Stellingen

behorende bij het proefschrift van Helga D. Hohn ‘Playing, Leadership and Team Development in Innovative Teams’.

1. Succesvolle, innovatieve teams ‘spelen’. Zij spelen met ideeën, regels, geld, ruimte en hun leden maken plezier en dagen elkaars uit. (dit proefschrift)

2. Theorieën over innovatie teams integreren in onvoldoende mate de bestaande sociale theorieën over teams en groeps dynamiek en de kennis over creativiteit en creatief klimaat. (dit proefschrift)

3. In het creatief klimaat ligt een tegenstelling besloten. Aan de ene kant is er destructie, uitdaging en risico gedrag, terwijl tegelijkertijd teamleden elkander vertrouwen, aanvaarden en spelen ‘zoals kinder, die nog geen weet van spelletjes hebben’ (Winnicott). De tolerantie van deze paradox heeft een wezenlijke rol in het succes van creatieve ondernemingen (dit proefschrift)

4. Er zijn weinig verschillen op relationeel-proces niveau tussen leiders van verschillende professionele domeinen, zoals advieswerk, innovatie management, artistiek leiderschap, en technisch project management. De innovatieve aspecten van de taak overschaduwen alle andere verschillen. (dit proefschrift)

5. Hoewel artistieke leiders en technische project managers een hoge mate van consensus over het leiden van een innovatief team op relationeel proces-niveau hebben, zijn zij als leiders van hun taak niet uitwisselbaar. (dit proefschrift)

6. (Sociale) wetenschappers zouden hun eigen grenzen moeten verleggen en leren om te spelen met andere theorieën, dan alleen hun eigen (ook dit proefschrift)

7. Ongeremde ondervraging om de waarheid tot elke prijs te achterhalen, is evenzeer een aanval op democratische waarden als liegen en niet de waarheid spreken.

8. Als human resources als investeringen in plaats van als kosten op de financiële balans mochten worden opgevoerd, dan zou veel verspilling van menselijk potentieel vermeden kunnen worden.

9. Het dilemma van veel universiteiten is, dat zij met procedures, die in de 19de eeuw thuis horen, proefschriften die voor de 21ste eeuw geschreven zijn, moeten beoordelen.


11. Muziek maken is een ‘schizofrene’ bezigheid aangezien de speler zowel technische precisie moet hebben als zijn emoties en spontaniteit de vrije loop moet kunnen laten.

12. Het vermogen om twee tegengestelde gezichtspunten voor een langere periode vast te houden zonder gez te worden, zal een van de belangrijke vaardigheden van de 21ste eeuw zijn, noodzakelijke om met de multi-sociale en multi-culturele uitdagingen van dit tijdperk om te gaan.
Theses

1. Successful, innovative teams ‘play’. They play with ideas, rules, finance, space and their members have fun together and challenge each other. (this thesis)

2. Current theories for innovative teams do not sufficiently integrate the existing social theories of teams and group dynamics with knowledge about creativity and creative climate. (this thesis)

3. Creative climate contains a paradox. Destruction, challenge and risk taking occur while at the same time, team members trust, accept and play ‘as children play who do not yet know of games’ (Winnicott, 1971). The tolerance for this paradox has a decisive role in the success of any creative endeavour. (this thesis)

4. There are few differences on the relational-process level between leaders of different professional domains, such as facilitation, innovative management, artistic leadership, and project management. The innovative aspects of the task outweigh all the other differences. (this thesis)

5. Although Artistic Leaders and Technical Project Managers share almost full consensus on what is important in leading innovative teams on the relational-process level, they cannot be exchanged as task leaders. (this thesis)

6. (Social) Scientists should push their own boundaries and learn to engage in playing with theories other than their own. (also this thesis)

7. Unrestrained inquisition to find out the truth at any price is as much an assault on democratic values as lying and not speaking the truth.

8. If human resources were allowed to be credited as investments instead of costs on the balance sheet, much waste of human potential could be avoided.

9. The dilemma of many universities is, that they use procedures belonging to the 19th century to decide on PhD’s written for the 21st century.

10. Beethoven once said that the pause is the most important part in music. This might be true of any creation: the magic happens during the breaks.

11. To make music is a ‘schizophrenic’ activity since the performer needs to be a precise technician while allowing a free flow of emotions and spontaneity.

12. To keep two or more contradictory viewpoints in one’s head for a considerable length of time without losing one’s mind, is one of the important skills necessary to cope with the multi-social and multicultural challenges of the next century.

Delft, 17 December 1999
Playing, Leadership and Team Development in Innovative Teams

A Reflection on Theory
Confronted with the Perspective of Experienced Leaders

PROEFSCHRIFT

ter verkrijging van de graad van doctor
aan de Technische Universiteit Delft,
op gezag van de Rector Magnificus prof. ir. K.F. Wakker,
in het openbaar te verdedigen ten overstaan van een commissie,
door het College voor Promoties aangewezen

op vrijdag 17 december 1999 te 11.00 uur
door Helga Dorothee HOHN
doctorandus in de psychologie
geboren te Stuttgart, Duitsland
Dit proefschrift is goedgekeurd door de promotoren:
Prof. dr. ir. J.A. Buijs
Prof. dr. J.B. Rijssman

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Preface

The physical and social context of a situation gives meaning to what is said. In fact most phenomena cannot be explained without contextual information: 'seeing an apple fall' could lead one to imagine anything from 'harvesting the crop' all the way up to 'the discovery of the law of gravity' depending on the situation and the meaning given by the individual. Thus meaning is not only created 'outside' of us but depends on our mind's eye, our background and our understanding of the world. To provide a context for this thesis I would like to present some relevant life experiences to the reader explaining where the research question originated. Secondly I would like to use Escher's lithograph 'Boven en Onder' on the cover of this book as a visual analogy that illustrates the tension underlying this research question.

As long as I can recall I had a love for the arts; theatre and dance, drawing and music. After graduation the generosity of my parents, as well as a good guardian mother, gave me an opportunity to live in California for a year and pursue on these interests. At that time, the human relations movement was flowering and in spite of my passion for fine arts, but also inspired by them, I decided to study psychology. This choice has influenced my interest in groups and the leadership, however subtle, that makes them work.

At the University of Leiden, where I began my study, the proliferation of the 'group movement' of the sixties had influenced the curriculum considerably. Group dynamics could be studied as a major subject even by someone like me, who wanted to be a clinical psychologist. Working in groups, in that time, focused on the inner search and understanding of what was happening in the group and within oneself. In the laboratory training, groups would spend days watching, discussing and reflecting on their own process. Often, the only objective was the understanding of and insight in the group dynamics. Half jokingly, the output of the groups was by times characterised as 'confusion on a higher level'. But in the end we, as students, gained a lot of insight into social processes happening in groups and into our own role in these groups. In hindsight, this kind of understanding is a good pre-condition for insightful leadership. However, at that time personal development and growth was all that mattered.

Now after seventeen years of practice in management training and education I find that the field of groups and teams has changed. Having worked in the role of a trainer, a consultant and a manager I could observe this field from different positions. As production-efficiency, cost-reduction and speed have become a high priority in the service of survival of organisations, time itself has become a scarcity. The speed of the information age seems to decree that even human development and creative growth should happen more rapidly than ever. So developmental processes, training and learning are challenged to speed up and keep up with the trend of the time. Paradoxically, psychological maturation and learning of human beings have their own rhythms, however much we push or pull. This does not leave us powerless in the face of the 'natural forces of maturation'. The challenge for the social sciences is to develop further understanding of maturation in order to foster development and learning and to
expand barriers and thresholds to growth.

The speedy approach of high-performing, multi-disciplinary business teams seems to be in sharp contrast with the human potential approach since these two worlds seem to give quite a conflicting image of the same situation.

Taking this difference as a visual analogy, two realities present themselves in an 'impossible' picture as the lithography of Escher's 'Boven en Onder' on the cover of this thesis shows. In Escher's print there is a dangerous crossing point where one tries to get from one picture to the other. When walking on that part of the floor we find ourselves suddenly crossing a border; we are not standing on solid ground any more but are dangerously hanging upside down in the air. This is not a promising future so we intuitively refrain from crossing it. Coming from below we would have to climb to the second floor and then make a hazardous leap out of the window without much chance of reaching safety. Only a change of perspective can rescue us from the visual dilemma which the lithography presents.

In parallel, we can see the difficulty of communication that often exists between viewpoints of different realities, that is for instance between different and sometimes conflicting theoretical viewpoints about what is important for a successful team. It became an issue for my research.

I received an invitation 'to play' when I designed a creative thinking course for managers with professor Roger de Bruyn. In one of those 'cosy cafe's of Antwerp we had a 'later in the bar' talk and I mentioned my wish to integrate my passion for the arts with my profession of training groups and teams. Roger was delighted and encouraged me to put these two together and write a thesis.

The journey I took in writing this thesis brought me from a seemingly 'impossible' picture of reality to the challenge of rereading and reflecting on theories, from small groups in the seventies to teams in the nineties and confronting them with the views of experienced leaders now. It also invited me to connect my passion for the arts with my passion for groups and people and explore ways to deal with the tension between the creative and the task oriented.

