon.

To understand a phenomenon, such as leadership, it is important to understand the diffractions that contribute to its emergence. To understand these diffractions, it is important understand the differences that matter (the boundaries) and the material-discursive practices producing these differences (Barad, 2007). As agential cutting generates differences (Barad, 2007), this process was the focus of the analysis. In a first analytical move the process of tagging was used to identify the differences that were enacted as boundaries (Schadler, 2019) by identifying the produced positions and issues. The focus of the second move were the leadership moments that produced these differences in the form of boundaries. The third analytical move focused on how the identified differences (the produced positions and issues) and the material-discursive practices producing these (the leadership moments) developed over the course of the project. This step uncovered the diffraction patterns and led to the pattern of differences that were produced throughout the project.

The study would not have been possible in this way had I not adopted an action research approach. Raelin has recommended action research (2016) as approach to drive L-a-PD. AI is one such approach within action research (Ludema et al., 2003). This has allowed me to study the unfolding of leadership over time.

7.2.3.2 Leadership as Process and Effect

In this section I discuss how agential realism has allowed me to slow down the process of leadership and to make it possible to study. As Crevani et al. (2010, p. 81) highlighted: one possible reason for a lack of empirical analysis in processual leadership studies is an ongoing struggle with the challenge of “how to remain true to the processual ontology […], and at the same time delimit the notion of leadership to discernible practices and interactions in order to make it possible to study.” My purpose was therefore to get to a concept of leadership that allows me to study the phenomenon empirically while remaining true to a process perspective.

While there are many theoretical perspectives on L-a-P, empirical contributions are rare (Raelin, 2016; Simpson, 2016). Researchers have pointed out difficulties to find the exact focus of the empirical fieldwork, if leading is to be studied from a practice perspective (Crevani et al., 2014; Simpson, 2016). In

Chapters 2 and 3 I pointed out that leadership can be understood as moving wave of relations and repetitions; as travelling concept (Simpson et al., 2018a) and action space (Crevani, 2010). On the other hand, it can also be understood as particle; as leadership moment or turning point (Crevani et al., 2010; Larsen & Rasmussen, 2015; Simpson et al., 2018b; Wood, 2005; Wood, 2010). Thus, I argue, when adopting such a perspective of leadership as material-discursive practice it is possible to study leadership from a practice perspective while staying true to a process perspective.

My key to understanding leadership practice from an agential realist perspective has been to understand the diffractions that create the phenomenon of leadership. To understand the diffractions, it is required to understand the differences that matter and the material-discursive practices that contributed to the production of these. I conceptualised the differences that matter as the variations of positions and issues that were produced in the team meetings (Crevani, 2010).

The study has shown that the production of direction, and thus leadership work, can be influenced when the perspective of what is perceived as an issue transforms. The apparatus of appreciative inquiring allowed the workshop teams to change their perspective by, for example, focusing less on problematic situations that occurred in the past and instead by looking for exceptional events. As the findings have shown, this change in perspective led to different leadership moments and new patterns of leadership. Such a transformation from viewing issues as problems to viewing them as opportunities also influenced the production of positions. The findings showed that as issues arose, positions were reshaped and boundaries moved, which influenced the production of direction and thus leadership practice (Crevani, 2011; Crevani & Endrissat, 2016).

In addition to this, I conceptualised the material-discursive practices as processes of agential cutting that emerged in the team meetings and produced the differences through the enactment of boundaries. In a first step I analysed the temporal distribution of positions, issues and agential cuts in the four teams across all meetings to demonstrate the transformation in each team over time. I then illuminated these findings further by zooming into the different team

meetings and by untangling the entangled material-discursive elements and considering the dynamics of these elements. I then identified human and non-human actants that intra-acted and diffractively enacted new patterns. This framework allowed me to study how the agential cuts emerged over the course of the project in team meetings in the different teams. Based on this, the analysis explored the interplay of positions, issues and agential cuts. Furthermore, it identified a number of strategies each team used that contributed to the enactment of leadership in certain ways. Finally, it uncovered the characteristics of different phases of intra-acting in the teams in the different phases of the project, in which a repatterning of positions and issues took place. The focus in the analysis was to identify novelty in speech acts (Simpson et al., 2018a) to find out how the novelty changed the direction of leadership movements. Novelty was identified by focusing on the production of direction (Crevani, 2010), which is a boundary-making practice. The processes of tagging and referencing processes to the various data created sub-phenomena. To study leadership practice, a diffraction apparatus was created “in order to study the entangled effects differences make” (Barad, 2007, p. 73). The ‘entangled effects’ entail a redefinition of boundaries that separate specific entities from others. The applied method captures how the different strategies are interrelated, how they transform, and how they work together dynamically to offer new possibilities and to make new actions possible. Overall, the analysis gave an in-depth picture of the ongoing dynamics of leadership practice in the four teams and demonstrated that leadership shows up in everyday practice and within the most mundane engagements (Crevani et al., 2010, p. 77) and is enacted through material-discursive practice (Barad, 2007). In this fashion, the empirical cases suggest that once leadership is viewed from an agential realist perspective, what leadership is changes dramatically. Leadership then can be understood as diffractive practice that reworks organisational practice by producing direction. From this perspective, leadership emerges through particular entanglements of human and non-human phenomena.

7.2.4 Leadership as an Emergent Social Process

In Chapter 2 I have highlighted two main gaps in the leadership literature. Firstly, our knowledge about how leadership unfolds within day-to-day practice

is still limited. Secondly, leadership theories tend to limit themselves to human actors or processes, although non-humans are heavily involved in co-producing leadership. The emerging stream of L-a-P is beginning to address these gaps. Due to a lack of suitable research methods and difficulties to study practice and processes, empirical contributions remain rare. There are also debates about the philosophical direction and associated with this are different viewpoints on the concept of practice/practices and the role of materiality (Raelin, 2016). I therefore saw it as necessary to conceptualise leadership practice in a way that would address these gaps and expand on the concept of practice/practices.

Taking an agential realist stance in this study, I made use of the concepts of material-disursive practice, phenomenon and apparatus to reconceptualise leadership practice as emergent social process. I have used Simpson's categorisation of leadership as trans-action, which understands leadership to occur in turning points that redirect the flow of practice, and I have extended the trans-actional concept by using agential realism, including the concepts of agential cuts, phenomenon, intra-action and apparatus.

Crevani et al., (2010) explain that the process of redirecting the flow of action is the core of leadership work. In this process, boundaries are produced. It therefore can be argued that the process of agential cutting, which is a boundary-enacting practice, is also redirecting the flow of practice: the cutting produces "determinate boundaries and properties of 'entities' within phenomena" (Barad, 2007, p. 148). To be more specific, the process of making cuts is performing phenomena by diffracting different types of agencies (Barad, 2007). Out of this, I conceptualised leadership as a diffractive practice that reworks organisational practice by producing direction. Leadership can be found in diffractive events where direction, co-orientaton, and new spaces of action are created. I argue that as in the modern theory of light that diffraction patterns play a crucial role in generating, leadership can be understood as particle (a leadership moment, an action space of possibilities, an agential cut), but also as perpetually moving wave of relations and repetitions that performs the agential cutting and leads to a collapse of a superposition of possibilities into particular agential cuts. This matters in crucial ways to the leadership and AI literature, because it unsettles the notions of individuals, on which approaches are so often based. Agential realism instead offers a wave-like definition of both

subject and object as intra-actors. In leadership moments, possibilities are realised through agential cutting, which means “accounting for how practices matter” (Barad 2007, p. 90). The process of agential cutting enacts what to focus on and what to leave out in the process, and it is thus a boundary-making practice. However, this does not mean that leadership is understood solely as human process. Agential cuts are enacted by the the entangled human and non-human intra-actors within the apparatus, and not by an individual person. The practice of leadership is therefore material-discursive and enacted by the apparatus. Leadership, as diffractive practice, therefore, is entangled with the apparatus that is an ongoing, material-discursive practice itself (Barad, 2007). This is an emergent and social process, because intra-actors emerge through and as part of their entangled intra-relating.

Such a perspective decentres leadership from an individual ‘leader’ and looks for leadership in the intra-actions of human and non-human phenomena and in the patterns that are produced in this process. As the process of leadership is a continuous practice, these patterns constantly change and shift. Thus, leadership can be understood as both a continuous process of relating between human and non-human phenomena (a wave of relations) and as materialised differences, which can be seen and touched. I argue that this may support to solve some of the difficulties researchers have to study a world that is always already on the move (Urry, 2007) and to find the exact focus of the empirical fieldwork, if leading is to be studied from a practice perspective (Crevani et al., 2014; Simpson, 2016). It may therefore lead to further studies that focus on an intra-actional perspective of leadership, as it combines both worlds; it understands leadership as moving wave of relations and repetitions; as travelling concept (Simpson et al., 2018a) and action space (Crevani, 2010). On the other hand, it can also be understood as particle; as leadership moment or turning point (Wood, 2005; Wood, 2010).

7.3 Contributions and Future Directions

I believe that this study has broken new ground in the study of Leadership-as-Practice by providing an empirical analysis of the development of leadership practice in face-to-face and virtual teams. In addition to offering contributions to existing theory and methodology, this study is intended to offer guidance to practitioners faced with similar organisational challenges. I therefore hope this study inspires others to take this research approach forward in a number of directions. I outline some of the possibilities in this section.

7.3.1 A Contribution to Practice

In this study, I have developed a rich understanding of everyday leadership practice and the roles which human and non-human phenomena play in the emergence of leadership in an organisational setting. This study offers the opportunity to extend these ideas and concepts developed in this study into other organisational contexts. I will discuss this in this section

7.3.1.1 The Practice of Leadership Development

From a practitioner based point of view, this thesis offers specific insight into the practice of L-a-PD (Denyer & Turnbull James, 2016; Raelin, 2016) in face-to-face and virtual teams and also acts as a guide for how to create an apparatus of appreciative inquiring to develop leadership practice. While this study has only been carried out involving four teams within one organisation and within one industry, I am confident that the developed system (AI) can be applied across different industries and types of organisations. AI is universally useable in different organisations (Watkins et al., 2015) and leadership takes place in all kinds of organisations as well.

I argue that this is highly relevant for practitioners as it supports teams and organisations to depart from traditional approaches to leader(ship) development, in which individuals are trained in isolated environments (Raelin, 2011). I argue that such an L-a-PD programme is useful as traditional leadership models confirm a ‘leader’ in control, but, as De Paoli et al. (2017) argue and as this study has shown, the situation in virtual teams is about not

having control. However, also in face-to-face environments the notion of leadership is increasingly being decentred from individuals in favour of an understanding of leadership as practice (Raelin, 2016).

The study does not claim that an AI workshop process is the only way of achieving L-a-PD, but it has shown that AI worked in the present context to develop leadership. The suggested approach can help practitioners to find a positive core.

The study has also shown that this approach is particularly useful in teams which are caught in a dysfunctional cycle. The suggested approach can help to approach issues differently and to obtain a new understanding of roles and positions in organisations. Having gone through this process, practitioners need to set about identifying and removing the barriers that are holding the organisation or team in a certain frame of possibilities (space of action). The different phases of the workshop series were helpful in this. Some of these introduced changes were dramatic, e.g. a different hierarchical structure. Others were more subtle, as for example changes in how a customer complaint was treated. Practitioners should make sure that in the beginning of an AI process existing beliefs are disrupted and challenged, and teams and organisations need to break out of previous modes of thinking. Participants then need to establish new routines and processes. The 5D cycle is continuously running and needs to be kept alive. I argue that one key success factor of supporting such a transformative process is the support throughout the organisation and also by the management. It is likely that in such a collaborative AI programme potentially unpopular changes are requested, which may require a rethinking in the senior management team, which could, for example relate to additional investments. I found that such an enabling environment is needed for the success of such a project.

While this approach has been applied retroactively, after the teams had been established already, it is likely that the appraoch could also be applied proactively, either before teams have been formed or while teams are being formed.

While the current approach was applied to interdisciplinary project teams, it is also likely that it can be applied within departments, such as a supply chain or a manufacturing department.

The study provides a framework to identify leadership in practice by understanding produced positions and issues in the teams as well as the process in which these are produced. It is likely that the categories that have been produced in my analysis will differ in other organisations, and such a fine-grained analysis will most likely not be required for practitioners. However, the study has contributed to identifying key aspects that influence leadership practice, such as meeting rooms/spaces and places, hierarchies, technological factors. I argue that these material aspects play an important role in creating the action space within which leadership practice can unfold.

7.3.1.2 Understand Leadership Differently in Organisations

I argue that organisations should change the focus from individuals to processes. Organisations should therefore be less concerned with finding the best possible ‘leader’ and instead focus on creating enabling actions spaces as spaces for leadership practice to unfold, in which team members can collaboratively produce direction and enact leadership. The question, therefore, is how to reduce the notion of individual leadership, and encourage more collective understandings. Possible solutions could be small business units or teams in which all voices are being heard. By downsizing teams and departments it becomes possible to interact more frequently. If this is not possible face-to-face, then suitable CT may support this. It is also important to support the teams during the AI workshops. It takes extra effort to open up dialogues about key issues and to take these issues on, and also to discuss different and confronting viewpoints. Such a support could be to create an action space (Crevani et al., 2010) within which teams become the enabled to create something new.

7.3.1.3 Application into Other Organisational Contexts

This study was carried out within a specific industry and organisational setting. And although there cannot be a standardised template for a resolution of a complex issue in an organisation, this study advances an overarching

framework for how practitioners can support teams within organisations to identify new ways of addressing issues. It is proposed that practitioners faced with the need to generate transformations in teams or organisations in other contexts will similarly need to create the conditions where the best is appreciated (AI). One possibility arising from this study is the opportunity for practitioners to use the approach developed more broadly. AI cannot only be applied in leadership contexts. It can also be applied in all sorts of other contexts to inquire into what works best in any context.

Such an approach is not restricted to leadership, it could also used to develop other phenomena, such as strategising. The strength of this approach is that it can be applied to virtual teams and face-to-face teams. The specific setting of this study could also be expanded in terms of organisation size or type. Depending on the complexity of the project and the intended transformation, practitioners need to be aware of potential friction points within an organisation, when only parts of an organisation are transformed. Lastly, conversations and interactions in different environments could be observed. In the present study there was a focus on formal team meetings. Future studies could, for example, focus on different types of meetings, such as informal meetings or meetings of senior managers. And even if a context does not require such a workshop approach, as there might be less complex issues to address, much of the AI activities will be helpful to stimulate action and embed a transformation and diffraction. For example, an organisation that is introducing changes to a process will face the question of how to break out of rigidieties in their current mindset. The same 5D phases will be helpful in this case.

7.3.2 A Methodological Contribution

Only a few studies have engaged with the topic of leadership and considered the entanglement of human and non-human phenomena. Even fewer have engaged with the concept of e-leadership or leadership in virtual teams. This study attempts to break new ground in this field by applying such an approach to the study of leadership and leadership development. Within the leadership literature, there are various studies that put an increasing emphasis on the practice of leadership and that look for leadership in the daily banal routines and

actions (Raelin, 2016). While some of these studies begin to take materiality seriously by exploring materialised practices and the role of artefacts in the study of leadership, these studies oftentimes do not pay attention to the development of leadership practice over a period of time and compare leadership practice in virtual and face-to-face teams.

This thesis therefore makes a novel contribution to the study of L-a-P by including non-human phenomena as intra-actors in the production of leadership and its development in a process of L-a-PD. This thesis therefore extends the boundaries of the literature in significant ways. Within this study, I showed how the experience of the participants in organisational environments implies an intensive, entangled relationship with non-human phenomena, whether materialising as additional cameras, office spaces or machines. This approach and the finding of entanglement between leadership practice and human and non-human phenomena also has significant implications for practitioners in organisations. Practitioners should consider that non-human aspects, such as office environments, the physical distance of team members or technologies used, are intra-actors in the creation of leadership. Thoughtful consideration should therefore be given to the design of workplaces and -spaces, the provision of tools and technologies and also the relationship between humans and these non-human phenomena. One way to support the creation of generative relationships may be an AI-based L-a-PD programme. This has not been studies before from an agential realist perspective.