In a later phase Jan Buijs and John Rijisman declared themselves willing to guide this work and be my supervisors for this thesis. They helped me from their specific domains to put my thoughts into research. I thank them deeply for their profound discourse and guidance through this research. I appreciate all the help of the staff of Delft University of Technology and of the Catholic University of Brabant. Especially the statistical experts Henk Arisz and Lia van Sprounen from Delft gave me essential assistance in tackling the statistical analysis of the data.

I feel and wish to express great gratitude toward my husband Marc, to my mother and brother, and to the friends who are my extended family. Without their visible and invisible support of this endeavour it would not have come about.
# Playing, Leadership and Team Development of Innovative Teams

*A Reflection on Theory Confronted with the Perspective of Experienced Leaders*

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α The introductory chapter begins with the problem statement, the frames of reference and an overview of the content and the structure of the thesis.
1.1 Presentation of the Objective

1.1.1 The Dynamics of Innovative Teams

Innovation in business, associated with advances in technology and product design, has built a reputation of being able to solve complex and challenging problems (Moss Kanter, 1999). At present many innovation issues are dealt with by teams rather than by individuals. In most cases this implies that the successful innovative teams is more than the sum of the expert knowledge of the team members, it means that the social process of the team worked well. This thesis explores the leadership and development of teams with an innovative task by focusing on the group dynamics, leadership and interactions between team members that make it possible for a team to be innovative and successful.

In innovation the social dynamics of the team are often obscure. Interestingly, little of the present team literature refers to earlier studies of small group social dynamics. Yet judging from experience, leaders and members of teams agree that social processes can have damaging consequences when they go wrong.

The discourse about the dynamics of teams or small task groups, as they are called in social science (Yukl, 1998), is intense discussion. ‘What kind of leadership do innovative teams need?’ (Lauer, Isaksen & Dorval, 1996), ‘What is a high performing team?’ (Katzenbach, 1993), ‘What is the climate for learning and creativity in a team?’ (Eckvall, 1990), ‘How does a team manage its environment?’ (Ancona & Caldwell, 1992). These are but a few of the current themes on the subject of innovative team dynamics. But are these ideas common to all disciplines and are they indeed integrated in the thoughts of successful leaders? Can the challenges leaders face as they guide innovative teams be studied, understood and possibly be answered with the group dynamic theories of the 1960’s and 1970’s, or is a new theory of team dynamics needed?

This research engages in the ongoing discourse about these and other issues in innovative team dynamics. Both a theoretical and a practical perspective are investigated. On the one hand theories in academic fields relating to a selection of affiliated theoretical issues will be surveyed. On the other hand in different professional fields experienced leaders of innovative teams will be interviewed.

1.1.2 Stating the Problem

The focus of this thesis is on issues of social dynamics and the internal functioning of innovative teams. Research and literature on innovation concentrate mainly on task level and performance but little on the relational-process level and on social interaction is observed in a recent study by Steyaert, Bouwen, and Van Looy (1996). They propose that ‘social interactions play a crucial role in the innovation process’ and that ‘the social-embeddedness is a major but undervalued feature of the innovation process’ (Steyaert, Bouwen & Van Looy, 1996, pg. 67-89).
This thesis contributes to the exploration of these undervalued features in the innovation process of team. The ‘relational-process level’ and not so much the ‘substance-content level’ is the subject of investigation. Frequently these levels are also referred to as group process level and task level. This is a classical distinction in small group theory (Bales, 1950) and leadership literature (Blake & Mouton, 1962; Fiedler, 1967; Hersey & Blanchard, 1982, Yukl, 1994). In this thesis ‘relational-process level’ refers to the atmosphere in the team, leadership issues and the psycho-dynamic development of the group.

Innovation is closely related to creativity, thus also ‘relation-process’ conditions for creativity are explored. Creativity can thrive or wither depending on the environment in which a group functions. In teams, particularly groups connected to the business world, the team climate that facilitates creativity should be explored. Research has been done on the creative climate at the organisational level (Amabile & Gryskiewicz, 1988; Eckvall, 1990) and on group dynamic climate at the small group level (West, 1996), but not for the combination of the two. In a way this is also true for the study of team leadership. In spite of the large amount of research on leadership, the study of innovative teams, whose leaders have set the conditions for creativity and innovation, is a relatively new field of exploration (Buijs & Valkenburg, 1996; Lauer, Isaksen & Dorval, 1996).

The contribution of this thesis to the discourse in this field is done by clearing, exploring and integrating concepts related to innovative teams and reviewing these concepts from the perception of experienced leaders.

The main research questions pertain to a theoretical reflection confronted with the perceptions of leaders of innovative teams. Within this discursive approach the main questions of this thesis are presented as follows: ‘What are the conditions a successful innovative team requires on the relational-process level and what is the kind of leadership that is needed in a successful innovative team?’

1.2 Research Approach: Where Theory and Practice Meet

In psychology we observe that the domains of theoreticians and those of practitioners often do not meet. Herriot notes that ‘the field suffers from untheorized practice and irrelevant theory’ (Herriot, 1996). One way to deal with this issue is to establish a systematic dialogue between theory and practice. We have attempted just that in this exploratory research by selecting contributions from theory and questioning leading practitioners about these issues. After analysis, the resulting implications are explored, which leads to suggestions for continued research and the further development of practice. The following approach was used to undertake the project:
1.2.1 Literature Survey

Through a literature survey, concepts were identified and selected, concepts that may contribute to the successful functioning of innovative teams on the relational-process level. For this literature study areas of developmental psychology, of group dynamics and of creativity theory were chosen as field of contribution to the research question.

First, theories from developmental psychology about playing, learning and psychological development were selected based on their connection with the social part in development and their alignment with the development of creativity in the human being. The survey is centred around the role of playing in the theories and on the development of creativity in children and adults. A point of investigation is whether parallels can be drawn between the conditions for the development of creativity in individuals and the conditions for the development of creativity in teams. Perspectives from developmental psychology and from the Post-Freudian psychoanalytic theory have been selected and reviewed as representative for models on emotional development.

The group dynamic research domain generated theories that made it possible to pose the research question. Clearly in this area abundant theoretical views on the relational-process of groups can be found. A selection of theories on group dynamics and leadership is surveyed and discussed as they have evolved from the 1950’s until the 1970’s including the literature which abounded on teams from the beginning of the 1990’s (Katzenbach & Smith, 1993; Scholtes, 1993). The literature on small groups and the literature on teams will be compared and contrasted in order to identify theories that are of value to understanding the relational process of innovative teams and their leadership.

The third domain of creativity has been chosen as field for survey because it aligns itself closely to some crucial characteristics of innovative teams, that is whether and how they can be creative and keep up the conditions for the innovation to happen. The focus of the chapter is on thoughts about creative climate. Creative climate refers to the environmental conditions and pressure a person or group has to deal with and the effect these have on the creativity of the person or group. The ‘creative climate’ metaphor is originally coined by Eckvall (1983). He and others (Amabile & Gryskiewicz, 1989; Van Gundy, 1987) studied the conditions needed in an organisation and in teams in order for creativity to be at all possible. The literature of this domain will also be reviewed focussing on leadership issues that arise when discussing a favourable environment for innovative teams.

1.2.2 Questionnaire Study

The second part of the research consists of a practical inquiry which is based on the topics selected from the literature survey. Senior leaders of innovative teams are asked to reflect on their own leadership. Their perceptions about the conditions on a relational-process level that are essential for a successful innovative team are collected through a questionnaire study. As innovative team leadership can happen in many
area's, I decided to contrast these area's and look at different fields of work. Below innovative work is placed on a line from routine work to improvisation. This spectrum from routine to innovative tasks (Wijnen, Renes & Storm, 1989, pg. 22) is shown in figure 1.1. Wijnen, Renes and Storm define routine work as highly efficient, with clear procedures and decision paths and with no unknown or new tasks. Project management is seen as effective and task oriented with new elements and aspects, which have to be considered. The other extreme Wijnen, Renes & Storm (1989) mention is improvisation which means that one must be flexible when working with new situations and aspects that arise with the non- routine task. Using Schön's wording a 'unique, non-routine task' (1982) is seen here as the last part of the continuum. The leaders of innovative teams work in mainly non-routine domains as shown in figure 1.1.

![Figure 1.1: Spectrum adapted from Wijnen, Renes & Storm (1989, pg. 24)](image)

The leaders were selected from five different professional fields: Facilitators/Consultants, Social Scientists, Innovation Managers, Artistic Leaders and Technical Project Managers (in a random sequence). Three of the professions, the Innovation Managers, Technical Project Managers and Facilitators mainly work in technical and administrative areas, while the artistic leaders were chosen as a contrast group working in the field of the performing arts. The social scientists were asked as a contrast group because of their theoretical background.

The choice to ask experienced leaders of teams and not their members was based on the assumption that a leader is in the position to have a full overview of the group and its task. In some groups the members also have this overview, but certainly not in all. Autonomous and self-leading groups were far more difficult to find in general practice than literature might lead one to believe (Amelsfoort, 1993; Katzenbach, 1993; Ray & Bronstein, 1995). Leaders of innovative teams were asked from the assumption that their leadership is a good example of current management found in innovative teams. The social scientists had a double role as they were also asked to react on the basis of their theoretical knowledge.

This practical inquiry was done in order to attain a more complete picture of how experienced leaders of different professions think about innovative team issues in comparison to current theory. Their views as they answered the open questions of the
inquiry should help to generate new options on the understanding of the group
dynamic level of innovative teamwork The comparison of the different professional
domains should shed some light on whether leader's perception of the relational-
process differs with the task in the area of innovative projects.

1.2.3 Intersubjectivity as the Basis of Human Knowledge

The researchers assumptions are at the heart of any research and influence directly or
indirectly the choice of the research paradigm. I sympathise with the ideas provided by
social constructionism and I feel also the importance of giving credit to knowledge
within social science build within other paradigms.

In past decades the social constructionists claim to have captured the intrinsic value of
social activity (Rijksman, 1990). According to them, the nature of 'knowing' something is
an internalised communication since we learn everything we know through
communication with others from our first moment of life onward. Therefore knowledge
is intersubjective. Rijksman related this point to the current views on scientific
endeavour.

"One could say that the development of the so called objective science, that is the
human enterprise of knowing which intends to say how things are without the
possibility of changing them, is actually a gradual articulation of the intersubjective
nature of our knowledge construction." (Rijksman, 1990, pg. 3)

In the innovation literature Rickards (1996) 'recasts' the role of creativity in the
management of innovation. He objects to the way practitioners and researchers alike
have tended to treat innovation as an objective phenomenon which can be understood
through empirical studies and he arrives at the conclusion that innovation can be
broadly understood as 'a social problem-solving process of a non-routine kind.'
(Rickards, 1996, pg. 15). This is consistent with what Buijs and Valkenburg refer to as
the social-interactive paradigm when they observe the contradictions between
'esposed theories' (Schein, 1992) and 'theories in use' that they encounter in
innovative practices of organisations (Buijs & Valkenburg, 1996, pg. 259).

Knowledge is no longer a fixed entity based on universal truths. After the philosophy
of Kant, which made us understand that the world we see is created in our minds, not
even the most stubborn physicist will deny a certain relativity of knowledge. In other
words, our understanding of what knowledge is, changes with time.

Rijksman elucidates this in a small essay on the paradigm shifts of science:

"The first step, then, in the contradiction of (...) objective knowledge was a spatio
temporal story (as different from, for example, a mythological story) about stars.
This story was the symbolic expression of how we co-ordinate ourselves in time and
space by means of stars. However after many years of writing such an objectifying
story about stars, people became disturbed by intersubjective differences which we
would now readily attribute to light. If one looks at stars during the day, it is
impossible to see what other people observe during the night and in order to
maintain the same objectifying story about stars one needs another objectifying
explanation of what created the disturbance. This turned out to be the story of what
we now call the science of light. But, obviously this new science or story was again

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the symbolic expression of a social co-ordination. And so one could go on: while writing an objectifying story about stars and light, people became confused by lenses and, after adding that to their story, by living lenses, eyes. (...) However, once we start to study eyes, we objectify what is traditionally seen as being part of the subject. This was done, the subject’s eye was transformed into a scientific object. But in doing so, new disruptions were encountered, leading to the study of nerve conduction and after that, the study of psychological functions and finally, the study of intersubjective nature of knowing. Thus, in a way, what is being done in the so called objective science is to write a gradually expanding story about the steps we take to look around together and to say what it is that we see. In other words in the so called objective science we objectify our own practices of constructing meaning.”

(Rijksman 1990, pg. 4).

Social constructionism places knowledge and the creation of knowledge within the realm of social interchange and sees the terms in which the world is understood as social artefacts (Gergen, 1985). Gergen states that:

“The degree to which a given form of understanding prevails or is sustained across time is dependent on the vicissitude of social processes (e.g. communication, negotiation, conflict, rhetoric). Forms of negotiated understanding are of critical significance in social life, as they are integrally connected with many other explanations of the world and themselves constitute forms of social action.”

(Gergen, 1985, 1997, pg. 51)

Important in this debate is the necessity to discern and understand the social nature of knowledge. In social constructionism one needs to understand how relationships and social processes are woven into the context and origin of knowledge. If we are dependent on the ‘vicissitudes of the social processes’, we should better recognise and understand these processes and look at them as an object of study. In my view the experience of practitioners is a valuable source of knowledge here. They act upon what happens in real working life’, make things happen and their experience is first hand perception about what works and how they think about it. Gergen, again, is very outspoken about the contributions of practitioners to the creation of knowledge by acting upon life.

“Attention must be given to the realm of professional practice. In many respects, [they] (...) have a far greater impact on cultural life than the academician. Their actions can enter more deeply and directly into relational practices than the abstruse writings of the professional. In effect they have enormous potential for cultural transformation. (...) The next decade will be one in which the scholar will benefit more from the contextualised skills of the practitioner than the reverse.”

(Gergen, 1997, pg. 62)

An enriching last viewpoint on the issue of the nature of knowledge comes from a reflecting practitioner (Schön, 1982). Luc Hoebeke asserts

“The epistemological statement of Maturana and Varela that knowing is doing and doing is knowing, and that everything said is said by someone, transcends this dichotomy and, even more, gives an epistemological basis for what ‘science’ may start to mean in the twenty-first century. Empiricism can then be redefined as the restored relation of actors between what they do and what they experience as participant observers. Thinking and practice are inseparable.”

(Hoebeke 1994, pg. 166).
Accepting the view that thinking and practice are inseparable, although not always congruent, theory should incorporate and reflect on practical observations and vice versa. In this sense, this research is based on a systematic dialogue between the author and different groups, in written and in voiced form, within the historical and practical context of its time.

**Synopsis Research Approach**

*With this synopsis I would like to emphasise that the research is written in an interpretative frame as is referred to throughout the thesis. This means that a substantial part of the research lies in the reflection on theory and conclusions found there. The confrontation with practice through the questionnaire study is thus the second part of the research. Leaders of different professions are asked as ‘experts in practice’ to state their viewpoints not as a sample collected on probability basis but as a purposive sample selected with the goal to obtain good insights and experiences, critical appraisals and ideas of experts. The result of both, the literature surveys and the questionnaire study, will be treated as separate outcomes and will be discussed and brought into play in the last two chapters.*

**1.3 An Overview of the Thesis**

The following overview is given as a guide through the thesis. Represented by an icon every chapter is shown as a component of the thesis’ structure at the beginning of each chapter. This structure as presented in figure 1.2 also shows the relation between the theoretical and practical chapters, which evolved almost simultaneously and converge in the discussion and conclusion.

The figure is shown at the beginning of every chapter to indicate where the chapter is located in the structure of the thesis.
Structure of the Thesis

![Diagram]

*Figure 1.2: Structure of the Research with Icons*

Icons

α The introductory chapter begins with the problem statement, the frames of reference and an overview of the content and the structure of the thesis.

רקע In this chapter on methodology the procedures used for the research are described in a comprehensive form. The methods which are considered to answer the research questions, are discussed for the literature survey as well as for the questionnaire study. The chapter ends with an overview of the time frame and the nature of the quest.

This is followed by three theoretical chapters in which topics of interest for innovative teams are identified and extracted from the theories. Each chapter ends with a synthesis of these themes, which is also used as a basis for the design of the questionnaire.

책 The chapter Playing in Learning and Development explores the role of playing and the role of trust in theories about the psychological development of creativity in children and adults.

책 In the chapter Group Dynamics in Small Groups and Teams, a selection of different theories is presented in their historical context as they consider the internal dynamics of small groups.
The chapter Creative Climate deals with the domain of creativity and innovation and starts with general definitions of these terms followed by a survey and comparison of theories on creative climate in organisations and in small groups.

In the chapter on the questionnaire study explorative statements based on the topics of the theoretical chapters and summarised in explorative propositions, are developed. They investigate the perceptions of the leaders and their experience in relation to the themes for innovative teams generated in the theoretical chapters. Following the design of the questionnaire sampling and procedure, which are described together with the statistical analysis of the data. Finally the results of a content analysis on open questions and the results of the explorations, proposed at the beginning of the chapter, are presented.

The discussion of the findings concentrates on the main results from the theoretical survey and the main results of the questionnaire study. The syntheses of the literature chapters are discussed and compared with each other. The implications of the outcome of the explorations and further analysis of the questionnaire study are elaborated.

The conclusions highlight and balance the findings on their value and usefulness for further discourse and for their possible application in practice. This will contribute to the unfolding and continuing 'story line' of the theories on leadership and team development of innovative teams. Recommendations for further research are formulated. The thesis ends with an epilogue and reflection on the work of a more philosophical nature.

Readers Guideline

For a quick overview the reader may choose to go from the summary to the introduction chapter (1) and concluding chapter (8). For managerial interested readers recommendations are to also read the questionnaire study (chapter 6) and the discussion chapter (7). Social scientists might be more interested in the theoretical chapters (3-5). These chapters can also be looked at separately. For theoretically and practically interested readers a sequential reading of the thesis is recommended.

Bridge to the next chapter

The next chapter deals with the methodological account of the research and specifies the tools used to tackle the research question in the theoretical survey and the questionnaire study.
2 Methodology

2.1 Introduction
2.2 Literature Survey
2.2.1 Steps through the Literature Surveys
2.2.2 Metaphor and Analogy as Means of Inspiring New Investigation
2.3 Questionnaire Study
2.3.1 Choice of Respondents and Method
2.3.2 Analysis of Data
2.4 Nature of the Quest

In this chapter the procedures used for this exploratory research are described in a comprehensive form. The methods which are considered to answer the research questions, are discussed for the literature survey as well as for the questionnaire study. Special attention is given to the why of a questionnaire and the use of statistical tools in this explorative research. The chapter ends with an overview of the time frame and the nature of the quest.
2.1 Introduction

This study is about leadership in the context of innovative teams, which places it in the domain of business administration as much as of group dynamics as much as of theories on creativity and innovation.