In other words, studies following this approach in other kinds of organisations would provide a better overview of the intra-actions that contribute to the emergence of leadership, for example, in the healthcare sector or in schools and universities. Studies in organisations of different sizes may also provide some interesting insights. Furthermore, studies in virtual teams of different sizes or nationalities may provide useful insights for the study of leadership.

In this study, I have developed a way of analysing the data that took into account both the processes of agential cutting as well as the enacted cuts within an apparatus. Karen Barad (2007) is not very specific on how to carry out a diffractive analysis, and empirical studies applying agential realism in a study of leadership practice are therefore rare. Even though the practices observed as

well as the enacted differences were unique to this specific setting and the apparatus employed, it is likely that researchers will be able to apply the same method of data analysis in different contexts. What is likely to change, however, are the material-discurisve processes and enacted differences. The focus has been on observing leadership practice, as something to be studied as it is performed. The analysis, however, has not stopped at interactions and conversations, as it became clear that there was more going on in the production of direction. Therefore, wider contextual factors and non-human intra-actors and phenomena have been included in the observations and in the data analysis. This is something rare in leadership research, which oftentimes focuses on individual leaders or interactions between leaders and followers. Although mostly limited to meetings, the empirical material produced of this thesis is an important contribution to the field since it brings forward everyday situations, the sites where leadership happens while work gets done, and by taking into account non-human intra-actors as well in the production of leadership.

Another methodological contribution lies in the experience gained through the combination of AI as an action research approach with agential realism. The development of AI to an apparatus of appreciative inquiring was only possible by applying agential realism. This study therefore provides a methodological contribution to leadership research by developing a method for L-a-PD through an AI process in virtual teams and face-to-face teams. I have departed from traditional approaches to studying leadership by using a Leadership-as-Practice approach together with an agential realist lens to work to explore leadership. This offered a rich and contextual account of the relationship between human and non-human phenomena in the generation of leadership practice. Moreover, I have used a diffractive methodology that has combined a range of perspectives and viewed through one another in order to produce useful and novel perspectives.

7.3.3 A Theoretical Contribution

In this study I developed the concept of leadership as diffractive practice (see also section 7.2.4), which has various consequences and is the key theoretical

contribution of this study. The concept includes the assumption that leadership requires more than only human involvement. This concept understands leadership as entanglement of the processes of agential cutting within the apparatus as well as the enacted differences/the agential cuts. It is therefore important to zoom out and take a look at the bigger picture. It is not the people who enact leadership. Rather, it is the material-discursive practice within the apparatus within which people participate. In complex intra-actions these produce diffraction patterns. It is my view that both of these need to be understood in order to analyse leadership. Let us take a look once more at the example of water waves being diffracted. In this visual metaphor it is the apparatus as a whole that is producing the diffraction patterns, including the objects doing the diffracting, such as rock formations in water. All of these influence how the redirecting takes place and as diffracted waves meet and intersect, new and unexpected patterns are generated, which are visible.

This implies that if we talk about leadership as a shared and distributed phenomenon, we need to understand it as being a shared accomplishment of human and non-human intra-actors. This places more relevance on contextual and non-human aspects as in many leadership studies.

This, then, is one possible explanation for why leadership in face-to-face teams and virtual teams looked different. The teams were part of different apparatuses with different human and non-human intra-actors. These all influenced the leadership processes and practices in different ways. Even though the face-to-face teams and virtual teams are part of the same organisation, they deal with different projects, use different meeting rooms, have different targets and apply different tools, just to name a few non-human factors that are also participating in the production of leadership.

A logical consequence of the understanding of leadership as material-discursive practice and enacted difference as part of the apparatus is that to carry out L-a-PD, it is also relevant to consider human and non-human factors. The transformation of the apparatus, then, will lead to a transformation of leadership practice. In this study, the apparatus was transformed by allowing the team members to participate in an AI workshop programme within which the team members developed new routines and ways to approach situations. They also

made a series of physical changes to tools, the hierarchical structure and meeting rooms, only to name a few. All of this had an impact on the apparatus and thus on the way in which leadership took place. Thus, by transforming certain aspects of the apparatus, certain transformations of leadership can take place. This can take place through material changes, but also through the development of a vision, new rules, and all sorts of other things within a workshop programme. As Barad says, the phenomenon is part of the apparatus, it actually is the apparatus. If the apparatus changes, the phenomenon changes as well.

My ambition is not to conclude that this perspective should replace other perspetives, as I believe that a multiplicity of perspectives is helpful when discussing something that is as complex as leadership. Therefore, I would like to add to the discussion by providing an additional understanding, which is different and has various consequences. However, this perspective may be helpful in understanding why there are so many different conceptualisations of leadership, which range from leadership being a trait of an individual, heroic 'leader' over leadership taking place within interactions of leaders and followers to leadership taking place within trans-actional processes of becoming. I argue that as in the modern theory of light that diffraction patterns play a crucial role in generating, leadership can be understood as particle (a leadership moment, an action space of possibilities, an agential cut), but also as perpetually moving wave of relations and repetitions that performs the agential cutting and leads to a collapse of a superposition of possibilities into particular agential cuts. Different contributions within the leadership literature refer to one particular cut of this phenomenon, to make it understandable. I argue that the concept of agential realism unsettles the notion of leadership being centred in heroic leaders or in processes between leaders and followers by helping us understand the bigger picture. Diffractive iteration instead offers a wave-like definition of both subject and object as intra-actors. However, by zooming in and by cutting the phenomenon together/apart, we can achieve a sense of stability which makes it possible to study the phenomenon.

From such a perspective, leadership becomes a truly shared phenomenon rather than an individual one. Shared not only in the sense that more individuals participate in the practice of leadership, which has been argued many times

before in the leadership research. When I mention the concept of shared, I am thinking of something more profound in the sense that we need to zoom out and understand the context within which leadership takes place as phenomenon.

Such a perspective radically decentres leadership from indivdiduals, maybe more than it normally is. From such a perspective, leadership emerges out of the intra-actions within material-discursive processes. Leadership, therefore, is not about defining a ‘leader’, but it is about the production of direction, which leads to certain unexpected diffraction patterns. Depending on which direction is generated, these patterns shift and transform. These patterns, however, are not the materialised result of human only processes. These patterns are a result of the process of agential cutting that takes place within an apparatus. This perspective emphasises the relevance of contextual factors, tools, IT equipment, and any non-human factors that are part of the apparatus within which leadership is prdocued.

In this study, therefore, in which one objective was to understand how leadership changes within face-to-face and virtual teams, it was important to consider wider contextual aspects, such as the layout of meeting rooms, tools, etc. as these were non-human factors that were part of the apparatus.

Although there have been movements towards the inclusion of material aspects in the production of leadership, few studies have really abandoned individual leaders as the object of study, and few studies have taken the role of non-human factors in the production of leadership seriously. Compared to previous theoretical understandings of leadership from a practice point of view, the result of this study is a more explicitly relational conceptualisation of leadership, not centred on individuals and their intentionality, and not solely focused on human processes. Compared to other studies performed under the label relational, my research develops the relational aspect even further by focusing on the intra-actions and adds to the idea of material-discursive practice as a useful concept to perform analysis with.

7.4 Limitations

While the study makes significant contributions to practice, methodology and theory, it also has limitations. The insight gained from this study and the findings

it has produced should be assessed in the light of its limitations. The study was conducted within a limited context, involving a limited number of participants within four teams. As an action research study, the study was very specific to the context.

There is a limitation related to the method of participant observation. While a key benefit of this approach is the ability of the researcher to become deeply familiar with a group of people, this limits the number of participants of a research study. This study was carried out with 52 participants. This limits the generalisability of the findings. However, agential realist and action research studies do not attempt to achieve generalisable findings. Highly relevant, from an agential realist perspective, is to understand if a study is ethical and, hence, whether it is valid. This validity can be identified in the exploration in real time of a fieldwork setting and a meticulous recording through various mediums of events as experienced by the researcher, who is part of the apparatus. I argue that participant observation is an appropriate method to practice ethical, accountable materialisations of phenomena. Researchers focusing on practice approaches tend to be pluralistic and study individual cases (Raelin, 2016) and typically do not generalise. This also relates to AI, which is a method of action research, which also aims to provide local knowledge, which is not necessarily generalisable (Watknis et al., 2015).

One further limitation of this study is the participation of the researcher in the team meetings. Some argue that the participation of the researcher in the process leads to concerns about reliability and about the researcher as potential source of disruption (Denyer & Turnbull James, 2016). However, I argue that, from an agential realist viewpoint, the observations are not only made by the observer, but by the entire apparatus (Barad, 1998; Lenz Taguchi, 2010, p. 69). Therefore, we can see ourselves as equal participants in an entanglement with all other organisms and matters in it. Thus, the researcher can also be understood as research instrument to be described, critiqued, and analysed, as any other apparatus would be (Coffey, 1999). From an agential realist perspective, the researcher cannot be seen as detached from the research process and an ‘objective’ truth cannot be achieved. This thesis therefore does not offer the concepts of the apparatus of appreciative inquiring or leadership as diffractive practice as a definitive truth that can be tested in other settings. That

said, further research could be done to determine if the concepts in this study have utility in other settings and how this further develops the theory.

A further limitation relates to the identified aspects of leading. One key argument of this thesis is that leadership materialises through material-discursive practice and certain performative effects. These aspects are local, negotiated and very specific to the context of this study. It is important to be aware that in other contexts and settings, these aspects can and probably will differ.

7.5 Future Directions

7.5.1 Future Studies

I believe that this study has broken new ground in its attempt to identify leadership practice and its development in face-to-face and virtual teams. This study hopefully inspires other researchers to take the findings of this study forward into various directions.

In the previous sections I have already outlined some possibilities for future research. I therefore only briefly outline these here.

Firstly, future studies could be carried out in different types of organisations, such as educational settings. This could also include different team sizes and a focus on different phenomena, such as strategising.

Secondly, future studies on leadership-as-practice could expand the techniques of visual inquiry that were applied and include an analysis of video footage. In this study, I did not obtain consent to record videos. This could, however, provide further insights into how human and non-human intra-actors are entangled in the production of leadership.

Thirdly, future studies could be carried out in different types of teams. In this study, the participants were members of project teams. Future studies could expand on this and focus on leadership in management or senior management teams or in specific departments of a business, such as the supply chain department.

7.5.2 Future Directions at W-Tech

In this section I will talk about how the teams have developed after the completion of the AI workshop series in FTF1 and VT2 and about the impact on the wider organisation. I will also explain how W-Tech has used the learnings from the AI workshop project to create a business system.

Before I began with the project at W-Tech there was some scepticism at W-Tech in the senior management team and also in my project teams. Even I was concerned about if this approach of appreciative inquiring would work, as I had never applied it before. The concept of AI was also new to W-Tech, and an AI process had never been applied at W-Tech before and none of the team members had ever heard about it. Quite naturally, concerns emerged in the organisation. We therefore broke new grounds when we applied this method in FTF1 and VT1. It also meant some significant investment by W-Tech, as the team members had to be freed up to visit the kick-off event, flights and accommodation had to be paid for, and proposed changes by the teams within the AI workshops had to be funded, such as a new layout for meeting rooms, which included the purchase of furniture, as well as improved communication technology and dedicated virtual meeting rooms at the different sites of VT1 team members. This required the commitment of the senior management team, who continuously supported me throughout the entire project.

Throughout the project, within FTF1 and VT1, transformations of leadership practice emerged. I have highlighted these in earlier chapters. Shortly after the completion of the AI workshop series in VT1 and FTF1, some of the physical changes that were made by VT1 and FTF1 were also adopted by VT2 and FTF2. One aspect that VT2 adopted was the creation of dedicated virtual meeting rooms with improved communication technology that allowed for a better visual and audible experience, which led to improved telepresence. Shortly after the completion of the project, FTF2 team members started to use the meeting rooms FTF1 created throughout the AI workshop series. The other meeting rooms at the German site were changed accordingly, which included the implementation of a new layout including a whiteboard and stationary. FTF1 and VT1 also implemented changes regarding approval processes, such as budgets and purchase orders, which were also adopted by FTF2 and VT2. This

has also led to improved results in FTF2 and VT2, however, not to the same degree as VT1 and FTF1. Several months after the completion of the project, there was still a noticeable difference between FTF1 and FTF2, and between VT1 and VT2. Both VT1 and FTF1 continued with monthly AI sessions after the workshops and kept the 5D cycle alive. This was not the case in VT2 and FTF2 and they never had the chance to participate in the collaborative learning process that FTF1 and VT1 team members participated in. One year after the workshop series had been completed in VT1 and FTF1 we started to carry out another AI workshop series in VT2 and FTF2 to allow them to develop their own best way of doing leadership. In addition, an AI programme was rolled out in the wider organisation and so-called “AI tool champions” have been trained within the organisation who are now able to facilitate these workshops across different sites and in different teams and departments. W-Tech has also started to run dedicated AI “just do it” events, which normally take 1-2 days, depending on the complexity of the issue. These can also run up to a week, if more complex problems have to be solved, oftentimes with an interdisciplinary team. It has now become a business system that has found its way into different aspects and departments of W-Tech. There is now also a plan for a dedicated continuous improvement manager who will coordinate and develop these improvements across the organisation. Currently this is sitting with the senior management team. This shows that the ripple effects from the AI workshops still influence W-Tech to this day.

7.6 Final Words and Reflections

This research project has made a lasting impression within the host company W-Tech, the participating team members and myself. In this last section I reflect on and discuss some key points around the research project.

In my opinion the research project has been very successful. In the following paragraphs I reflect on the reasons for this and what I could have done differently. These reflections involve my own journey, my experiences and how my thinking about leadership and my practice as manager have evolved from the beginning of the project until today. I also reflect on the use of AI within the workshops and how I think about the interventions now.

I started this project as I was interested to learn more about leadership and also because there was a problem to be solved at my workplace. Many years back, when I started to think about this research project I had just completed my Master`s degree. During my studies I was working as project manager and I realised that what I learned during my studies could only give me a really broad overview of the topic. I experienced that theory and practice did not always align and that much of what I learnt was very generalised and not necessarily applicable to the particular situations at the workplace. Traditional leadership models were of limited use when we had to improvise when something did not go according to plan. I used to see leadership as something that is owned by a 'leader' of a team. I envisioned such a person as someone who generally knows what to do when the team gets stuck and who inspires and motivates. This is one of the things I was taught in school and during my studies. At one of my previous workplaces we even had a leadership training session, in which groups were tasked to identify what leadership is. Out of this a few traits and behavioral characteristics emerged, and these were characterised as leadership. We were told that those characteristics are what was expected from us as 'leaders'. In practice, however, I could not observe any effects of this training session. It did not feel meaningful. I always had the feeling that there was a misalignment between theory and practice.

My wish to learn more about leadership became even stronger when I became aware of the difficulties the virtual teams experienced to complete projects on

time. It felt to me as if I did not have the tools to make transformative change happen to support these teams. One key element of the DBA programme was to carry out a pilot study that I refer to in Chapter 4. During the pilot study I became much more accustomed to the idea that leadership was enacted in practice and interactions, and I started to see it as being decoupled from individuals. My engagement with the theory about process approaches (e.g. Raelin, 2016; Simpson, 2016) about leadership certainly laid a good foundation and allowed me to develop my thinking. These learnings opened a whole new world to me. Over time I saw my own thinking and behaving transform more and more. It helped that at the time I carried out observations at my workplace to identify leadership interactions in team meetings. However, the pilot study was only the first step in getting used to the idea of leadership being decoupled from individuals. It took years to fully understand leadership like this. I had to be very conscious to not fall back into my old thinking whilst writing this thesis and to remain consistent whilst following an agential realist approach. After nine years of intense study and practice, my view of leadership has shifted. I now see leadership as a potential that emerges through practice. This potential is not unlimited, though. As the study has shown the environment, including non-human phenomena, can play a crucial role in determining what is possible and what is not possible. Human and non-human phenomena are constantly intra-acting. This is really one of the key points I learned during the main study. The main study allowed me to understand the relevance context and the environment in leadership practice. The consideration of non-human phenomena and the concept of apparatus in the study helped me understand how our surroundings affect what we do together. In turn, we affect the environment. Examples of these are office spaces, the technology used, hierarchical structures, standard operating procedures, values, and even past events and narratives that are told.