2.2 Literature Surveys

The theoretical chapters are conducted along the lines of a regular literature survey but with selected theories in three different domains presented in respective chapters.

2.2.1 Steps through the literature surveys

Each theoretical chapter identifies potentially useful models and theories for the dynamics of innovative teams and topics for the questionnaire study. These topics will be compared on how they are treated by different authors and schools. Each chapter ends with a synthesis of the topics and relates them to the research questions on innovative teams.

The first literature survey of the Chapter Playing and Learning in Development is situated in a domain that is little familiar with business administration, or innovative teams. There is some overlap with social processes and with the development of creativity. That is where the challenge of this chapter lies. All survey work in this chapter is guided toward finding worthwhile connections that contribute to innovative teamwork.

The second literature survey is done in the field of group dynamics. Forsyth (1990) summarises eleven disciplines that contribute to or make direct use of this field. They range from psychology and sociology through business up to sports and criminal justice. One might argue that the answer to the research question: leadership on the relational process-level’ should be found in this domain. This is the case, but there are two points to be made. First, not one but many answers are given in this field, changing over time and as referred to in the introduction (sec. 1.1.2) not always without contradiction. Second, the main theories are focussed on social processes. So in this chapter the challenge is to sift through the substantial amount of optional theories and select concepts and models that pertain to innovative teams. It is also necessary to sort out whether there are differences between theoretical views on the functioning of small groups and of teams and, if so, whether it is possible to solve the controversies constructively for innovative teams.

In the realm of innovation and creativity a body of knowledge with a status of its own has evolved in the last thirty years (Isaksen, 1987; Isaksen, Murdock, Firestien & Treffinger, 1993; Torrance, 1995). This is the domain where the innovation will be investigated. The survey restricts itself to the theories on ‘creative climate’ and adjacent topics. the challenge of this chapters is to identify the topics that are specific for the ‘relational-process level’ of innovative teams, that cannot be found in the group dynamic models.

Methodology
2.2.2 Metaphors and Analogies as a Means of Inspiring new Investigation

There is a certain necessity to look at the theoretical point of departure, since in the chapters many theoretical fields are considered on an equal footing and different perspectives are used as sources of input. The interpretative tradition of hermeneutics and presently of social constructionism, gives valid viewpoints to integrate these perspectives (Gergen, 1997; Morgan, 1986; Polkinghorne, 1988).

Metaphor, as given in the definition of Aristotle in the Poetica (Vroon & Draisma; 1985, pg. 74), comes from the Greek word metapherein ‘to carry over’ which means that unknown things are carried over into known domains and in terms of the known. One or more characteristics of a thought or object is attributed to another object by metaphor. Metaphors and its larger category, analogy, allow us ‘mental leaps’ into domains of our interest that are not yet lit (Holyoak, 1995). Within the context of this thesis, analogy is used to link theoretical concepts from different domains with their varying context to the research question.

Morgan (1986) proposes a way to find criteria for the selection of the right metaphors. Helpfulness and usefulness of the insights generated by the metaphor are the criteria he uses to judge metaphors, as well as their capacity to reconcile pieces of information and interpretations. The metaphor should be judged depending on its usefulness and the purpose it serves. He states:

“Our immediate task, having completed the diagnostic reading, will be to identify which insights are most useful and to integrate them to produce what I call ‘the most effective story line’. (....) the time always arrives when we need to move from description to evaluation and arrive at an opinion. This is the story line; it incorporates the metaphorical analyses but it is not confined by them. In other words, the metaphor framework is allowed to face into the background as the story line takes the foreground.” (Morgan, 1986, pg. 330, 331)

The process is an open-ended mode of inquiry that allows problem definitions and possible solutions to emerge from the readings on which the analysis is based. In the literature survey, metaphor and analogy are used as a means to make connections between the theories of the chapter and topics for innovative teams. Metaphor in this thesis will be employed in the theoretical survey in order to make transfer possible from the unfamiliar ground of the domains of developmental psychology to the subject under investigation the relational–process level of innovative teams. It is also used in the analysis of the small group research versus the team literature in trying to find the fitting ‘story line’ (Morgan, 1986). In chapter seven (Discussion) analogies will be used to synthesise the outcomes of the theoretical chapters and find new meaning.

2.3 Questionnaire Study

The design of the questionnaire study is based on the literature survey and some initial questions from practice. Through an iterative process, the questionnaire is then further elaborated on the basis of systematic interviews, first with practitioners and then with representatives from different professional groups. This iterative procedure is used as a
structured ‘dialogue’ to validate the questions from the viewpoint of the practitioners. Thus the questionnaire is based on the framework of the literature survey but completed only after several rounds of conversations with representatives of the respondent groups. The final questionnaire is given to senior leaders, who work in different professional fields. These leaders, seen as an expert group, are asked verbally and in writing to give statements about their experience and the ‘state of their art’ of leading innovative teams.

2.3.1 Choice of Respondents and Method

The group of respondents was chosen to be a purposive one as there were many criteria to adhere to: i.e. leaders of innovative teams, working in different professional fields, time-bound project work and senior leadership. The objective was to find information-rich persons from whom one can learn a great deal about issues of central importance to the purpose of the research (Patton, 1990). The sampling procedure and data collection will be fully presented in chapter six.

One might hold, that an experiment instead of a questionnaire with innovative groups would yield more precise information. But there were two reasons to discard this option. Firstly, it is difficult to grasp social reality with the rigour of an experiment without loosing the richness of personal accounts and reflections. Secondly, we wanted to avoid the kind of double theatrical script that experiments particularly often produce. Script one, would be the experiment itself; script two (which is seldom mentioned) would be the script of the participant, who wants to get something out this theatrical game, called experiment. The gain of the participant/subject might be some kind of credit or just to be involved in a university activity (Rijsman, 1996, pg. 9), but this seldom coincides with the original purpose of the experiment. This kind of double scenario the researcher has to account for, was not in the objective of this study.

Why then for instance not a natural inquiry, like discourse analysis? The emphasis in a discourse analysis is on linguistic, mainly rhetorical aspects of the construction of meaning. Within this thesis, this information would have led to further exploration or deconstruction of meaning, but not to a contrast of theoretical viewpoints with practical, experience based, perceptions of leaders of innovative teams. Therefore rhetorical analysis is one step beyond the issues of this research.

The questionnaire was used because it could facilitate the ‘dialogue’ between theory and practice. The confrontation between the distilled themes from theory (diverging) and the experience of the practitioners was in my view well achieved by using the restrictions of a questionnaire (converging). As a result it was possible to select topics from theory and practice, whereupon statements and questions were formulated. These were refined by the representatives of the different professions finally to be answered by the team leaders. Open questions were designed to give the leaders the possibility to present their own thoughts and viewpoints on main issues.

The standardisation guaranteed stability in the way the questions were posed which ensured comparability of the answers between the different professional fields and
genders. Moreover, the use of a questionnaire makes the taken research steps more traceable.

Moreover, there was the respondents situation and availability to be considered. The respondents were senior leaders in the field and did have practically no extra time available. Their time could be shortened by the use of a questionnaire and they could fill in moments of their own time, and think statements and questions over whenever it suited them. Finally distance restraints were easier to bridge for researcher and respondents.

Other methodologies within the interpretative spirit to deal with the research question, could have been participative observation, diaries of the subjects, action research. They are valid methods to elicit the tales of a culture or group or person, but they were little feasible within the availability of such a divergent group of senior leaders, when a larger sample of persons was wanted.

2.3.2 Analysis of Data

As elaborated in the scientific stance it is important to make a distinction between what Rijksman calls ‘observational expansion: the search for extensive, stable data in time and space through machine measurements, and rhetorical expansion: the creation of intentional data with or without the symbols of language maybe with the same gadgets (measurements, figures, statistics).’ (Rijksman, 1990) It would be out of place to say that the perceptions of people are stable natural scientific data.

The method of information gathering by way of a questionnaire might suggest a certain type of reality. In other words, the use of statistics, figures and graphics might suggest the assumption of an external stability of the observed answers. This is not the case. The use of a questionnaire and statistical procedures is for working through the accumulated data in order to process them in a systematic way. As techniques are not of themselves positivist or phenomenological (Cassell, Symon, 1994) but tools to be used for different purposes.

Working with a questionnaire given to a larger group of respondents meant that the statements of the different leaders could not be analysed without tools. The open question responses in the questionnaire were transformed into quantitative data by content analysis which were then turned into figures and charts. With statistical analysis it was possible to compare and contrast these transformed answers. Once the similarities and differences between the answers, at a level significantly higher than probability, were determined, the statements were transformed back again into words and meaning. Within the statistic reality, the logic of that domain was followed according to statistical conventions.

In the end, the structured dialogue with the group, in the form of a questionnaire, must be interpreted as a meaning giving process. It is a dialogue about perceptions and should be interpreted within this context of reflections of leaders on their own experience. Results are indicative and useful for hypotheses and theory generation.
2.4 Nature of the Quest

Although the study started with a theoretical voice, later on theoretical and practical perspectives were developed in parallel. The literature survey was continued in parallel with the questionnaire study and the data-processing. For reasons of lucidity, the chapters are structured as a logical outline instead of a chronological outline.