Throughout the nine years of carrying out this project part-time, my own practice as a manager has transformed as well. I strongly believe that most of this learning originated from me carrying out this research project and all the challenges I was presented with. One aspect of my practice that changed is the way in which I try to control what is happening in the teams and departments I am responsible for. As a manager, I always thought I was in control or at least

had to try to be in control of what happened. This naturally created a lot of stress and if things failed, which inevitably happens in organisations due to the unpredictable nature of interactions and processes, I often blamed myself. This oftentimes prevented me to improvise and find suitable solutions for issues. Through my engagement with agential realism, its application and my observations in this study I realized that while I can influence and while I am responsible, the degree of control I have as a manager is very limited. Instead of trying to intervene and control as a manager, I now focus much more on enabling the team to function well together. Together with the team members, I focus on creating an enabling space for them to function so that I can step out of the way. This allows me to take a step back, to think, to observe, instead of being so involved in the day to day micro managing. I have found a good way to support the teams that way. I have also become much more reflective about my own practice and how the team members work together. We now hold regular off-agenda meetings to discuss how the team is working together. In the project I realised how important it is for a team to discuss collaboration regularly. This is one of the activities that took place in the workshops. I have learned that these types of meetings can be very useful and help the team members to get a better understanding of how they influence each other and which impact they have. I see my work now much more as someone who needs to support, think and work with the team to bring them back on track if they do not function well. This is also the feedback I receive from my team members if I ask them what they need from me. Also in this sense the off-agenda meetings help. I am now much more considering the bigger picture and try to focus on creating enabling environments. The concept of intra-action has allowed me to develop in this way, as it widens the scope of who participates in the world´s becoming. In terms of the ways in which my thinking and practice have changed, I am extremely grateful for the entire process I went through. This process taught me to think in much more critical ways. I am extremely grateful for all the pushing back of my team members, which allowed me to take a step back, to rethink the process and to find solutions with the team. There was of course conflict, but it was mostly healthy conflict that allowed us to improvise and be creative. And lastly I am extremely thankful for how I grew as a manager. I now understand

my own role much better and what I can actually influence and what my team needs from me.

Another aspect I would like to focus on is the AI process and the associated interventions. It was a huge task to carry out these workshops in two teams. The key objective here was to create a space of exploration in which the teams could develop their own ways of leadership. I believe I underestimated the task of facilitating these workshops. I soon realized what kind of mammoth task it was to try to understand and transform leadership in these project teams. There were so many things to learn, to understand and to consider. The workshop sessions were much more demanding than expected and I remember that I became quite anxious very early in the workshop process. I was planning to generate transformative change with the teams, but I had no idea how it would turn out. I was starting to get doubts about the project already quite early as I had never done something like this before, even though I carried out a lot of preparation and careful planning. What would happen if it didn`t work? What would happen if I didn`t find useful data? Not only the success of this research project depended on the success of the workshops, but whilst doing the workshops the teams could not work on their projects, so there was a risk that all of this was only a waste of time. However, I had the support of the company and the senior management team, which was reassuring and very important. I also made it clear to myself and the senior management team that there are certain things we can clearly not control, and that unpredictable situations can occur that might create a risk for the project. We can influence how the cut is enacted, but we cannot fully control it. As I worked as project manager at the time, I was familiar with how to plan projects and I was also familiar that there is always a certain element of uncertainty. I communicated frequently with the senior management team and presented status reports, which were challenging as well. However, these allowed me to question assumptions and deal with risks in advance. However, of course there were certain things that did not go as planned, and retrospectively I understand why. A lot of things just do not go according to plan due to the unpredictable nature of intra-actions and processes, no matter how good the plan is. This is also related to the concept of wayfinding (Chia & Holt, 2009) that I relate to in the thesis. Quite early in the project, for example, there was some conflict, pushing back and disagreement

in the teams, which related to the concept of AI. I discussed these concerns in Chapter 4. I expected a certain degree of resistance. However, there were times when I just needed to take a step back and reflect on developments. Eventually this 'pushing back' and the challenges led to a better process, as the team members had genuine concerns, which we addressed together. Of course, also the team members had no idea how it would turn out. It was a lot of work to convince the team members of the project goals and to get them motivated to participate. Reflecting on this, I think I could have had some more conversations with individual team members before the workshops, to understand their concerns better already before we went into the workshops. These individual conversations might have dealt with some of the uncertainty in advance. My initial plan was to work in a systematic way that I could describe and document. In the process, however, I realised that this was unproductive and productive at the same time, because when I attempted to follow pre-defined steps, I recognised that I was heading towards new understandings. However, each time I thought I had achieved something, I experienced slippage.

As already outlined in Chapter 3 there is a lot of criticism around the idealistic idea behind the AI process and a focus on the positive. It might seem that I have naively adopted an AI approach in this study, with an optimistic view to support the teams and to help them out of their dysfunctional state. However, my view is that it made sense to carry out an AI approach given the dysfunctional situation in some of the teams. Despite the flaws in the AI approach I believe that with the changes to the approach I made and the focus on what is generative instead of what is positive it was a useful path to follow. This, of course, does not mean that it is the only possible approach to develop leadership in teams in similar contexts. Throughout the project I realised that adopting a simple AI approach bears the risk of undermining potentially negative thoughts and issues that we need to deal with. There is no point in undermining or hiding them if the objective is to support the teams to deal with their issues from an appreciative standpoint. This is a very relevant point and this is exactly the criticism that is put forward by many critics of AI. I can now also see how such criticism certainly has a case. I therefore had to improvise

and in the teams we therefore took care to also support and encourage the focus on negative and unpleasant views and thoughts.

The data suggests that throughout the project in the workshop teams the problematising turning points decreased and the appreciating turning points increased. This could indicate that the team members were not 'allowed' to problematise issues any longer due to the focus on appreciation. However, the opposite is the case. I made the observation that the team members indeed communicated about issues, but these were, as the project progressed, increasingly addressed from an appreciative point of view. The team members tried to find solutions instead of getting into a dysfunctional spiral out of which they could not escape any longer, as it had been the case before the workshop process. Also, conflict was still taking place. However, I observed more and more healthy conflict. We can see this in an increase in challenging turning points in the teams as the project went along. Those challenging turning points were exactly representing the conflict and discussions team members had when they discussed different points of view. It was overall a different perspective from which issues were addressed. The focus was more on what works, and not on blaming others and getting frustrated. Indeed, issues were and are still discussed, maybe more honestly and passionately than ever before, which is indicated by the use of challenging turning points. It is also important to point out that problematising still took and is taking place, also after the AI workshops were complete. However, those problematising statements and turning points did not have the same detrimental effect on the teams any longer. Another interesting point to make is that it was only the AI workshops that actually encouraged the face-to-face team members to discuss problems. Before the AI workshops, some problems were not even discussed. They were oftentimes deemphasized. It was the AI process that enabled the team to uncover them and bring them to the surface. This is extremely interesting given that one point of criticism is that AI suppresses negative thoughts and problems. I have observed the opposite in FTF1 during the AI workshop phase. We can also see in the data that the focus has shifted away from a formal and hierarchical structure to something that is more flexible in the teams. This may suggest to the reader that hierarchy is to be considered 'negative' and that it may have a negative impact on collaboration. I would not agree with this. We have seen in

this project that the teams developed something that worked for them. They have developed new practices and a new team structure. There is still a hierarchical structure, but a more flexible one that works well for the teams and assigns more responsibilities to the team members. In other teams or organisations something different may work better. I believe that it is therefore important that teams go through such a workshop process and that they have a certain degree of freedom to develop new ways of working together.

In the end, as I argued in this study, it is all about the shifting of boundaries. What is understood and materialised as positive and negative is also a process of intra-action. If this understanding can change, everything changes. The way we approached AI was from a perspective of focusing on what works. I see AI as a site or tool or process to develop something and to inquire into something collectively. The focus during the AI was to create an enabling environment in which diversion could emerge. The objective was to maximise collaboration and to enhance relationships. It was about maximising the space for creating. It allowed the team members to think differently about the world, to pay attention to what is going on around us and to become reflexive about the results in acting differently. I would therefore rather understand the appreciation aspect of AI as what is meaningful and generative. “Generativity is the ability to challenge the status quo in organizational and social life, to create a sense of possibility, and to thereby open up new repertoires for thought and action” (Zandee & Cooperrider, 2011, p. 4). Bushe (2013) suggests that generativity is a catalyst for change, and that AI transforms people´s thinking so that new options for decision-making or taking actions become possible.

Such a collaborative process was required as, as explained before, I realised how little control I had. It was therefore only possible to implement this transformation together. Over time, small changes amplified into great differences. The focus was on generativity, not positivity. By doing this, hidden and unexpected potentials were uncovered by addressing the issues from an appreciative standpoint and by accepting responsibility. This uncovered difference and novelty and the exploration of difference allowed creativity to emerge. AI was also about enabling people to be capable of offering opposing opinions and to help them address concerns successfully. AI can therefore be

understood as apparatus that creates differences and creates the space for different ways of leadership to occur.

Overall, the study has shown that AI is capable of engaging participants on a pathway of re-imagining *what could be* to facilitate the creation of a shared vision (Watkins et al., 2015) of leadership. The study does not claim that an AI workshop process is the only way of achieving L-a-PD, but it has shown that AI worked in the present context to develop leadership. I learned there is no best way, but we found a way that works for the groups in this context. As these AI processes take place in the organisation, the specific context will influence the development of leadership practice, which may lead to a more suitable, or relevant, way of doing leadership. Such AI workshops will also likely be different in each organisation and team. They require constant improvisation as the team members, while they experience the same thing together, respond differently and individually. This study has also demonstrated the suitability of the complex concept of agential realism to study leadership practice. Agential realism has provided the means to understand leadership and AI differently.

I hope that this work helps L-a-P researchers to carry out empirical studies as they can use the methodology developed. Further, I hope that this study helps practitioners to move away from a leader-focused understanding of leadership towards a more decentralised and shared concept in organisations. Lastly, I hope that this thesis inspires leadership researchers to use agential realism in future studies to overcome the humanist focus that is still present in the leadership literature, and that the focus of studies will be expanded to virtual teams, as only very few L-a-P studies focus on virtual teams.

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Appendix A: DBA Project Survey

DBA Project Survey

by

Benedikt Maria Burek

Your completion of this survey is greatly appreciated.

All information will be treated in strict confidence.

- University of Strathclyde, Strathclyde Business School -

Introduction

Thank you very much for taking time to participate in this survey that is part of my DBA research project. Throughout the research project, the same survey will be conducted before the appreciative inquiry workshop process, and again after the last workshop. You have already received a detailed briefing about the project and this survey and you have been given a separate participant information sheet.

This survey comprises a number of questions about your daily work in your project team. Please take your time over each question. Think very carefully about each question, and then respond as follows on the scale provided. The scale varies for most questions, and this depends on the type of question.

Please indicate your opinion after each question by putting an 'X' in the box hat best indicates the extent to which you agree or disagree. There are also two open-ended questions. Thank you very much for your help.

For example:

Question 1

How would you rate the regular team meetings held in your team for improving team performance?

1	***2***	***3***	***4***	***5***	***6***	***7***
Very useless	*Useless*	*Rather useless*	*Do not know*	*Rather useful*	*Useful*	*Very useful*
				X		

Survey Questions

Name: _____

Date: _____

Question 1

How would you rate the regular team meetings held in your team for improving team performance?

1	2	3	4	5	6	7
Very useless	Useless	Rather useless	Do not know	Rather useful	Useful	Very useful

Question 2

What constitutes a useful team meeting for you?

_____

_____

_____

_____

_____

_____

_____

_____

_____

Question 3

How would you describe the dominant way of leadership in your team?

1	2	3	4	5	6	7
Strictly hierarchical	Hierarchical	Partially hierarchical	Do not know	Partially cooperative	Cooperative	Entirely cooperative

Question 4

What constitutes successful leadership for you?

_____

_____

_____

_____

_____

_____

_____

_____

_____

Question 5

How frequently are positions and roles changed in your team?

1	2	3	4	5
Several times a day	Several times a week	Several times a month	Several times a year	Never

Question 6

How important are formally assigned roles and clearly defined responsibilities in your team?

1	2	3	4	5	6	7
Very important	Important	Rather important	Do not know	Rather unimportant	Unimportant	Very unimportant

Question 7

To which degree is your team manager responsible for improving team performance?

1	2	3	4	5	6	7
Very high	High	Rather high	Do not know	Rather low	Low	Very low

Question 8

To which degree are you responsible for improving team performance?

1	2	3	4	5	6	7
Very low	Low	Rather low	Do not know	Rather high	High	Very high

Question 9

In which way are unforeseen events, which influence the team´s progress, handled in your team?

1	2	3	4	5	6	7
Highly problem focused	Problem focused	Partially problem focused	Do not know	Partially opportunity focused	Opportunity focused	Highly opportunity focused

Question 10

How high would you rate the ability of your team to successfully react to unforeseen issues anjd events?

1	2	3	4	5	6	7
Very low	Low	Rather low	Do not know	Rather high	High	Very high

Question 11

How often does it occur that an important task cannot be fulfilled because a decision has not been made?

1	2	3	4	5
Several times a day	Several times a week	Several times a month	Several times a year	Never

Question 12

How often are assigned tasks, defined project goals and established processes questioned or possibly revised?

1	2	3	4	5
Several times a day	Several times a week	Several times a month	Several times a year	Never

Question 13

To what extent do you feel you can take action and thus influence team performance?

1	2	3	4	5	6	7
Very low	Low	Rather low	Do not know	Rather high	High	Very high

Question 14

To what extent can other team members take action and thus influence team performance?

1	2	3	4	5	6	7
Very low	Low	Rather low	Do not know	Rather high	High	Very high

Question 15

How effective is the team when it has to make a decision that has not been made before?

1	2	3	4	5	6	7
Very ineffective	Ineffective	Rather ineffective	Do not know	Rather effective	Effective	Very effective

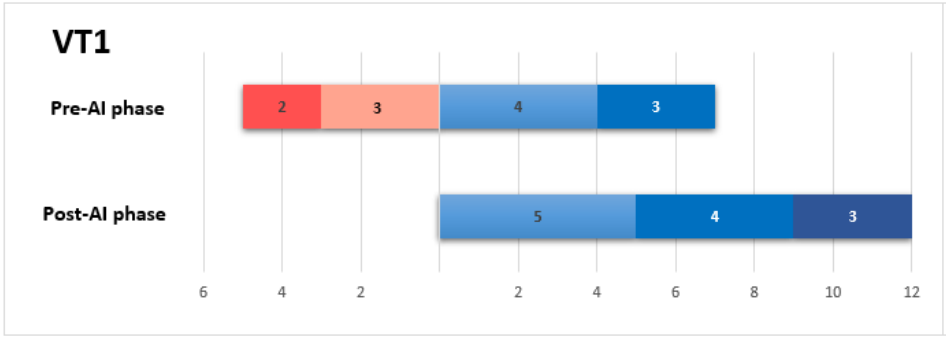
Thank you very much for your participation. Please hand the survey back in person (face-to-face team members) or alternatively send a scanned version by e-mail (virtual team members).