The questionnaire study was conducted in the years 1994 and 1995, the literature surveys, however, continued until 1997. One of the effect is that in the Chapter Discussion, the comparison of literature with the results of the questionnaire study, also reflects what other researchers have found and published later on till 1997.

Conclusions will be based on authentic examples of leadership, playing, and team development in innovative teams as perceived by senior team leaders in the practical world combined with my own experience and theoretical discourse.

It will be clear by now that eternal results, fully proven theories and unshakeable truths are not to be found in the conclusions of this thesis. The social world is one of dialogue and action and the results here are meant to contribute to a generative dialogue with professionals and managers who work with innovative teams in the pursuit of results. From the distillated thoughts, new ones are born and translated into conclusions. These are based on my selection and interpretation and backed up by the many voices of theorists and practitioners.

Bridge to the next chapter

The next chapter will begin with the first theoretical survey explores the role of playing and the role of trust in theories about the psychological development of creativity in children and adults.
3 Playing in Learning and Development

3.1 Introduction

3.2 Learning and Cognitive Development in Psychology

3.2.1 Leontev Vygotsky on Learning and Development

3.2.2 Jean Piaget and the Role of Playing in Cognitive Development

3.2.3 Social Genetic Constructivism; the Social Role in Learning

3.3 Playing and Creativity in Emotional Development and Maturation

3.3.1 Erik Erikson: A Theory of Psychosocial Development

3.3.2 Donald Winnicott: Playing and Creativity

3.4 Synthesis

3.4.1 Topics for Innovative Teams

3.4.2 Comparison of Theoretical Orientations

The chapter Playing in Learning and Development explores the role of playing and the role of trust in theories about the psychological development of creativity in children and adults. First three theories on learning and development and two theories on emotional development and maturation are described. Based on analogy themes of interest for innovative teams are identified and extracted from the theories. The chapter ends with a synthesis of these themes and a summary how each theory dealt with them.
3.1 Introduction

Developmental and psychodynamic theories provide models that can deepen our understanding of learning and development and the role of trust, playing and creativity in innovative teams. In this chapter the stance is taken that significant analogies can be found in the theories on the development of a creative human being and the workings and development of innovative groups. Parallels are found between the concepts on the conditions for the development of creativity in these theories and the development and creativity in teams. From these analogies concepts can be generated that contribute to a better and more fundamental understanding of questions at the relational-process level of innovative teams.

This argument is underlined by the observation that organisational learning theories often use concepts from the domain of knowledge of developmental psychology. Kolb for instance bases himself on the developmental psychologist Piaget when he explains his theory of experiential learning (Kolb, 1992).

"Assimilator and accommodator [in my theory] come from Piaget's work. For accommodators the world of concrete experience is wide and they modify their concepts easily to fit to what happens in the world. Whereas for assimilators like me (starts laughing) I'm always modifying the real world to fit my models. If it doesn't fit here I just chop it off there. Both of these concepts have a lot to do with creativity." (Interview with David Kolb; Hohn, 1992).

The chapter begins with developmental psychology as seen by Leontev Vygotsky (Van der Veer, Valsiner 1991), the role of playing in development as conceived of by Jean Piaget (Piaget, 1962) and with the role of 'the social' in cognitive development as researched by the Social Constructivist school (Doise, 1985; Perret-Clermont, 1991; Rijksman, 1996). These schools are chosen because of the alignment with the social in development that connects Vygotsky and the Neuchatel Constructivists and their keen observation in development of man.

Secondly post-psychoanalytic viewpoints on development and creativity are described as given by two renowned psychoanalysts: the theory of psychosocial development of Erik Erikson (1982) and the activity of playing 'as the basis of all creative and spontaneous living' as it is found in the writings of Donald Winnicott (1971). These two representatives of psychoanalytic school are chosen, because both have extensively looked at the emotional development of the human being also in the context of the development of creativity and a healthy human being. Their positive view on mankind was another factor in the choice of these theorists from the vast body of psychoanalytic knowledge.

In every of the theories themes of interest for innovative teams are extracted, which will be discussed and compared. In the synthesis main findings are summarised and themes for the questionnaire study are drawn up. For now, to give a more comprehensive understanding, context is provided by the description of the selected psychologists as they functioned in their world. This will also provide a fuller picture of the historical context of the theories.
3.2 Learning and Cognitive Development in Psychology

3.2.1 Leontev Vygotsky on Learning and Development

Vygotsky began his career as a psychologist in Russia in 1917 after the end of the revolution. At that time he already was a lawyer and philologist and as a free thinking mind had several publications on his name (Vygotsky, 1987). He was a student in the time when Wundt (1897), the founder of the Institute for Experimental Psychology, was at the height of his career. Other contemporaries were scientists like Pavlov (1927) and John B. Watson (1919), who built the basis of the stimulus-response theory and behaviourism, and scientists like Köhler (1929), Koffka (1935), Wertheimer (1945) and Lewin (1949), founders of the Gestalt Psychology.

Close to the opinions of his Gestalt colleagues, when coming of age as a psychologist, Vygotsky concluded that there was a ‘crisis in psychology’. According to him psychology, which had made a turn from nineteenth century philosophy toward experimental psychology, had failed to establish adequate theories. Neither the experimental methods of Wundt nor the behaviourism of Watson could account for more than what was then called the ‘lower psychological processes’: trial and error learning, ‘rote learning’ (memory learning), physical skills and basic conditionable behaviour. These theories could not explain complex perceptual and problem solving behaviour or other ‘higher psychological processes’ that Vygotsky was interested in.

Vygotsky went a step further than his Gestalt contemporaries and attempted a comprehensive approach that ‘would make possible the description and explanation of higher psychological functions in terms acceptable to natural science’ (Vygotsky, 1978). In this he did not succeed fully but according to Cole and Scribner he was the first modern psychologist to suggest the mechanisms by which culture becomes a part of each person’s nature. Interesting is Vygotsky’s refusal to give up his anti-reductionist view on psychology and development in spite of considerable pressure within Russian post-revolutionary psychology. This underlines his independent thinking.

“The refusal to give up the study of higher psychological functions under the challenge of different camps of reductionism was Vygotsky’s credo from the beginning to the end of his intellectual work. He believed, the human psychological functions are organised hierarchically, and each level of that hierarchy may need to be studied in its specifics; hence the emphasis upon ‘analysis into units’ which should retain the relevant characteristics of the phenomenon in its whole (i.e. the analysis into minimal ‘Gestalts’).” (V.d. Veer & Valsiner, 1991, pg. 399)

Working with children in the pedological domain Vygotsky acquired considerable experience with the study of ‘defective’ children. Vygotsky then published and worked in the Pedological Institute in Moscow. Later he formed together with Luria and Leontev the so-called troika in Moscow during which time he developed his cultural-historical theory. He was also a contemporary of Piaget, Freud and the Gestaltists whose thoughts are sometimes reflected in his work but always from his specific and critical frame of mind.

The part that will be dealt with in this small venture into the work of Vygotsky will be his view on learning and the role of playing in child development.
The Social (p)art of Learning

Development according to Vygotsky is partly biological and partly social. Vygotsky very clearly made a distinction between lower psychological processes such as rote (mechanical) learning, trial and error learning, conditionable learning and higher psychological processes such as thinking, reasoning, giving meaning and complex constructions and concepts. The lower processes are mastered step by step and come about by (biological) maturation but the higher psychological processes are for their development dependent upon the ‘teachings’ of the environment and therefore social in nature. They are mediated within the historical context a child lives in and are in that sense contrary to the development of basic lower psychological processes, like learning to walk, which will develop autonomously. Almost every child has to learn the thinking and giving meaning within the context of the sign systems of it’s own culture. This mastery would occur in the process of interaction with the surroundings that the culture provides for.

"Vygotsky argued that the human brain allowed for the processing of different sign systems, each system leading to different higher psychological processes. The sign systems themselves constituted the heritage of each culture and had to be mastered anew by each member of the culture."

(V.d. Veer & Valsiner, 1991, pg. 222)

According to Vygotsky, the learning of complexity in these higher psychological functions starts with overt acts, counting on ones fingers before counting ‘in ones head’, reading aloud before reading silently, tying a knot in the handkerchief before remembering by heart. This means that in order to understand higher psychological processes we do not have to look into the heads of the individuals but more into the sign systems of the culture in which the individual is living. It is the social web that forms and teaches the individuals and makes the development of higher psychological processes possible. As Rijksman referred to it ‘Vygotsky defined thinking primarily in social terms as an inner representation of collective behaviour’ (Rijksman, 1996a).

The Zone of Proximal Development

Vygotsky’s famous concept of the zone of proximal development can be seen as a forwarding shadow of the development of a child and of the ‘results to be’ instead of his actual level of learning that is usually measured in tests of all kinds.

"The level of actual independent development, Vygotsky maintained, was characteristic of the intellectual skills the child had already mastered; it represented the already matured functions, the results of yesterday. However, the performance of children co-operating with more knowledgeable others was characteristic of their future development: it revealed the results of tomorrow."


The zone of proximal development is the learning level that a child has not reached but is able to reach at the present time with the help of a teacher or another significant adult. It is measured by the difference between the actual level of the child and the level it can achieve with help. If this difference is two years of developmental age then the zone of proximal development is two years. Within these two years the child will have
learned to master this level by himself if it is given the opportunity.