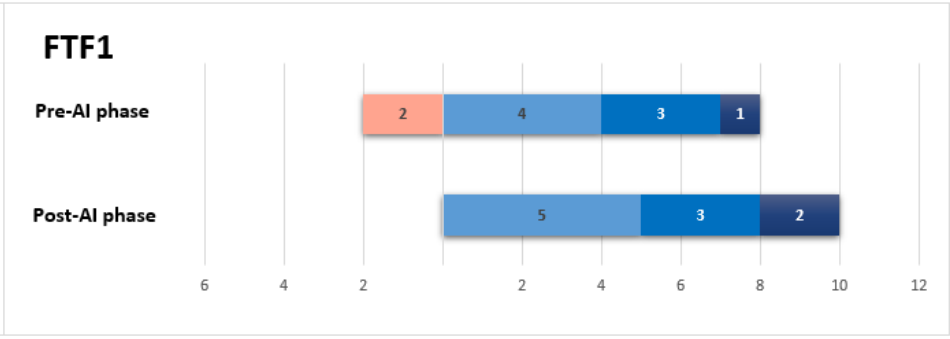
Appendix B: DBA Project Survey Results

DBA Project Survey Results

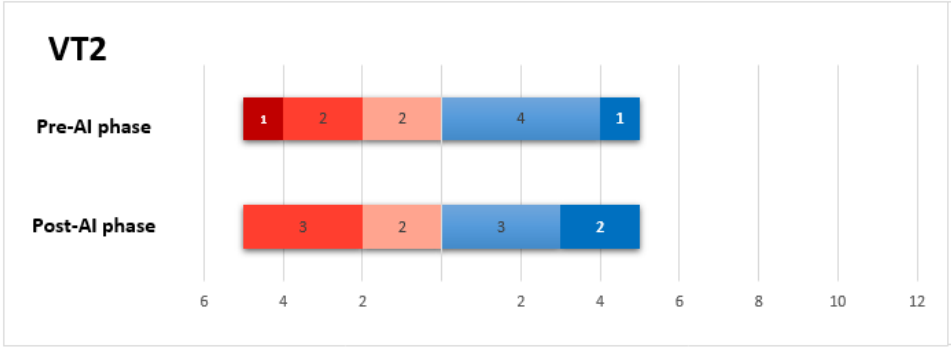
Question 1: How would you rate the regular team meetings held in your team for improving team performance?

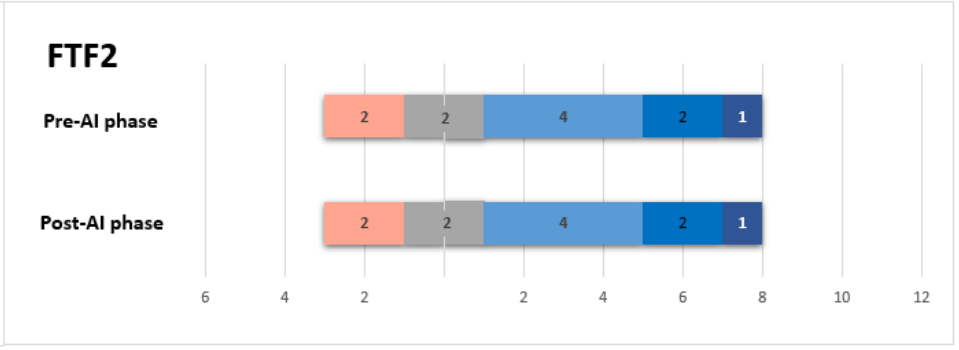
WORKSHOP TEAMS

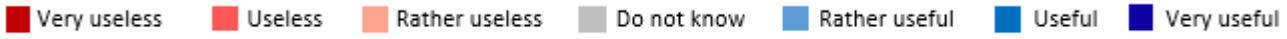




NON-WORKSHOP TEAMS







Question 2

What constitutes a useful team meeting for you?

WORKSHOP TEAMS	
VT1 - Pre-AI Survey	
Team member	**Reply to open-ended question**
Thomas	It is the feeling of having something accomplished that makes it useful.
Jonas	A meeting is useful if we can develop solutions to problems we face, and we need clear instructions.
Alexander	It would be useful if some members of the team were told clearly what to do, and to prioritise the work.
Anna	I find a team meeting useful if at least we find the time to talk about the problems and we can communicate properly.
Larissa	Team meetings are useful if we can focus and work together.
Markus	I´d find team meetings much more useful if we could find a way to help each other more.
Lothar	We often get stuck, which is not very helpful. We need to find a way forward, this would be helpful.
Florian	Team meetings can only be useful when everyone is prepared. Preparations can only be made when an agenda is distributed beforehand. Sometimes this is the case, and sometimes not. I think this can be improved.
Christina	I find team meetings useful if we can decide who is going to work on what. Often there are only discussions but no decision.
Chrissa	There are often so many conflicting opinions, which is not useful. The best meetings are when we can decide how to move on.
Nathalie	We don´t have many useful team meetings. A team meeting is only useful if we work together as a team.
Gordon	Most team meetings are a waste of time. They are often frustrating, as there are no solutions.

VT1 - Post-AI Survey	
Team member	**Reply to open-ended question**
Thomas	It is great to talk to the others we do not see so often. When we now focus on a certain problem, we oftentimes find good solutions or at least we can make a first step.
Jonas	Our meetings are much more useful now. We now communicate better, we help each other and everybody contributes.
Alexander	I cannot really say what useful means, but I think a team meeting can only be successful if we develop solutions to the problems we face.
Anna	Our team meetings are useful. After the meetings I always have the feeling that we have accomplished something. However, they do not take place frequently enough. There are so many things we need to discuss, and once week is not enough.
Larissa	Team meetings are now really useful. There is a clear agenda and everybody knows what to do. This is very helpful.
Markus	I think our team meetings are very useful, because these are the only events when the entire team comes together. Everyone can share new insights, chances, and ideas.
Lothar	I now thoroughly enjoy the team meetings during which we use the cameras on the shop-floor. We can all see what is going on!
Florian	Our meetings are well-organised, I think they work well. I think they are also quite productive and efficient, so they are rather useful.
Christina	Team meetings have become much more useful, the new meeting software and meeting rooms really make a difference and improve communication!
Chrissa	While we still discuss a lot, we challenge each other and value and appreciate much more.
Nathalie	I like our team meetings, they work well. However, they could take place more frequently, because oftentimes I cannot go on with a certain task due to unforeseen problems.
Gordon	There are now less problems. We really look for opportunities in meetings now, and it is far less frustrating. Actually I really enjoy them now!

FTF1 - Pre-AI Survey	
Team member	**Reply to open-ended question**
Carl	A team meeting is useful, if we discuss problems and if we find adequate solutions.
Joe	I think that a meeting is particularly useful if everybody has a chance to contribute to the team meeting. There are always issues that people need to discuss, and a team meeting offers the right environment.
Tim	Team meetings should be brief and efficient. We oftentimes discuss topics in the team meetings, which only affect 2 or 3 people. The other team members listen, get bored and waste their time. This makes team meetings rather useless.
Robert	We should only carry out team meetings if they are really necessary. Sometimes I think we just hold meetings because another week has passed. However, this can make meetings unproductive.
Anke	A meeting needs to serve a certain purpose to be useful. Sometimes I do not see the purpose of a certain meeting, and therefore consider meetings sometimes to be rather useless
Lisa	In team meetings, we should not waste our time. They often take too long. I think useful team meetings are rather short, and we should discuss topics that affect everybody. We should avoid to discuss issues in general meetings that are very special and which only affect 1 or 2 people.
Marcel	We need to deal with problems. Sometimes we only discuss them but cannot find solutions and just move to the next topic.
Benjamin	In useful team meetings people are focused, but often people use their phones and laptops and that distracts others.
Roman	A team meeting can only be useful if there is a written protocol and if the valuable ideas that were generated are documented somewhere. Unfortunately, there are often no protocols, but I strongly believe we need them.
Dennis	I think meetings should be quite brief. We see each other several times a day, and it might be enough to hold meetings only every two weeks. It is much more productive to deal with the small everyday problems immediately and not wait until our next meeting.

FTF1 - Post-AI Survey	
Team member	**Reply to open-ended question**
Carl	The most useful team meetings take place when we really deal with our problems. There are many problems we ignored in the past, and now they are on the agenda.
Joe	Meetings have become much more useful with the new meeting room rules that we created together. We can now be much more focused.
Tim	I think our meetings are useful, because if I prepare my questions and issues well, we often find a way to deal with them. This helps me with my work and probably leads to an improvement of the team performance.
Robert	I enjoy when we can discuss and agree on creative solutions for some of the problems that have been there for a long time.
Anke	Team meetings are useful if we have have the resources to make decisions and implement improvements. This has definitely improved.
Lisa	Short and focused meetings, in which we address the problems that we face everyday. I love the fact that we now value and appreciate what works well. This makes a difference!
Marcel	In useful team meetings we go to the place where the action happens, such as the shop-floor, and we include others in our conversations.
Benjamin	After a useful meeting, I always have the impression that we have accomplished something. This gives a lot of motivation. I guess a team meeting can be considered useful if we really move things and if we find solutions to problems.
Roman	I like the team meetings that we carry out in production, because when we all stand in production instead of sitting in a quiet office room, the meeting is more energetic and we find better solutions.
Dennis	More dynamic team meetings are useful, such as the ones we now carry out on the shop-floor or in the new meeting rooms.

NON-WORKSHOP TEAMS

VT2 - Pre-AI Survey

Team member	Reply to open-ended question
Laura	Useful is a meeting when we really move something. We, however, often waste our time with rather boring standard status updates, which takes away a lot of the dynamic that would be necessary for a really useful meeting.
John	For me, a useful meeting is short, brief, has a clear agenda and is clearly focused. I often miss this clear focus. Skype further complicates communication and if a clear focus is missing, communication becomes really difficult.
Ulrich	I like the fact that the meetings take place regulary, so I can really prepare for the meetings. However, I would find it helpful if the role of the chair would rotate, this would make the meetings more dynamic.
Steven	The meetings are often not useful as we have to sort out the problem of other departments.
Luke	They are useful because we have a chance to develop solutions together. Unfortunately, they sometimes do not take place because the team manager is absent.
Mike	Our team needs the meetings because we have no alternative way to discuss problems in detail together with the entire team. The regular team meetings should take place more regularly and more frequently, however.
Allen	Team meetings are useful and necessary because it is the only way we can really get updated on current topics and get the chance to talk to each other.
Marten	The more people participate, the more useful the meetings are. From time to time, not everybody participates with the same engagement unfortunately.
Julia	I think the meetings are rather useful, because without them we would really face difficulties to solve problems. However, they should take place more often and should have a clearer focus. An agenda might help.
Barney	The meetings are rather useful, but I think sometimes we try to stick to a standard agenda, whereas we should rather concentrate on what we really need to go on with work.

VT2 - Post-AI Survey	
Team member	**Reply to open-ended question**
Laura	A useful team meeting is if we accomplish something as team. This takes place, but we often also waste time, unfortunately.
John	I love short and brief team meetings with a clear agenda without wasting time. We still have issues with communication and oftentimes, not everyone participates in the meetings.
Ulrich	If we get enough notice that is helpful. Sometimes there is not enough time to prepare for meetings, and then I can´t participate that well and the meetings are less useful.
Steven	Still many problems with other departments and local priorities at different sites create problems.
Luke	They are useful when we can agree on a way forward and make decisions. Sometimes, we have to wait for other people to approve the decisions, which is a waste of time.
Mike	Nothing is changing, meetings are sometimes frustrating. I just like to get on with my work.
Allen	If we can communicate with everyone and agree on how to proceed and develop ideas together.
Marten	If everyone participates, that´s great, and if there is a sense of urgency that forces us to make a decision.
Julia	Meetings that have a clear focus and agenda are great. Also if there is a real problem we have to deal with that is on the agenda of the management team.
Barney	We often have to make decisions but can´t, because we are held back by processes and procedures. If we can make decisions, that´s great.

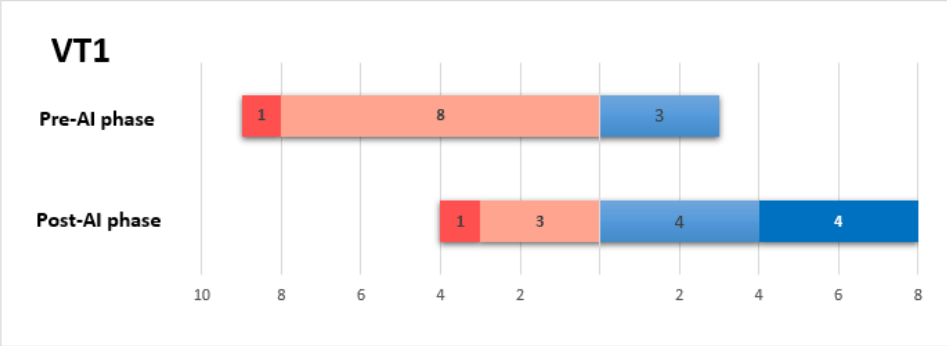
FTF2 - Pre-AI Survey	
Team member	**Reply to open-ended question**
Tom	Team meetings have to be brief, efficient, and well-repared. Decisions need to be made and measures we agreed to implement need to be followed-up.
Peter	I think the most useful team meetings take place when some people are absent. It is just more efficient if not everybody participates.
Charlie	I often have the feeling that we don´t really address the main issues. There are many problems that can be solved, but people often just want to get on with their day and have an easy life.
Robert	I find our meetings useful. Everyone gets an update and we agree on actions.
Anne	A meeting is useful when we find an agreement concerning some difficult topics. I think it makes sense to discuss topics not in too great detail. At some point we should just stop and move on to the next one.
Bob	The most useful meetings are those in which we define certain measures together with responsibilities.
Frank	We often just discuss problems instead of finding real solutions. I like the meetings when we are really pushed to dive deep into a problem.
Roland	The meetings are often useful, because oftentimes not everybody participates. I think the more colleagues participate, the less useful the meetings become. This just has to do with the fact that then there is less time to discuss important topics in detail.
Herbert	Our team meetings are okay. We know each other well and often discuss the issues that create real problems.
Joe	In useful team meetings we find solutions to problems, instead of just discussing them briefly.
George	I think we do a good job and our meetings are fairly useful. We often hit our targets and are a good team.

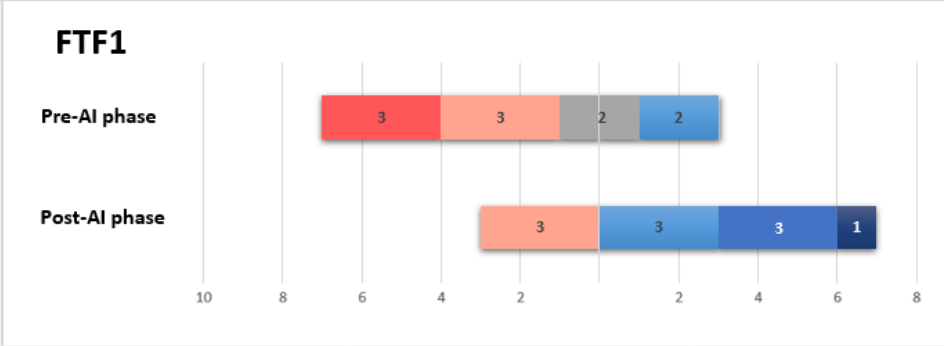
FTF2 - Post-AI Survey	
Team member	**Reply to open-ended question**
Tom	The best meetings were those in which the meeting was facilitated by a team member.
Peter	Too often we waste time, because we discuss topics that are not critical to discuss or very important. We often don´t get to the really important topics.
Charlie	I think we could have better team meetings if we get more resources and time to deal with the real issues.
Robert	Team meetings are okay, we discuss what we need to discuss and then get on with it.
Anne	We still don´t address the main issues often enough. We need to look into this.
Bob	In useful team meetings we agree on actions and people have to be committed to take action.
Frank	Meetings are often just routine meetings. I think we work together well but I also think we could be better by having better focus.
Roland	Meetings are useful to me when I feel a sense of progress. This motivates me and I realise that things are moving in the right direction.
Herbert	We should sometimes be more committed and follow up on actions, but overall our team meetings are useful, as we communicate really well.
Joe	I find team meetings useful in which we discuss our progress. I like to know how we perform and we often get updates in meetings.
George	We work well together as a team and that allows us to have useful team meetings, as we know what we do.

Question 3

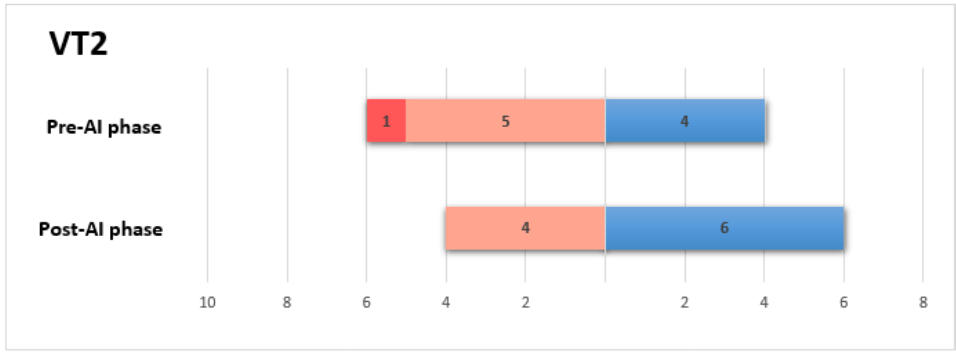
How would you describe the dominant way of leadership in your team?

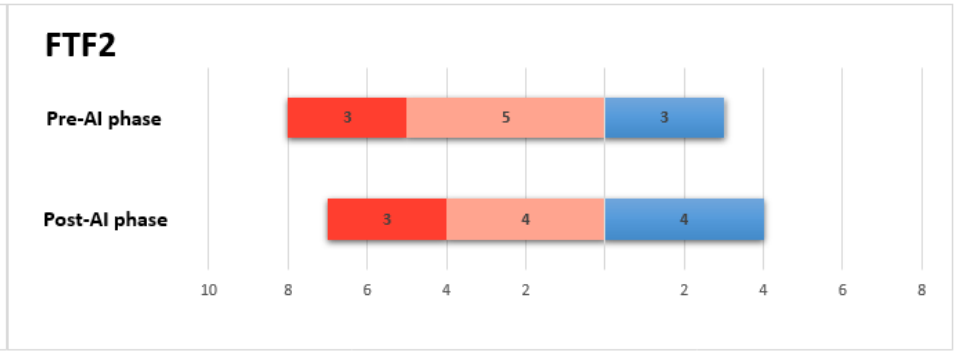
WORKSHOP TEAMS

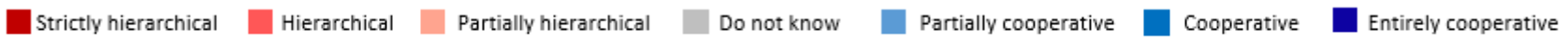




NON-WORKSHOP TEAMS







Question 4

What constitutes successful leadership for you?

WORKSHOP TEAMS	
VT1 - Pre-AI Survey	
Team member	**Reply to open-ended question**
Thomas	A leader is responsible for a team. A successful leader inspires a team.
Jonas	Successful leadership means guiding others to achieve the same goal.
Alexander	Successful leaders need willpower to achieve things.
Anna	A leader needs followers and has to communicate goals, inspire the team and push and motivate.
Larissa	There is no perfect way to doing leadership, because leadership always depends on the situation.
Markus	A leader is responsible for defining a strategy others can follow.
Lothar	Leaders need to be able to make good decisions and communicate well.
Florian	For me, leadership implies to solve problems, to motivate people, to monitor tasks, and to answer questions.
Christina	Successful leaders need to be able to delegate, to motivate others and to create a motivational environment.
Chrissa	Leadership is difficult because a leader needs to deal with many problems. In addition, the leader bears the responsibility for a certain task or team.
Nathalie	For me, the presence of the leader is important, especially when decisions need to be made.
Gordon	A successful leader pushes a team to achieve something and is inspiring.

VT1 - Post-AI Survey	
Team member	**Reply to open-ended question**
Thomas	Successful leadership means that we work together succesfully on our common goals.
Jonas	Leadership is successful if we can work together and move on.
Alexander	Successful leadership takes place when we don´t know how to move on, and then there is one key idea that we can build on.
Anna	One element of leadership is to change things. It is all about working towards a common purpose!
Larissa	Leadership is successful when we develop a common purpose and find creative solutions.
Markus	If we all take responsibility and take action. It is about the sharing of responsibilities.
Lothar	If a team can also work without a manager or leader. If good ideas come up in conversations.
Florian	Good leadership can only happen when we communciate and determine how to carry on.
Christina	If decisions can be made and no time is wasted. We can only achieve this together.
Chrissa	Leadership is successful if we disrupt routines and processes and do what is needed to carry on.
Nathalie	If we can make something meaningful happen, something that helps us to achieve our goals.
Gordon	To create something new together.

FTF1 - Pre-AI Survey	
Team member	**Reply to open-ended question**
Carl	A successful leader can get the best out of the team.
Joe	To me, a successful leader is inspiring and leads by example. To do this, the leader must be present.
Tim	There is no one-size fits all approach to leadership. But I think leadership is about seeing a problem and providing a solution.
Robert	Leadership means that you are in touch with your people and the team. The more, the better.
Anke	A leader helps the team to achieve its goals. Should there occur a problem, I hope that the team manager can solve it or at least help me to solve it.
Lisa	A leader needs to serve the team so that it can achieve good results.
Marcel	Successful leadership occurs when others can be influenced an motivated to work together to achieve a common purpose/goal.
Benjamin	A good leader needs to have the competence, technical understanding and experience to be able to answer questions.
Roman	Leadership means that one uses the strengths of the team to accomplish a certain mission.
Dennis	A team cannot work without leadership. I think leadership needs to provide the vision and motivation to a team so the people can work together toward the same goal.

FTF1 - Post-AI Survey	
Team member	**Reply to open-ended question**
Carl	Successful leadership takes place if everybody plays a role and contributes to working on a common goal.
Joe	It is about making decisions, but not in a traditional and bureaucratic way, but it is about creating something that has not been there before.
Tim	I increasingly see successful leadership in the way we work together as a team and build on each other´s ideas.
Robert	Leadership can be successful if we generate something new and implement new routines and processes.
Anke	Good leadership makes a difference and takes place when we all work together as a team and generate focus.
Lisa	Successful leadership is created when we work together, involve other people, and create new and different ideas and implement them.
Marcel	Leadership is successful if it addresses the issues that really hurt us. Leadership is about creating something new that uses the best there already is.
Benjamin	When we can successfully build momentum and work towards goals and targets and make changes.
Roman	I now understand that leadership comes from all of us. We work together as a team and successful leadership comes from collaboration.
Dennis	Leadership is created by all of us. In our work together we take responsibility and address issues and create something that helps us.

NON-WORKSHOP TEAMS

VT2 - Pre-AI Survey

Team member	Reply to open-ended question
Laura	Good leadership depends on the leader. It is, for example, important that the leader cares for the employees, makes the right decisions and listens to the people.
John	Leadership means setting goals and helping the team to reach these goals. A leader also organises, controls, and solves problems.
Ulrich	A good leader should know about and understand the main tasks the people currently carry out. Only then can leadership be successful.
Steven	Successful leadership means providing the resources that the team needs to achieve the goals that were set. If there is a problem, the leader helps to solve it.
Luke	Roles need to be defined clearly. There is nothing worse than people who do not know who is in charge of a certain task. Furthermore, leadership should be cooperative and people should be able to participate in change programmes, for example.
Mike	A successful leader is able to adjust his or her leadership style according to the current requirements. A good leader should trust the employees and be cooperative, but should also be hard sometimes.
Allen	Successful leadership depends on the person. Not everybody can be a leader. A successful leader can inspire and challenge people.
Marten	Leadership means pushing, inspiring and challenging others, but leadership is also about support.
Julia	It can happen everywhere. In my opinion, leadership does not depend on rank or status. However, a leader has responsibility and can achieve results with a team.
Barney	Dialogue is very important. Leadership can only work if communication works. Therefore, it is important to intensively talk to the people and to be very transparent.

VT2 - Post-AI Survey	
Team member	**Reply to open-ended question**
Laura	Successful leadership happens when decisions are made when they have to be made, so that team members can continue to work.
John	If goals are defined, communicated and agreed with the team.
Ulrich	It is all about communication. We have some problems with communication which is why I think leadership can improve in our team.
Steven	Leadership is successful if we work together as a team and come up with something new that helps us to achieve our goals.
Luke	Good leadership can only happen if everybody has a clear understanding of roles and responsibilities.
Mike	Leadership can be successful if there is enough flexibility ot react to external circumstances. A leader needs to provide support and resources.
Allen	I think that leadership is successful if routines and patterns are changed that have held the team back before.
Marten	Leadership for me means to create the environment that is needed to fulfill the results that are demanded. This should include an environment of respect and trust.
Julia	Leadership takes place if there is a clear purpose and the team members get the support they need.
Barney	In my opinion there has to be good and clear and frequent communication, so that everybody knows what is going on.

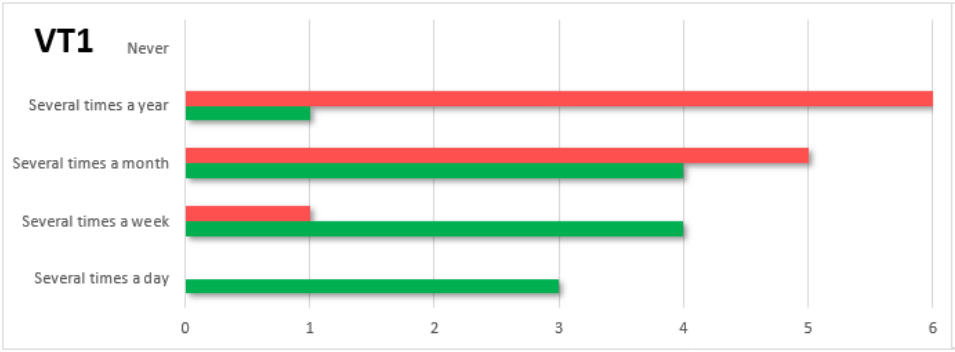
FTF2 - Pre-AI Survey	
Team member	**Reply to open-ended question**
Tom	Successful leadership is about influencing team members with character and by leading with example.
Peter	Good leaders queston whether certain tasks or routines should be done at all and reduce waste in the business.
Charlie	A good leader is able to solve problems. One example is for example the ability to solve conflicts. Successful leadership also happens when decisions can be made.
Robert	Leadership is the ability to take a team of individuals and transform them into a team that is able to achieve a common goal.
Anne	Successful leadership means negotiating and building consensus to achieve great results. A good leader is also a good negotiator.
Bob	Successful leadership is the ability to influence and motivate people, but also to challenge and push them to the limit. There are many leadership functions in a company.
Frank	A leader is appointed and leadership involves a lot of positional power. A leader can also provide direction and support.
Roland	There are different leadership styles, but in general, good leaders make the people they are leading accomplish more than they otherwise would. Successful leadership also means to be flexible.
Herbert	Leadership has to do with managing a team, with setting objectives and with achieving goals, which then makes it successful.
Joe	If someone has followers, he or she is a leader. A successful leader agrees targets with team members and follows these up.
George	Good leadership is problem solving and giving clear directions. This needs to come from a manager or from a person with authority.

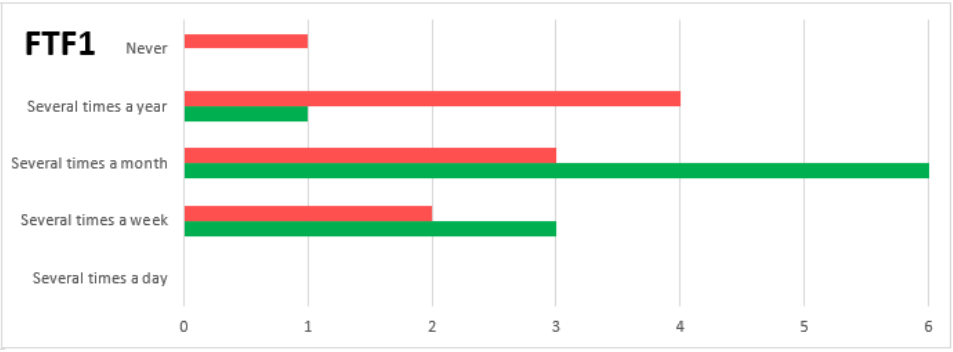
FTF2 - Post-AI Survey	
Team member	**Reply to open-ended question**
Tom	Successful leadership depends on being able to influence, motivate and inspire others, but also to push them and challenge them.
Peter	I think successful leadership can be seen when processes are made more efficient and problems are solved.
Charlie	Good leadership is problem solving and giving clear directions. This needs to come from a manager or from a person with authority.
Robert	Successful leadership happens when everyone is working together. Great ideas can also come from the team and then spread out.
Anne	Leadership is successful if common ground can be found to proceed with dealing with an issue or problem. People need to be convinced or they are not willing to carry on.
Bob	Successful leadership means taking risk and making important things happen to achieve goals.
Frank	Leaders change in companies. Some are better than others, but it can be learned. There are leaders on all hierarchical levels.
Roland	I think leadership can be very successful if everybody knows what is going on and works on a common purpose. A vision is required for this.
Herbert	Successful leadership is all about change and prepare others for this change. People need to be on board, which is the role of the leader.
Joe	A leader who is successful can get the best out of a team, as the leader can motivate and inspire people, and also provide support if need-ed.
George	People work together and leadership can happen on all levels. If someone has a great idea and convinces others, this could be leadership.

Question 5

How frequently are positions and roles changed in your team?

WORKSHOP TEAMS





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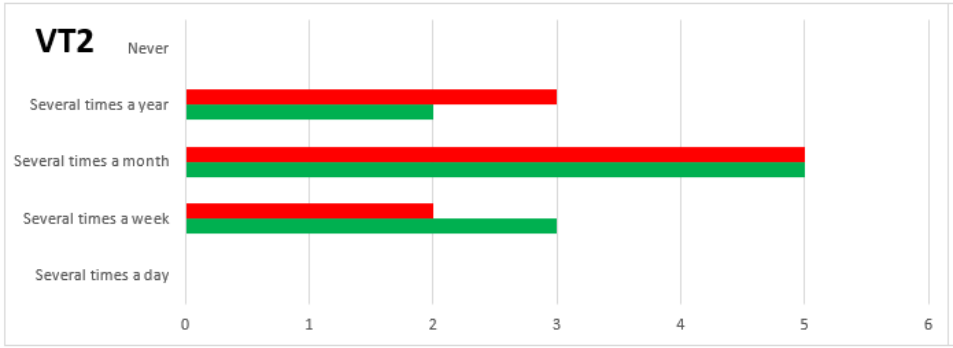
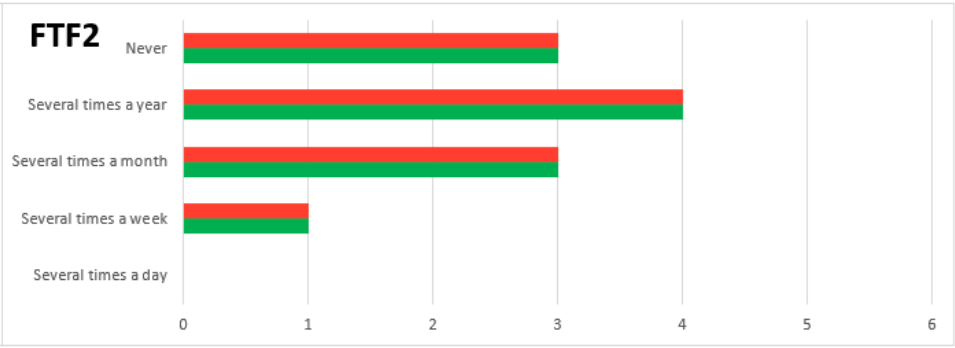


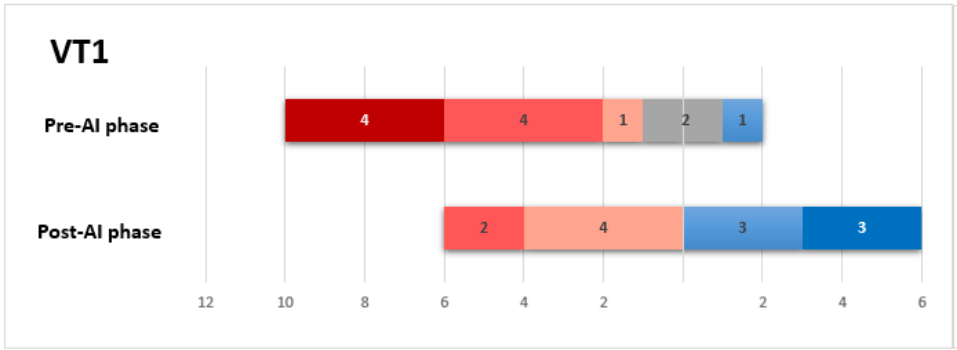


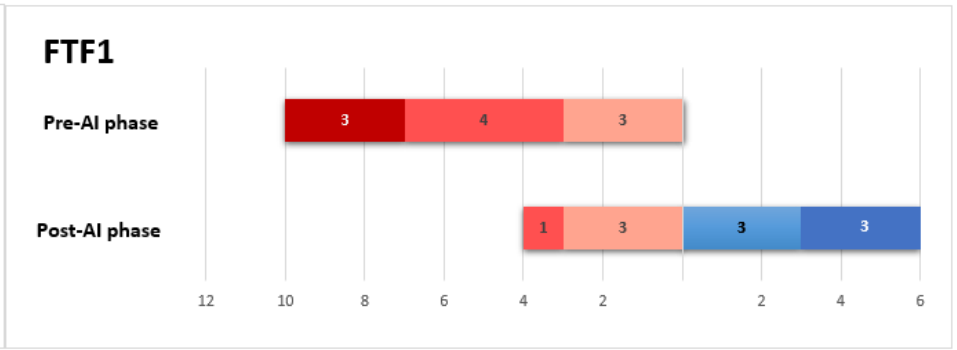
Pre-AI phase Post-AI phase

Question 6

How important are formally assigned roles and clearly defined responsibilities in your team?