“The zone of proximal development of the child is the distance between his actual
development, determined with the help of independently solved tasks, and the level
of the potential development of the child, determined with the help of tasks solved
by the child under the guidance of adults and in co-operation with his more
intelligent partners.” (Vygotsky, 1986, pg. 42)

The concept of the zone of proximal development has not been validated in the sense
of statistical measurements. The original experimental methods Vygotsky used were
not always clearly described for repetition and many of his data were lost or may not
even have been recorded. However, in terms of development the concept of the zone of
proximal development is a promising one as it indicates the results of the future and
stresses the social nature of the learning process.

Playing and Maturation

Play, according to Vygotsky has a very important role in development. Play bridges
the point where a child begins to experience the stress of unrealisable wishes and
resolves these by entering an imaginary, illusionary world. According to Vygotsky
‘imagination is a new psychological process for the child and it represents a specifically
human form of conscious activity.’ (Vygotsky, 1978, pg. 93). He claims that
imagination is not present in the consciousness of the very young child but develops
gradually via imitation and imagination in play. Play is then a leading factor in
development as it so to speak stands between the physically defined world of the very
young children and the free imaginary adult thoughts that can go beyond the real world
at their demand.

“So the child at play operates with meanings derived from their usual objects and
actions. This characterises the transitional nature of play; it is a stage between the
purely situational constraints of early childhood and adult thought, which can be
totally free of real situations.” (Vygotsky, 1978, pg. 98)

Vygotsky does not like the distinction of different forms of play as found in Piaget’s
work. According to him play gradually evolves from pure imitation to imagination but
always contains rules of behaviour although these may not be formulated in advance. In
play the child becomes conscious of these internal rules as everything is acted out
according to them. When the child decides to play ‘bus driver’ the very ‘bus
driversness’ of the situation will become conscious as it is acted out, like the maternal
behaviour once observed by the child will give the rules to the behaviour when playing
‘mother’.

The most important thing in Vygotsky’s view, is the transitional stage playing can
induce in the meaning of objects and in the action itself. In play the object, a chair, does
not indicate what its meaning is, no the meaning becomes the detonator and transforms
two chairs into a bus. The action of jumping up and down does not speak for itself any
more, no the notion of ‘driving on a bumpy road’ determines how the action is to be
understood.
"The primary paradox of play is that the child operates with an alienated meaning in a real situation. The second paradox is that in play she adopts the line of least resistance – she does what she most feels like doing because play is connected with pleasure – and at the same time she learns to follow the line of greatest resistance by subordinating herself to rules and thereby renouncing what she wants, since subjection to rules and renunciation of impulsive action constitute the path to maximum pleasure in play." (Vygotsky, 1978, pg. 99)

Vygotsky holds that 'play creates a zone of proximal development of the child (...) it contains all developmental tendencies in a condensed form and is itself a major source of development.' (1986, pg. 102). The child behaves beyond its average age in play. It lifts itself above habitual behaviour. So play is a major source of development and fosters psychological maturation.

**Education and the Stages of Cultural Development**

One of the main points of Vygotsky’s theory is that through language the child incorporates cultural tools. This implies that the social and cultural surroundings ultimately determine the child’s affective and cognitive processes and development.

Very noteworthy are the conditions that are necessary for the zone of proximal development as far as Vygotsky was referring to it in the educational domain and further effects on learning in other domains. Here Vygotsky comes in as a social reformer and educator and claims that the educational system should make it possible for an individual to reach and enhance its zone of proximal development. So not only the basic indications for level of intelligence based on measurement of static performance should be taken into account. Next to that conditions for learning and teaching would have to be more supportive.

He followed the Gestalt psychologist Koffka (V.d. Veer & Valsiner, 1991, pg 203) in his view that teaching may precede cognitive development, promote it and create new cognitive structures. In a sense this was for Vygotsky an application and confirmation for his insight on the zone of proximal development.

**Analogies for Innovative Teams**

The following concepts of Vygotsky are considered to be of interest for concepts on the relational-process level of innovative teams.

**Role of playing:** Playing is an important link in the maturational process. Making an analogy for teams and their development this means that the group develops into a more mature unit through play. New meanings are formed in play and steps out of the standard patterns come about by it. To repeat Vygotsky’s words: ‘Playing creates a zone of proximal development and is a major source of development itself.’ (Vygotsky, 1986 orig. 1934, pg 102)

**Supportive environment for teaching and development:** In the sense of Vygotsky by analogy a supportive environment is needed for innovative teams in order to develop their potential and in order to sustain this development toward an accepted output.
This is close to the conditions for the following concept of the zone of proximal
development.

Zone of proximal development: What is possible in the potential of the team if the team
members are supported and lifted up by more ‘knowledgeable others’. This could be a
supportive environment, leader or group members who would help each other reach the
higher potential that the zone of proximal development indicates.

3.2.2 Jean Piaget and the Role of Playing in Cognitive Development

Jean Piaget born in 1986 in Neuchatel started working in a psychiatric, clinical setting
after he had completed his doctorate in biology and acknowledged his high interest in
philosophy. Learning about psychoanalytic theory in Bleuler’s clinic in Zürich and
later through his clinical work at the Salpetriere hospital in Paris, Piaget learned the
clinical interviewing techniques that would later form the foundation for his unique
research methods.

In Paris he accepted work as an assistant of Binet to standardise a British intelligence
test into a French version. One of the anecdotes is that his attention was captured more
by the patterns that evolved from the ‘mistakes’ children made when doing Binet’s
tests than by the actual measurement of the children’s data to compute their
intelligence quotient. His interest in the development of intelligence was growing.

When Clarapade, the director of the institute Jean-Jacques Rousseau in Geneva, offered
Piaget the post of director of research at the institute he gave him the opportunity to
start with formal research in children’s thought. Only then did Piaget, biologist and
philosopher with no formal training in psychology, begin his career in the field of
developmental psychology.

Piaget developed what he called genetic epistemology. It combines the study of
biological contributions to intelligence with the theoretical study of knowledge. This
interdisciplinary approach of the problem of development through the study of
psychology, philosophy, logic, mathematics, biology, and physics is not merely
concerned with childhood, but also with development into adulthood. In 1952 Piaget
was appointed Professor of Genetic Psychology at the Sorbonne.

In his research Piaget was not so much interested in whether the child is right or wrong
but more in how it thinks and what kind of reasoning it uses through the stages of its
development. Reasoning according to Piaget lies at the centre of intelligence. Thus
Piaget’s theory focuses on cognitive processes such as perceiving, reasoning,
remembering, believing and on cognitive development. The emotions and the symbolic
functions are granted their share but they are much in the service of the development of
the cognitive functions and intelligence. Piaget’s research was not based on statistical
measurements but on a highly imaginative, phenomenological interview method with
children themselves from whence the theories were deduced. His acute observational
abilities were at the basis of this work.
In this chapter the description of Piaget's theory is restricted to the concept of adaptation and Piaget's notion of play and imitation in the development toward full operational intelligence. Focal point is the changing role of play and imitation in cognitive development.

**The Concept of Adaptation**

According to Piaget very young children start constructing their reality through the interaction with their surroundings, in particular with people and objects on a physical level. The child learns by doing: 'the thinking child as a product of its movement' (Rijsman, 1996a). From this construction of the physical world in time the child develops an internal representation through a process which Piaget called adaptation.

This central concept in Piaget's theory, occurs by balancing two complementary processes: assimilation and accommodation. Assimilation means fitting information and experiences from the environment into ones own notions about the world, accommodation means adjusting to the new experiences by revising present frames and views of the world.

"It must be borne in mind that the two notions of assimilation and accommodation are purely functional in character (borrowed from biology). The structures to which they correspond, i.e. the organs which perform these functions, can in principle be entirely arbitrary, since the two functional invariants are at work throughout the whole evolution."

(Piaget, 1962, pg. 275)

Piaget claims that when accommodation and assimilation are in a well balanced equilibrium then intelligent activity is the result. Yet this equilibrium between assimilation and accommodation is not readily attained. In development one will often have primacy over the other. When assimilation outweighs accommodation, as in a child’s game where materials are used to represent objects that are not present: a stick becomes a horse, a piece of clay is a jewellery. In this case thought is egocentric and highly personal. When accommodation prevails over assimilation, when a child faithfully reproduces the movements of objects or persons: singing with an adult, clapping hands. In this case thought becomes imitation (see also figure 3.1).

Piaget calls the balancing between these two processes equilibration. Intelligence is thus the individual's ability to learn in a changing environment through continuous reorganisation of experience in his head by the process of balance between assimilation and accommodation.

This development from very young child to adult passes through different stages. Once the last stage, operational intelligence as Piaget calls it, is achieved its cognitive characteristic is reversibility which means conservation of objects and concepts.

"Reversibility is, in fact, the possibility of retrieving an earlier state of the data, which is not inconsistent with its present state (assimilation) and is as real or as realisable as that present state (accommodation). It is this mobile, reversible equilibrium that ensures the conservation of concepts and judgements, and that governs both the correspondence of operations between individuals (social exchange of thought) and the interior conceptual system of the individual himself."