WORKSHOP TEAMS





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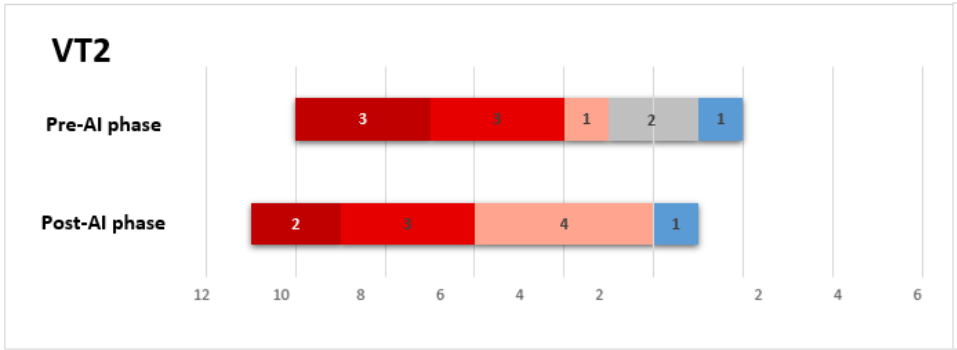
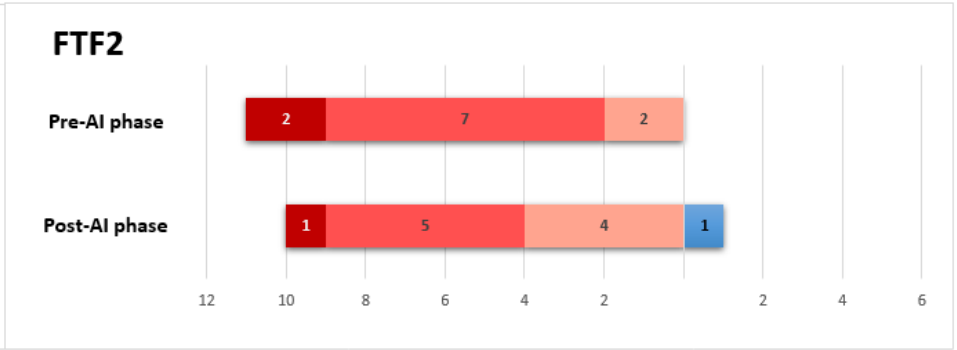
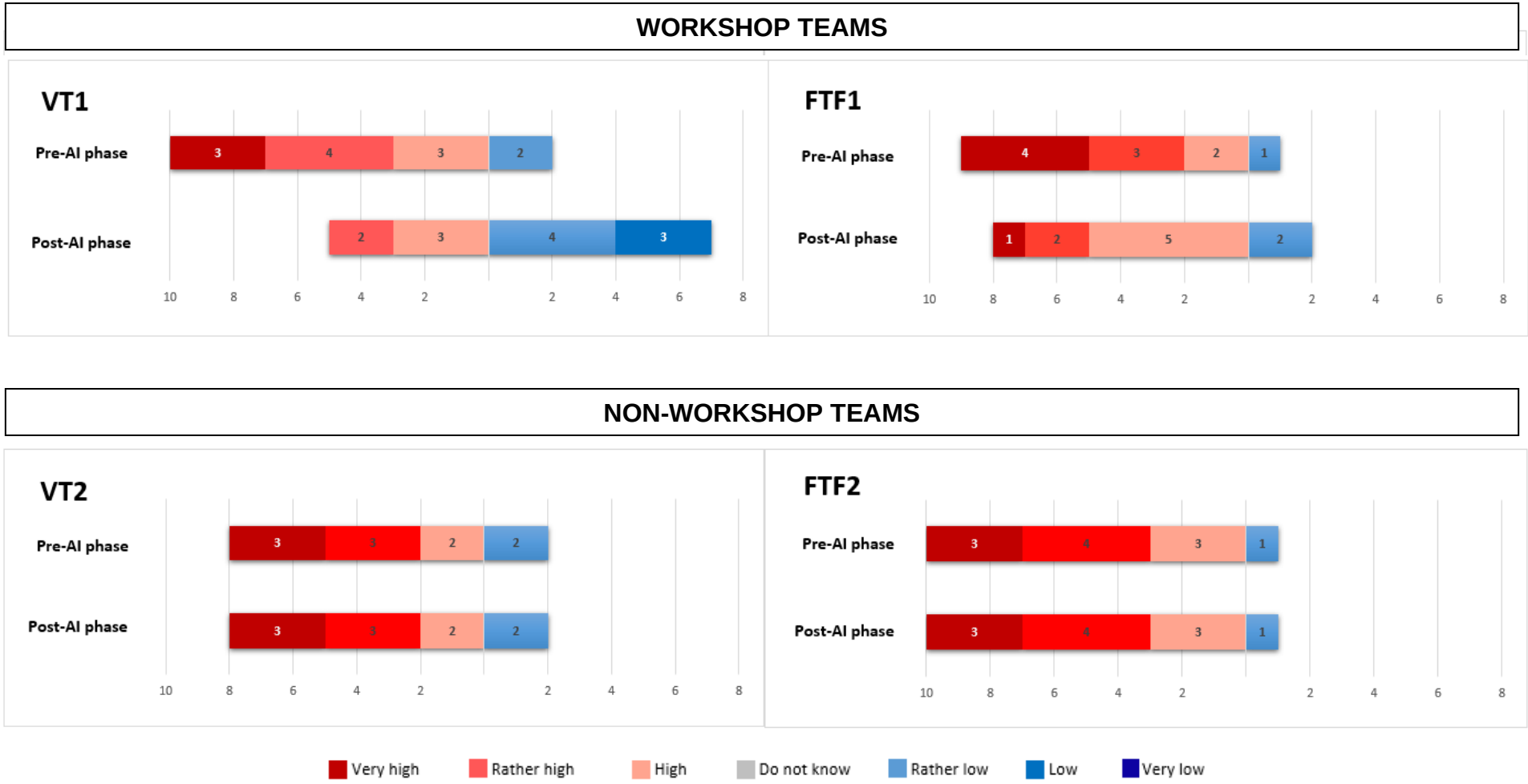




Very important | Important | Rather important | Do not know | Rather unimportant | Unimportant | Very unimportant

Question 7

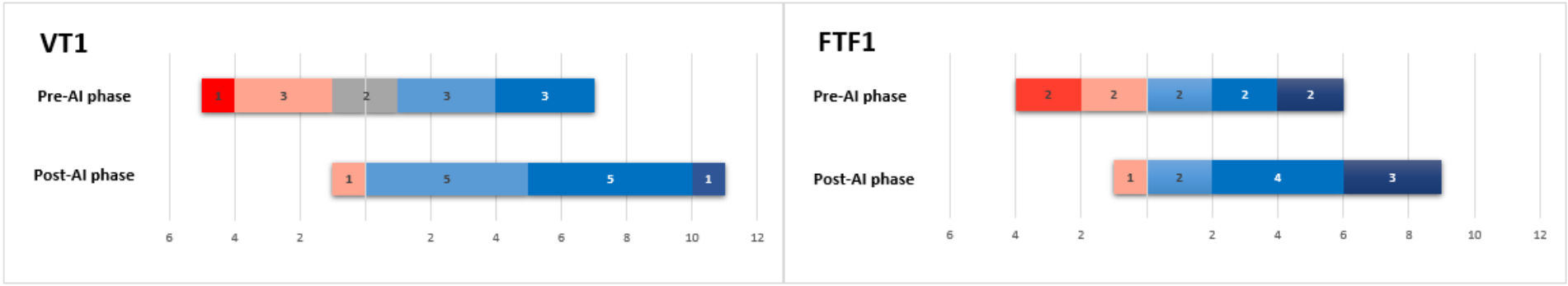
To which degree is your team manager responsible for improving team performance?



Question 8

To which degree are you responsible for improving team performance?

WORKSHOP TEAMS



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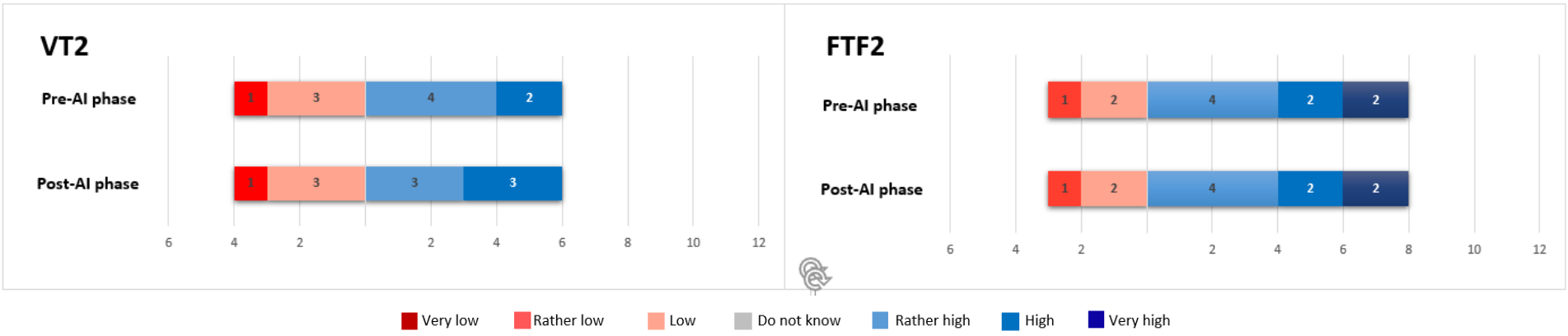
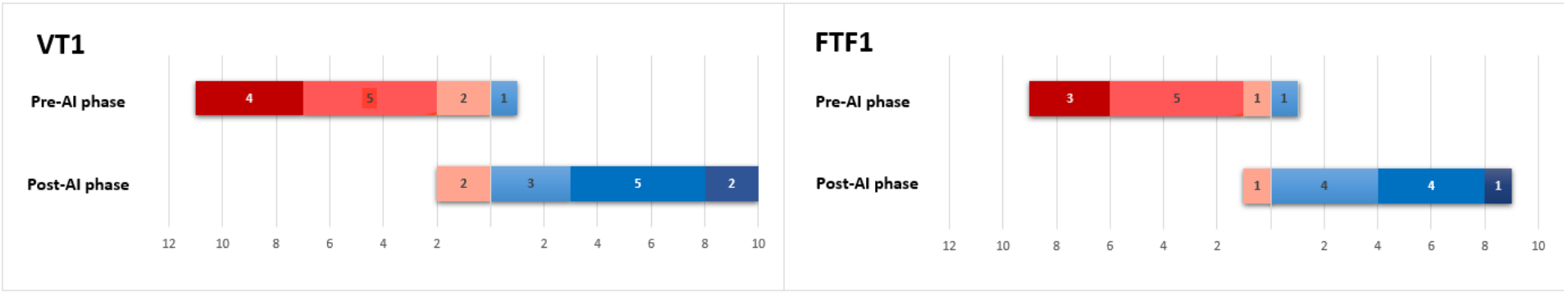


Question 9

In which way are unforeseen events, which influence the team´s progress, handled in your team?

WORKSHOP TEAMS



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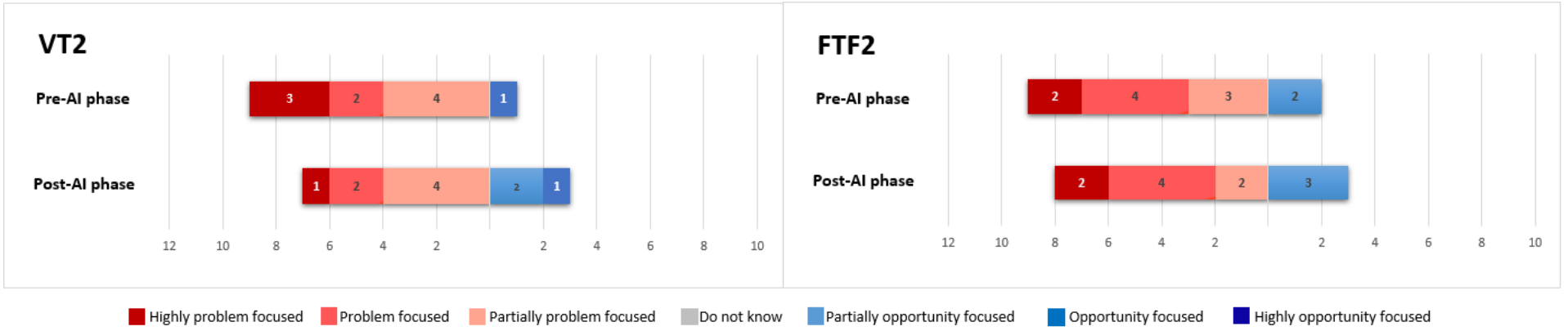

Question 10

How high would you rate the ability of your team to successfully react to unforeseen issues and events?

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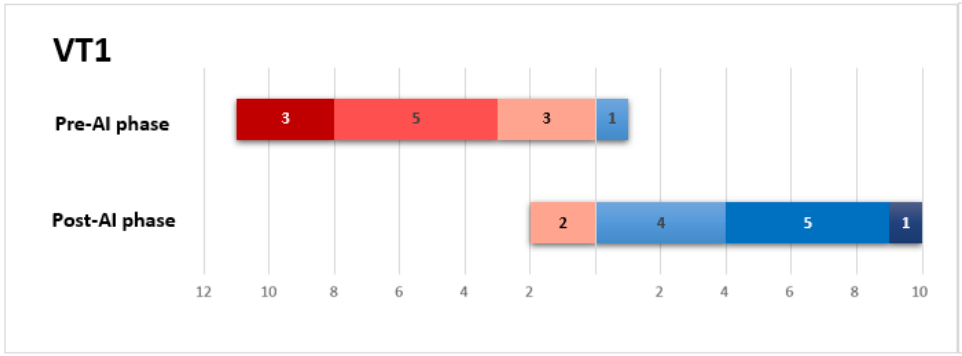

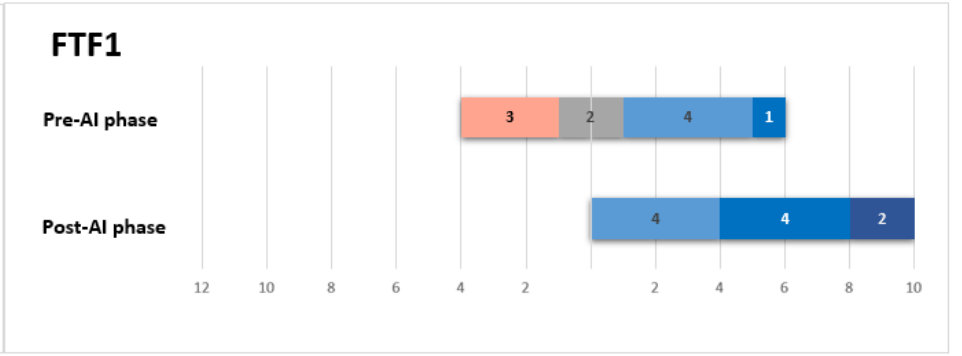

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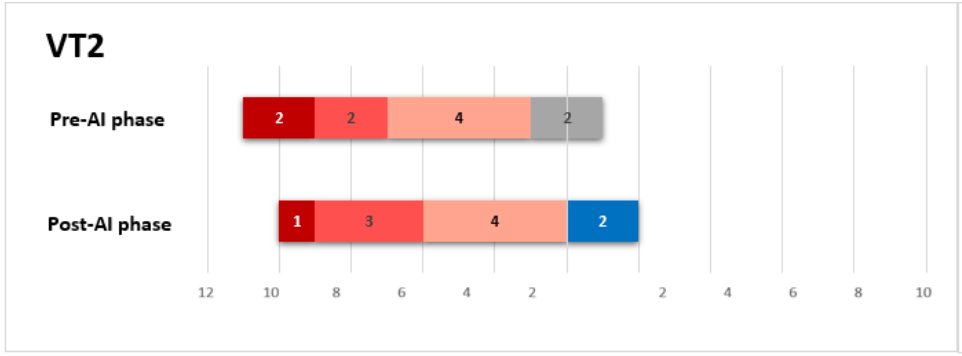
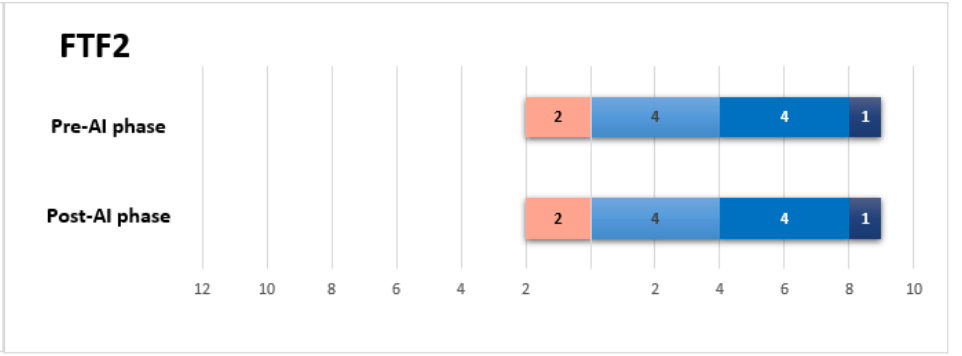


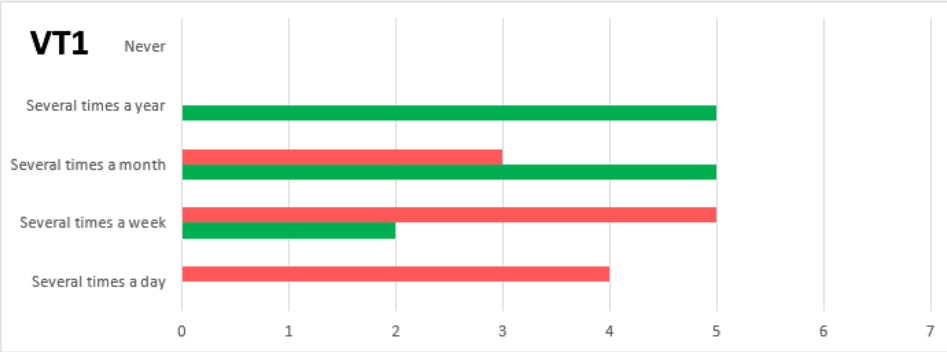


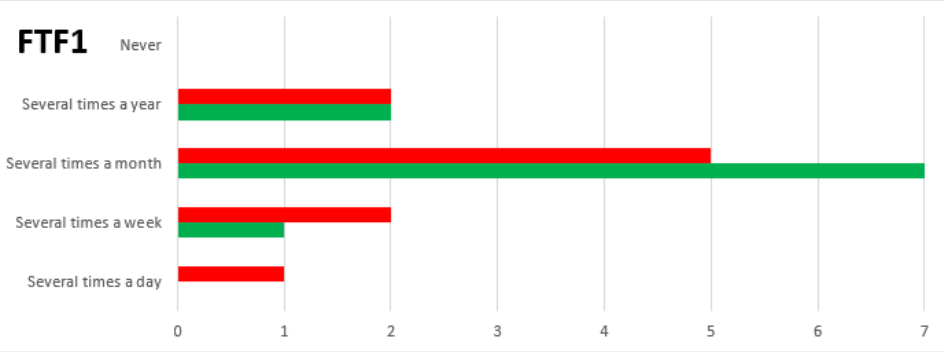
Very low | Rather low | Low | Do not know | Rather high | High | Very high

Question 11

How often does it occur that an important task cannot be fulfilled because a decision has not been made?

WORKSHOP TEAMS





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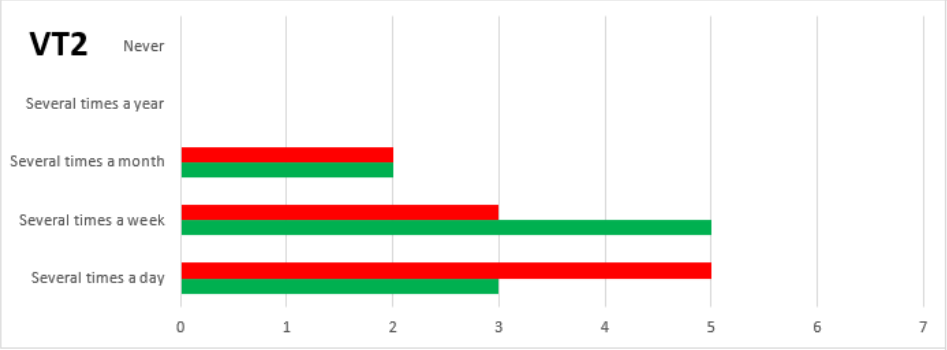
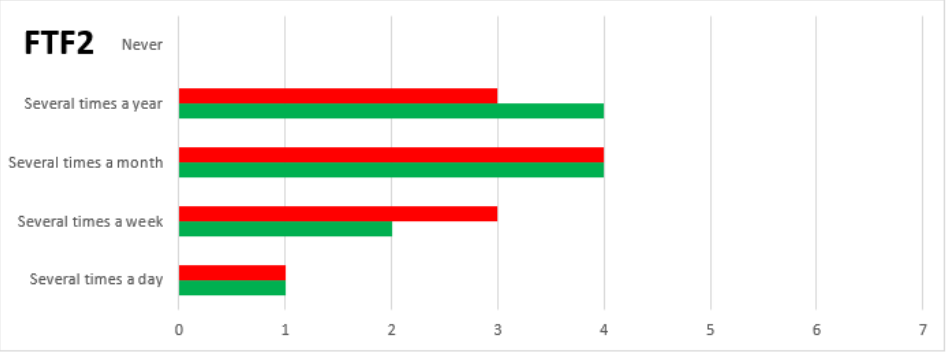


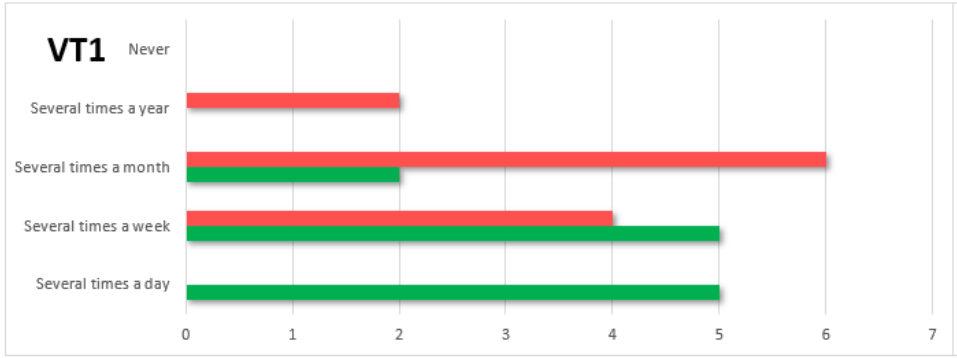


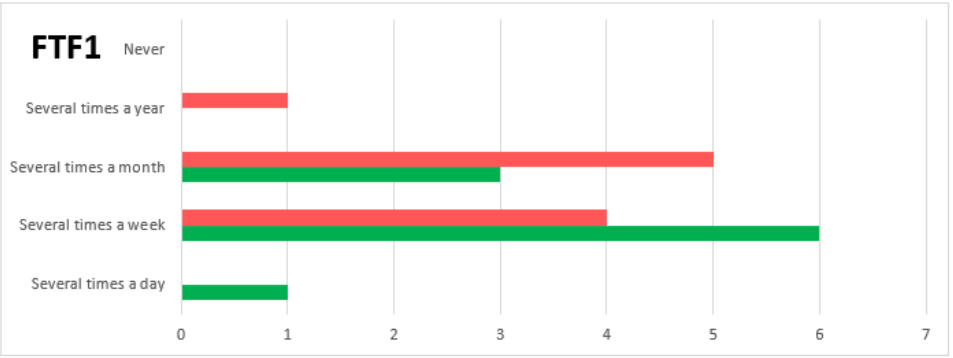
Pre-AI phase Post-AI phase

Question 12

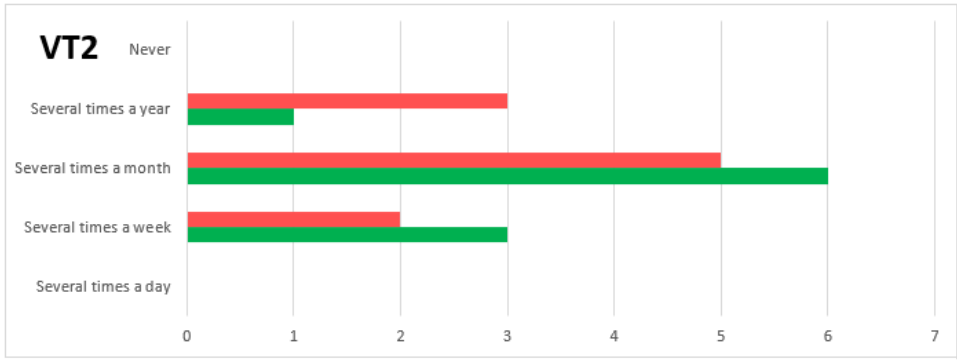
How often are assigned tasks, defined project goals and established processes questioned or possibly revised?

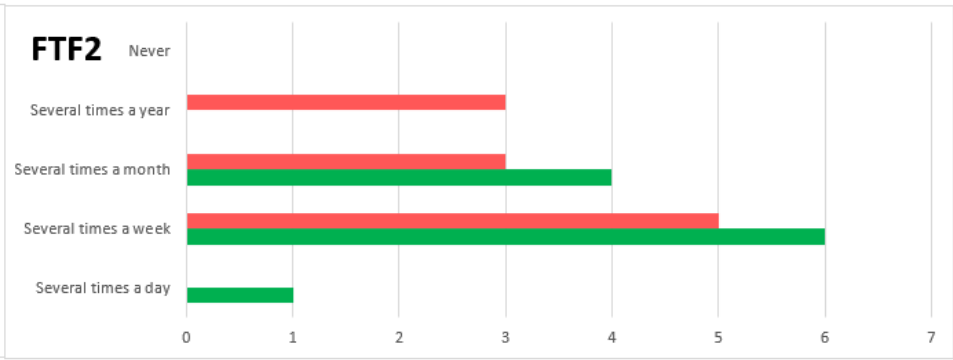
WORKSHOP TEAMS





NON-WORKSHOP TEAMS



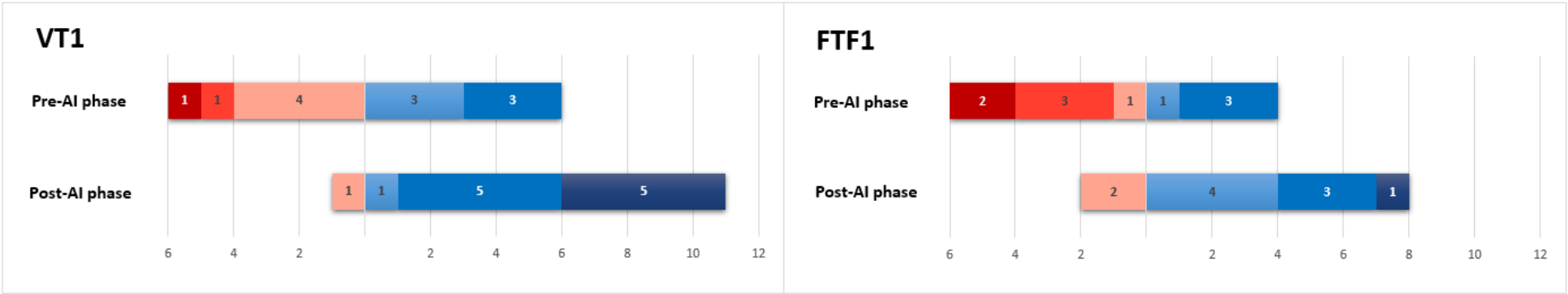


Pre-AI phase Post-AI phase

Question 13

To what extent do you feel you can take action and thus influence team performance?

WORKSHOP TEAMS



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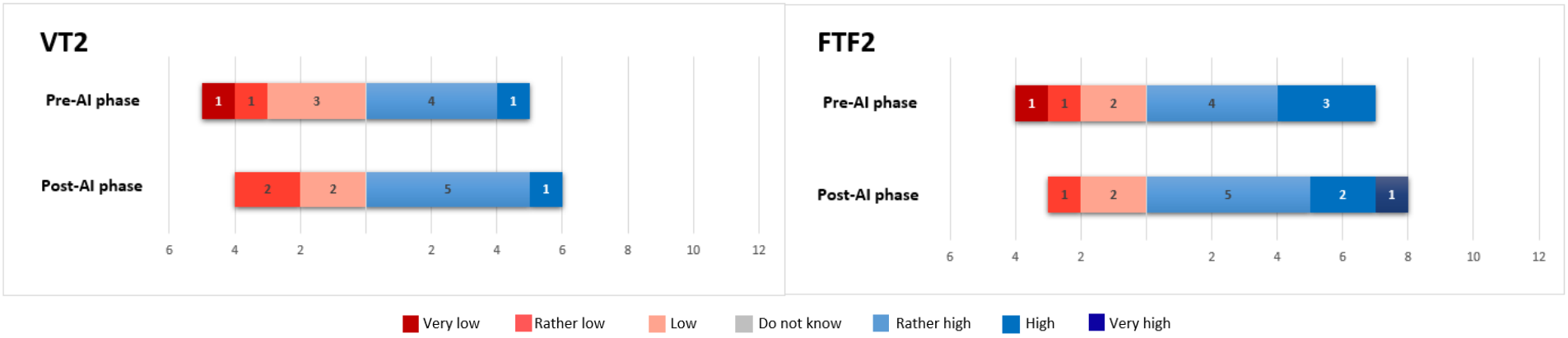
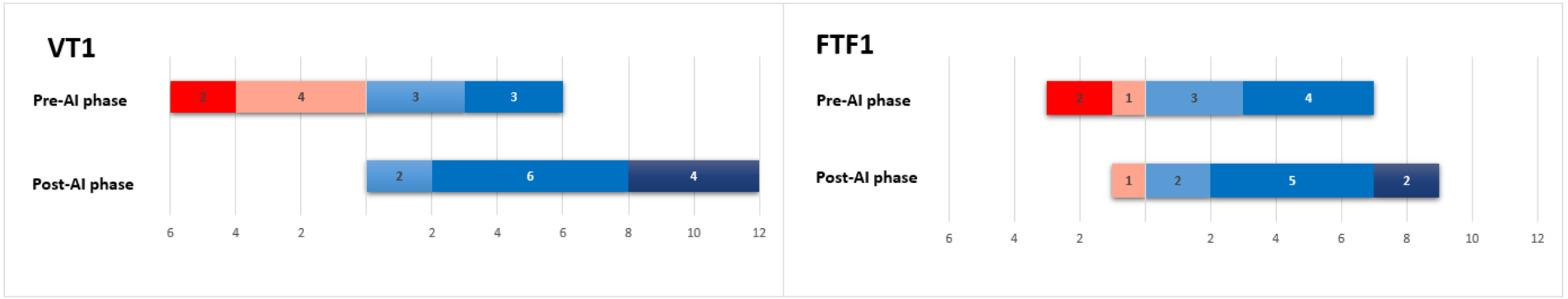


Question 14

To what extent can other team members take action and thus influence team performance?