(Piaget, 1962, pg. 240)
Conservation thus means the ability to see that inherent qualities of objects do not change in spite of different outward physical appearances. In this context Piaget designed some very famous experiments with conservation of concepts like volume and length. When conservation is fully achieved, the world of the individual is not subject to change by visually different perceptions but has a constant and stabilised inner representation of concepts and judgements.

**The Role of Playing and Imitation in Development**

Piaget gives playing and imitation its own role in the process of adaptation. According to him playing and imitation are the processes of assimilative and accomodative behaviour through which the child learns to think on increasingly more complex levels. In his book ‘Play, dreams and imitation in childhood’ one of Piaget’s theses is that

> “in the field of play and imitation it is possible to trace the transition from sensory-motor assimilation and accommodation to the mental assimilation and accommodation which characterises the beginnings of representation. (...) Thus in this, as in the earlier stage it is the general relationship between assimilation and accommodation that determines both the relationship between play, imitation and adapted thought, and also the specific forms taken by adapted thought when equilibrium has been achieved.”

(Piaget, 1962, pg. 273, pg. 287)

The child passes from the period of sensory-motor activity through a period of egocentric representative activity to finally the period of operational activity where the representation is in the service of intelligence. In figure 3.1. the periods in which this continuous development takes place are visualised. They are summarised in the following paragraphs.

**Three Periods of Development**

*First period: Sensory-motor activity*

Learning on a sensory-motor level occurs after the reflex stage from the moment of birth to the age of four years. From the very beginning of sensory motor activity the dual process of assimilation and accommodation enables the child to form what Piaget called schema: sequences of behaviour. These elementary physical behavioural sequences, like grasping, shaking an object, moving, sitting up, can be repeated or modified in new situations.

Accommodative behaviour would in this stage be the repetition and imitation of movements (clapping hands) whereas modification of positions or new try-outs of external movements (clapping objects) coming forth from the child’s own subjective view would be assimilative behaviour.

Equilibrium in this stage comprises sensory-motor intelligence. The child can use and combine assimilative and accomodative behaviour in order to achieve what is wanted. Sitting up and for the first time trying to grasp a moving object (assimilation) but also co-ordinating its movements as the eyes follow the wanted but moving object and displacing the hand in order to reach it (accommodation). After several aborted
attempts this complicated behavioural sequence is mastered and the child is one step further in his development.

**Figure 3.1: Play, Dreams and Imitation in Childhood (Piaget, 1962, pg. 1)**

The most profound changes happen in the next stage at the beginning of what Piaget calls 'representative activity'.

**Second Period: Egocentric representative activity**

Preconceptual thought and intuitive thought occur from the age of four to seven years. Representation means that internal images have been formed of the outside world and can be evoked at will in the representative stage. An absent object and its meaning can be called to the mind.

In Piaget's terminology: representation is differentiation and co-ordination of 'signifiers' and 'signified'. 'Signifiers' come through the process of imitation and the mental image and are derived from it. The 'signified', the meaning of the symbols, come by way of assimilation which is the dominating factor in play. When equilibrium is reached, the preconcepts, the first phase of verbal and symbolic thought, come to life. This heralds the new function the child is grasping which is far reaching mentally but also far reaching in terms of communication. Piaget calls it the 'symbolic function'.

"It is this [symbolic] function that makes possible the acquisition of language or collective 'signs', but its range is much wider, since it also embraces 'symbols' as
distinct from 'signs', i.e. the images that intervene in the development of imitation, play and even cognitive representations. (...) The symbolic function is thus essential for the constitution of representative space as well as of the other 'real' categories of thought.”

(Piaget, 1962, pg. 278)

In this period the primacy of assimilation over accommodation results in symbolic play: the table is our ship, the carpet the ocean and we will drown if we tread on it. The primacy of accommodation over assimilation results in representative imitation: brush your teeth like grandpa does.

Here again progressive equilibrium between assimilation and accommodation results in the reversibility which characterises the operations of reason. However, the schemas of sensory motor-intelligence are not at once transformed into general concepts nor is coordination at once transformed into operational reasoning. In the preconceptual and intuitive phase thinking should be interpreted in relation to development of representation. It is here still in an intermediary phase. Representation still fluctuates between egocentric play and indiscriminate imitation.

"In intuitive thought the difference between this intuitive figure and the image of the previous stage is that it is a complex structure, a configuration, and not merely a simple individual image. (...) Still lacking is complete freedom from the image, and accommodation of thought not only to static configurations but to their possible transformations.”

(Piaget, 1962, pg. 287)

In further development imitation and play are integrated in intelligence. Imitation is integrated by becoming more deliberate, play is integrated by becoming constructive. On the operational level both now have a character of reversibility.

**Third Period: Operational representative activity**

In the third period of operation assimilation and accommodation reach permanent equilibrium. This period occurs in the seventh to eighth year for concrete operations which go parallel with the real integration of play and imitation in intelligence. For the ages eleven to twelve it goes parallel with the ending of symbolic play.

In this third period imitation now becomes reflective in the service of the ends pursued by intelligence. At the end of the egocentric period, the child is able to resist suggestion and keep to his own opinion: 'decentration' sets in.

From the seventh or eight's year on symbolic play tends to progressively equate the symbol to the reality that is symbolised. The symbol grows more to be an image as can be seen in the change from symbolic to constructional games. This implies by no means a decrease of creative imagination in the life of the individual. On the contrary, creative imagination thus does not diminish but becomes gradually integrated with intelligence which is broadened by it correspondingly.

The last period of formal operating which sets in from the twelfth to the sixteen's year deals with the present and future situations. At the end of this period the child can use formal operational thought, think about the future, argue in the abstract and the hypothetical. This last stage of Piaget coincides with the beginning of adolescence and the start of the full dealings of life with fully equipped faculties.
Looking back it is in play that rehearsal and testing are developed which later become the private fantasy life of the adult.

Although many of his theories have been disputed the main points of Piaget’s legacy still stand as was also acknowledged during the congress ‘Penser le Temps’ in memory of his 100th birthday in Neuchatel 1996 (referring ‘Communications’ of the Conference Penser le Temps, 1996).

**Analogies for Innovative Teams**

The following concepts of Piaget are considered to be of interest for the relational-process level of innovative teams:

*The role of playing in cognitive development:* In every intelligent development play and imitation have their roles; in adult life the fantasy world is at the adult’s free disposal. The symbolic function, as Piaget delineates it, gives us freedom to fantasise but also to translate newly found and enriching symbols to reality. By analogy playing also enhances this world for adult individuals and teams and makes it possible to generate richer images and symbols.

*Concept of adaptation:* The analogy made here is that adaptation as a process of learning occurring both in adult life and in group life. According to Piaget, learning seen as adaptation is a continuing process of balance between ‘absorbing the world’ into ones own ideas and viewpoints (assimilation) and adjusting oneself to the existing viewpoints of ‘the world’ (accommodation). As so much emphasis is laid in our present world on life-long learning, learning might be reconsidered in the viewpoint of adaptation as defined by Piaget.

*Sequential stages of development:* This is about the much disputed idea that stages of development are sequential and dependent upon each other. After psychomotor skills the symbolic function is growing and developing via the process of equilibration. So after the completion of one stage the next one will follow. By analogy the development of innovative teams would proceed in stages with swings from accommodation to assimilation and back again.

**3.2.3 Social Genetic Constructivism; the Social Role in Learning**

Rijksman in an overview of Piaget’s life and influence states that till recently Piaget and most cognitive psychologists had not worked with the ‘social development of intelligence with children [and] the fundamentally social dimension of human knowledge and knowing.’ (Rijksman, 1996a)

This new viewpoint of primarily social interpretation of human knowledge came much to the foreground in the last decades. From 1976 on a group of scientists developed systematic empirical investigations on learning in the school of Social Genetic Constructivism residing in Neuchatel and Geneva. Their research is bound to the spirit of Piaget but in a new (social) phase of its development. A range of classical experiments from Piaget about the conservation of objects are used to explore the world of the social. They were done on the basis of precise and acute phenomenological
observations which certainly breathed the original spirit of Piaget and his research. But considerable changes of Piaget’s theories can be observed in the research perspectives on the social role in learning. The scientists who work ‘in the footsteps’ of Piaget clearly noted a point to be explored here.

Doise for example states in 1985 that ‘in essence individual cognitive action is but one moment of a complex process which is also of social nature.’ (Doise, 1985. pg. 297)

This change from a mostly cognitive focus to the social role in intelligence is also strongly advocated by Perret-Clermont who points toward the dangers of ignoring the role of the social situation

“The search for universally valid explanations - often leads to a failure to analyse the structuring effects of the concrete object’s and partner’s specific characteristics, to which the individual adapts his behaviour. There is a severe risk, then, to consider erroneously as general processes, phenomena which might be more accurately envisaged as artefacts of particular social situations.”

(Perret-Clermont & Brossard, 1985, pg. 310)

In this section of the thesis examples will be given that are relevant to this line of research and thought. This exemplary way of description has no pretension to be exhaustive but wishes to focus on basic concepts that are of interest within the boundaries of this literature survey and research question.

The Interindividual Dimension of Development and Learning

In psychology the term development is often used to refer to self-propelling changes in the person that show a biological maturation as much as a comparable psychological maturation. Development signals the emergence of new stages or structures in thinking in ‘the construction of capacities to give adequately contextualized and socially acceptable responses’ (Perret-Clermont, 1993, pg. 198). This is in contrast with the concept of learning, which in a strict sense is seen only as the acquisition and accumulation of knowledge.

The Social Constructivist school finds that learning as much as development are dependent on processes that have an interindividual dimension throughout. They see learning, where knowledge exists prior to the situation, as being transmitted by agents of the cultural system, that is teachers, parents and elders. As far as cognitive development is concerned they come close to the view of Vygotsky in seeing this as a result of social transactions and of interpersonal debates both dependent on the use of language as a mediator.

A Changed Frame of Research

Summarising research on learning and development Perret-Clermont (1991) describes a shift in insight which moves from a context-free kind of psychological research to one where social context is made the principal subject of study.

A first generation of studies was done in a school setting with the aim to find out how social factors affect cognitive performance and how social resources would be used to
solve given problems. The researchers asserted that the meaning of these social factors would never be absolute but would be interpreted by the children in accordance with earlier experience and their own wishes about what to get out of the encounter. As Perret-Clermont describes it:

“The meaning is conveyed by the setting, the institutional framework in which the encounter takes place, the participants’ dialogue and attitudes, their sense of social identity, the objects manipulated, and the type of interpersonal relationship established. (...) The subjects’ initial interpretation is apt to be modified in the course of the interactions in response to the interlocuter’s reactions.”

(Perret-Clermont, Perret & Bell, 1991, pg. 58)

What was found was that even for cognitive tasks, the children always displayed behaviours that had concurrent cognitive and social meanings. The researchers discovered that the struggle for the children was not so much the difficulty of the cognitive task as they had assumed in their hypothesis, but far more often the difficulty to make sense out of the situation and give meaning to the person and the task involved. Only after this sense making had taken place the task would be taken up according to the perceived demands made by the researcher. The researchers were also struck by the large gap between their understanding of what was occurring and their subjects’ understanding of these same situations.

This introduced a second generation of research. Now social interactions were to be examined by themselves. They were the ‘vehicle mediating the transmission of meaning from the person who defines the problems and demands cognitive performances to the person who tries (or not) to comply with these demands.’ (Perret-Clermont, Perret & Bell, 1991, pg. 44). And again many misunderstandings were reported between researchers and researched as to the meaning of the situation. Perret-Clermont, Perret & Bell concluded that social factors appear to be intrinsic parts of the process by which a person creates meaning instead of external independent variables as was often assumed in earlier research. The researchers pose some piercing questions as to the validity of a context-free psychology in the face of their findings.

Perret-Clermont, Perret and Bell claim that ‘intelligence can be characterised as a form of sociability’ (Perret-Clermont, Perret & Bell, 1991). What is seen as a measurement of intelligence in their new view is an interpersonal creation of meaning whereby identity, status and role definition are as much at stake as the cognitive solution of the tasks given. So it is social knowledge and skills, next to the solving of tasks and the monitoring of the interactions with interactive strategies that is needed for children and indeed for any person. By this new method of research it was found that children from different background, demographic and in social stratification were disadvantaged, no matter how ‘objective’ the researchers tried to be, as they were not familiar with the social setting of psychological tests. Again some critical points are made whether this would only pertain to psychological questions or to the whole array of assessments used in educational settings.

A word of caution might be needed here as far as this new perspective is concerned. The Social Constructivist School does not trade the idea of developmental age for a ‘proper’ situational context pertaining the development of intelligence. In the tradition
of Piaget they still see age trends and sociocognitive prerequisites as necessary conditions for performance, but they opened the way

"for further research on the creation and transmission of meanings and knowledge in social interaction, the establishment of interpersonal relationships, the elaboration of intersubjectivity, and the construction of context. All these processes play an integral part in development, and their examination could contribute to a better understanding of the articulation of children’s sociocognitive competencies in interaction."

(Perret-Clermont, Perret & Bell, 1991, pg. 55)

**Intersubjectivity and Intersubjective Space**

Grossen and Perret-Clermont (1994) suggest a new concept of ‘intersubjectivity’ and claim that this covers the content of known phenomena as much as their newly described processes. This contribution is in a way a new start as they leave behind the viewpoint that adults decide on the normative definitions of the meaning and the solution of a given task in test situations with children. Grossen and Perret-Clermont describe new methodological approaches, that allow for the observation of social and cognitive processes occurring in subjects in a classical test situation. They show that the activity of an individual child is the product of the interaction between its understanding of the situation and the understanding of its adult partner. According to the researchers this understanding emerges on the basis of socio-cognitive processes that are the result of a ‘more or less negotiated intersubjectivity between the child and the adult’ (Grossen & Perret-Clermont, 1994, pg. 245). The social context is therefore called the intersubjective space. It does not fully fill the atmosphere of the researcher nor fully fill the atmosphere of the subject. It is in this space, that the child produces its answers which although always dependent on earlier skills and knowledge, are an original creation forthcoming from this encounter. Therefore it is very difficult to decide whether the cognitive capacities of the child are individual characteristics. It appears that they are the fruit of a social construction, the result of which is neither fully dependent on the subject nor fully dependent on the researcher.

Recent research (Doise, 1985; Perret-Clermont, Perret & Bell, 1991) in this field is not only concentrated on the effect of interaction sessions between children and their individual performances. The studies also focus on the problem solving strategies children use and on the specified modalities of the interaction between children. It appears, that more individual gain is reached if, during the interaction, the children cooperate on an equal basis by trying to understand each other’s viewpoints.

Concluding Grossen and Perret-Clermont propose that it is not sufficient to observe children as isolated units of analysis to understand and interpret the cognitive activities of children. On the contrary it is necessary to include the interaction between the individual child and the social actors it meets. They propose that this interaction takes place in an ‘intersubjective space’ (Grossen & Perret-Clermont, 1994, pg. 255).
Conflicts and Intersubjectivity

How is the concept of intersubjectivity related to socio-cognitive conflicts? A socio-cognitive conflict is not so much a manifest quarrel, but more an internal tension or conflict coming forth from a needed 'internal reorganisation' of representations to make sense again of the world. These kind of conflicts are important, they are a chance to learn creatively or from someone who has representations that fit better. Knowledge grows and develops through dealing with socio-cognitive conflicts. This goes for internal conflict within the person as much as for external conflicts with others. Doise (1985) speaks about handling conflicts that lead to transformation instead of compliance where conflicts are evaded.

In order not to end up fighting it is necessary, if the socio-cognitive conflict is to end positively, to create social conditions between the children that help them understand each other's points of view and create intersubjectivity. On the other hand it is necessary that this intersubjectivity is destroyed by phases of socio-cognitive conflict to develop new insights and skills. The socio-cognitive conflict and the negotiation for intersubjectivity appear to be two complementary processes, that allow for the development of new competencies.

The social constructivist school makes it clear that the understanding of the social environment is crucial in being able to display intelligence, in fact they indicate that this capacity is actually part of intelligence.

Analogies for Innovative Teams

The following concepts of the Social Constructivists are considered to be of interest for concepts on the relational-process level of innovative teams:

The important role of 'the social' in development: The way social context is understood is very important in the use of cognitive abilities. Extrapolated from that towards adult life this will mean that insight in social context is an important denominator in understanding and in performance (applied intelligence). An analogy for innovative teams is, that the understanding of the team members of their social context (i.e. the organisational culture, the power structure, conventions for communication and influence) provide the conditions and possibilities for their functioning.

The positive role of socio-cognitive conflict in development: An analogy is the question whether the team and its leader tolerate the doubts, the destruction of concepts, and the questioning coming with socio-cognitive conflicts of the individuals. This will foster and develop independent thinking in the members of innovative teams. It will also result in the transformation of inner views and not in compliance. Thus development can happen instead of the kind of learning that is nothing more but the accumulation of knowledge.

The intersubjective space: Grossen and Perret-Clermont defined an intersubjective space as the social context in which persons interact with each other and give meaning (Grossen & Perret-Clermont, 1994). It denotes a negotiated understanding about the interpretation of whatever happens in that space. If the occurrence of competence and
capacities are the fruits of the social constructions of the ones present, it analogously can also be said that innovative team members need a negotiated understanding, an intersubjective space, in order to achieve optimal output.

3.3 Playing and Creativity in Emotional Development and Maturation

Psychoanalysis and its later developments is known as one of the grand theories dealing with emotional development and its disturbances. The work of two post-Freudian theorists, Erikson and Winnicott is selected to represent the domain concerning the issue of the development of creativity in human beings.

Erikson is a well known psychoanalyst associated with ego-psychology, that is the development of ego and ego strength as a basis for growth and adaptation. The reason for choosing his theory is that it covers development from childhood to old age and deals with health as much as with disorder.

The reason for choosing Winnicott is his intense occupation with the importance of playing in the development of creativity and of a healthy person. Winnicott is associated with the object-relation theory. The term ‘object’, as Karl Abraham introduced it, means the persons(s) or his (their) inner representative(s) with whom the subject is intensely concerned with emotionally.

It should be noted that the group perspective of psychoanalysis mainly developed by Bion (1964) and the Tavistock Institute (1994) will be taken into account in the next chapter on group dynamics.

3.3.1 Erik Erikson: A Theory of Psychosocial Development

Contrary to many other psychodynamic theories the psychosocial theory of Erikson (1982) deals with the development of the healthy personality with little emphasis on the dysfunctions of a person. Next to psychoanalysis Erikson’s theory is strongly influenced by his interest in cultural anthropology. Together with his wife, an artist and teacher he