WORKSHOP TEAMS



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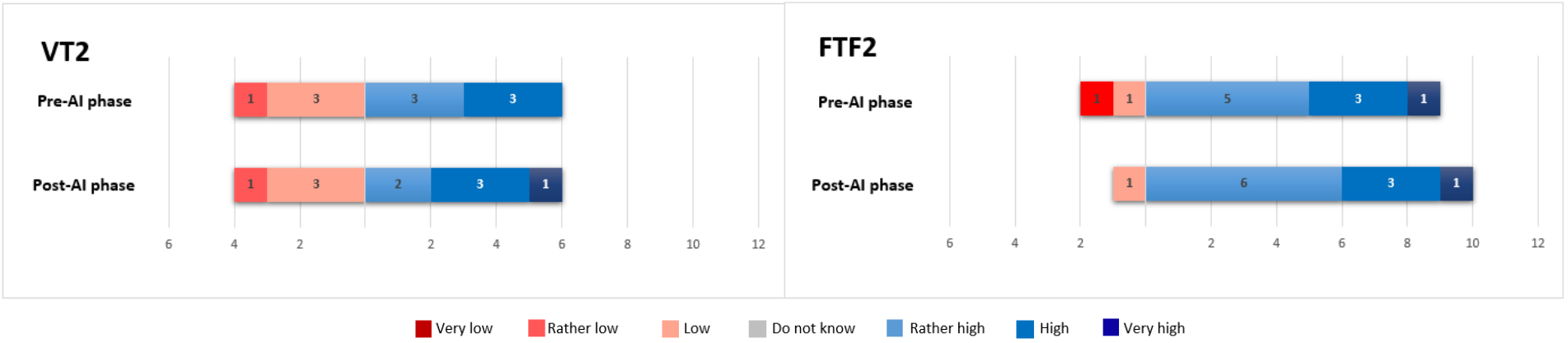
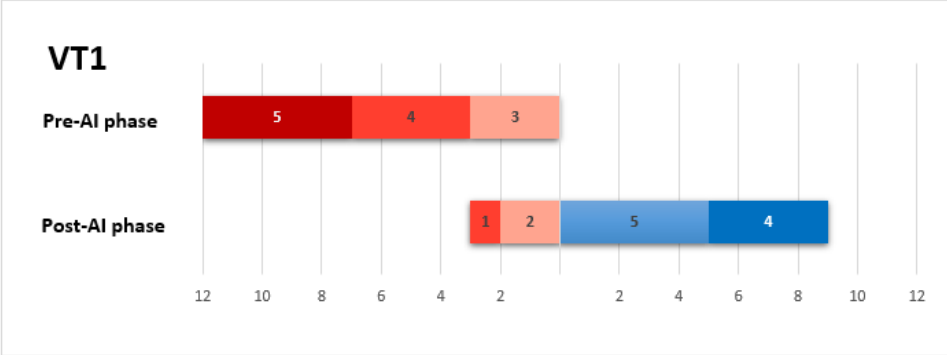
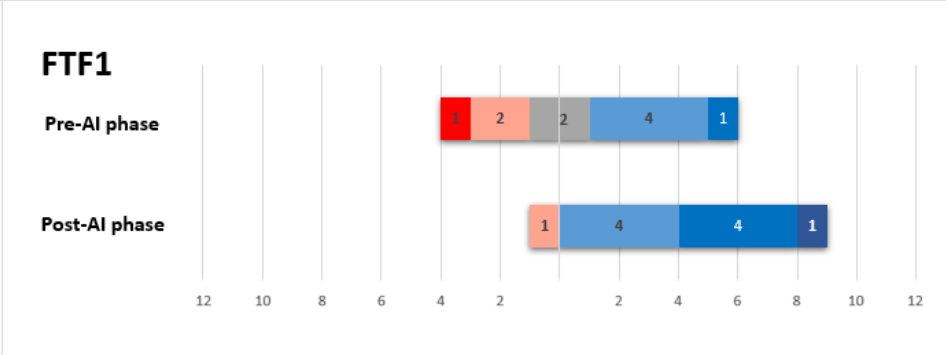


Question 15

How effective is the team when it has to make a decision that has not been made before?

WORKSHOP TEAMS





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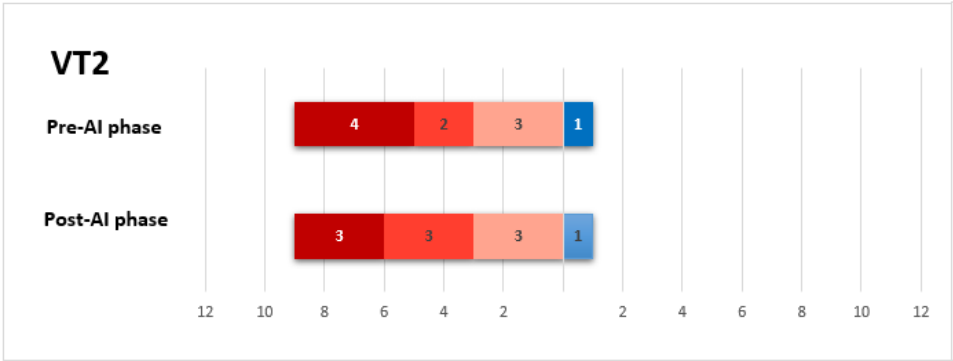

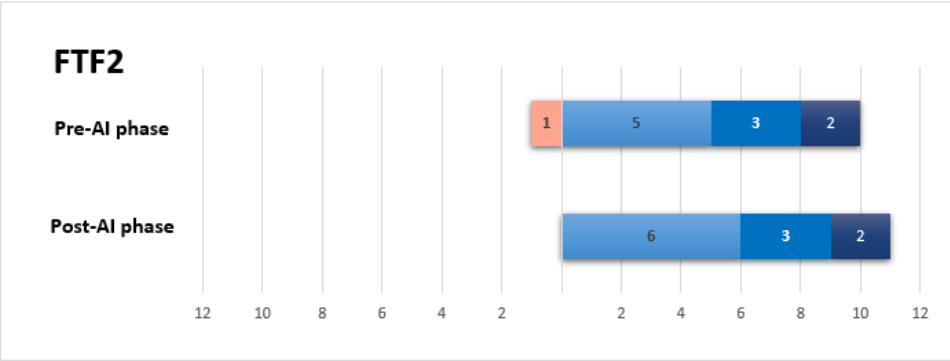

Very ineffective | Ineffective | Rather ineffective | Do not know | Rather effective | Effective | Very effective

Appendix C: Appreciative Inquiry Workshop Details

APPRECIATIVE INQUIRY WORKSHOPS

Appreciative Inquiry Workshop Information

Appreciative Inquiry Workshops

Workshop Day One (DISCOVERING)

Part One: Exploring “the best of what is”

Agenda:

Date: _____

08:30 – 10:00

- Workshop Opening
- Overview of Workshop Purpose, Outcomes and Process
- Brief introduction to AI and the 4-D process
- Setting a Focus

10:00 – 10:30:

- Break

10:30 – 12:00

- Writing AI Questions

12:00 – 13:00

- Break

13:00 – 14:30

- DISCOVERING: Identifying and compiling themes and wishes

14:30 – 14:45

- Break

14:45 – 16:15

- DISCOVERING: Identifying and compiling themes and wishes

16:15 – 16:30

- Break

16:30 – 17:30

- Review of the day
- Appreciative Feedback

Workshop Day TWO (DISCOVERING / DREAMING)

Part Two: Exploring “the best of what is”

Agenda:

Date: _____

08:30 – 10:00

- Workshop Opening
- Overview of the Day
- AI / Leadership Theory

10:00 – 10:30:

- Break

10:30 – 12:00

- DISCOVERING: Identify themes from information gathered during part one

12:00 – 13:00

- Break

13:00 – 14:30

- DREAMING: Envisioning the future.

14:30 – 14:45

- Break

14:45 – 16:15

- DREAMING: Envisioning the future.

16:15 – 16:30

- Break

16:30 – 17:30

- Review of the day
- Appreciative Feedback

Workshop Day THREE (DESIGN)

DESIGN: Finding innovative ways to create the desired future

Agenda:

Date: _____

08:30 – 10:00

- Workshop Opening
- Overview of the Day
- DESIGNING: Designing processes that will help to achieve dreams.

10:00 – 10:30:

- Break

10:30 – 12:00

- DESIGNING: Designing processes that will help to achieve dreams.

12:00 – 13:00

- Break

13:00 – 14:30

- DESIGNING: Designing processes that will help to achieve dreams.

14:30 – 14:45

- Break

14:45 – 16:15

- DESIGNING: Designing processes that will help to achieve dreams.

16:15 – 16:30

- Break

16:30 – 17:30

- Review of the day
- Appreciative Feedback

Workshop Day FOUR (DELIVERING)

DELIVERING: Implementing the action plan

Schedule overview:

Date: _____

08:30 – 10:00

- Workshop Opening
- Overview of the Day
- AI theory or leadership theory

10:00 – 10:30:

- Break

10:30 – 12:00

- DO: Group initiates action

12:00 – 13:00

- Break

13:00 – 14:30

- DO: Group initiates action

14:30 – 14:45

- Break

14:45 – 16:15

- DO: Group initiates action

16:15 – 16:30

- Break

16:30 – 17:30

- Review of the day
- Appreciative Feedback

Review Workshop Days FIVE to EIGHT

- Date workshop five: _____
- Date workshop six: _____
- Date workshop seven: _____
- Date workshop eight: _____

Appendix D: Participant Information Sheet

Participant Information Sheet for the project teams

Name of department: Business School / Strategy & Organization
Title of the study: E-Leadership: Dealing with leadership challenges in an international environment, in which advanced information technologies are increasingly used

Introduction
The purpose of this participant information sheet is to explain the background of a doctoral study that will take place at [redacted] in the period of May 1st 2016 – August 2017.

The data collection phase will take place in the period of May 1st – August 30th 2016.

Researcher: Benedikt Burek
Researcher status: Doctoral student
University: University of Strathclyde, Glasgow
Department: Business School / Strategy & Organization

What is the purpose of this investigation?
Within the above mentioned time frame, an investigation will be carried out within four project teams. This study will be guided by the results of a pilot study, which has been conducted at [redacted] in the period of August 2014 – November 2015.

Within the investigation, social interactions in different environments and contexts will be observed and analyzed. In particular, four teams will be observed throughout the investigation. Two of these teams are located in Germany, and two of the teams are geographically dispersed.

One purpose of the investigation is to understand the nature of leadership in the teams observed. The researcher furthermore seeks to find out which influence the implementation of shared leadership has on certain teams. Such a 'shared leadership apparatus' will be implemented in one face-to-face and one dispersed team. In addition to that, the researcher is interested in finding out in how far the use of Advanced Information Technology has an influence on leadership in these teams. Thus, a comparative analysis will be conducted, in which the emergence of leadership in four different types of teams will be compared and contrasted:

1) Face-to-face team; top-down management
2) Face-to-face team; shared leadership
3) Dispersed team; top-down management
4) Dispersed team; shared leadership

Is participation voluntary?
During the research project, the researcher will act as observer and is interested in collecting interactional data. The participants therefore will be observed at different points in time between May 1st and August 30th (2016). As soon as the data collection process will be completed, the collected data will be made available to the participants.

You can get access to the data that was collected from you at any time. Participation is voluntary, which means that you are free to decide if data may be collected from you and if it may be used in the study.

Participants in this study will have the possibility to withdraw their consent until September 15th, 2016.

Any information that will be made public will be anonymized in order to protect the identities of the participants.

What will be done in the project?
Data will be collected by observing daily interactions between team members. More specifically, the researcher will take notes of his observations in official meetings. Furthermore, audio recordings and chat protocols from official meetings will be used to analyze these conversations. Spoken language, body language, tone of voice and further contextual aspects in these interactions will be considered in the analysis. The objective is to identify and characterize the emergence of leadership in daily conversations in different environments and contexts.

Why were you chosen to take part?
It was decided to focus on four project teams in order to have the possibility to investigate interactions in great detail. In particular, in order to compare interactions and the way how leadership emerges in geographically dispersed teams and face-to-face teams, it was necessary to choose two geographically dispersed teams, and two teams that are located in Germany. The team size of the individual teams offers a good sample size in order to be able to collect data from various interactions between different people within the teams. Face-to-face interactions as well as IT-mediated interactions will be observed, and therefore each team member will be involved in the data collection process.

What happens to the information in the project?
The DBA study will be made accessible for the public. Any collected piece of data will be anonymized in order to protect the identities of the participants. The names of the participants will be coded, and each participant will receive a pseudonym. The key for the code names will be stored in a separate location from the data.

The collected data will be stored in hand-written diaries and on an external hard disk. Any personal copies of the data that were made for analytic purposes will be deleted after completion of the study.

The University of Strathclyde is registered with the Information Commissioner's Office who implements the Data Protection Act 1998. All personal data on participants will be processed in accordance with the provisions of the Data Protection Act 1998.

Thank you for reading this information – please ask any questions if you are unsure about what is written here.

What happens next?
If you are happy to be involved in the project, please sign a consent form to confirm your acceptance and understanding of the nature of this project.

I would like to thank everybody for his/her attention and I am happy to answer any occurring questions.

Researcher contact details:
Researcher: Benedikt Burek
University of Strathclyde e-mail address: benedikt.burek@strath.ac.uk

Chief Investigator details:
Chief Investigator: Prof Barbara Simpson
Tel.: +44 (0) 141 553 6141
Strathclyde Business School
Department of Strategy & Organization
16 Richmond St, Glasgow G1 1XQ
Scotland

This investigation was granted ethical approval by the University of Strathclyde Ethics Committee.

If you have any questions/concerns, during or after the investigation, or wish to contact an independent person to whom any questions may be directed or further information may be sought from, please contact:

Secretary to the University Ethics Committee
Research & Knowledge Exchange Services
University of Strathclyde
Graham Hills Building
50 George Street
Glasgow
G1 1QE

Telephone: 0141 548 3707
Email: ethics@strath.ac.uk

Appendix E: Consent Form

Consent Form for the production project team

Name of department: Strategy & Organization
Title of the study: E-Leadership: Dealing with leadership challenges in an international environment, in which advanced information technologies are increasingly used

- I confirm that I have read and understood the information sheet for the above project and the researcher has answered any queries to my satisfaction.
- I understand that my participation is voluntary and that I am free to withdraw from the project until September 15th 2016, without having to give a reason and without any consequences.
- I understand that I can withdraw my data from the study until September 15th, 2016.
- I understand that any information recorded in the investigation will remain confidential and no information that identifies me will be made publicly available.
- I understand that data will be collected at different points in time between May 1st, 2016 and August 30th, 2016. I will not necessarily be aware of the exact points in time, because taking audio-recordings and using chat protocols as meeting protocols is a standard procedure in team meetings at [redacted]
- I consent to being a participant in the project.
- I consent to being audio recorded as part of the project.

(PRINT NAME)	
Signature of Participant:	Date: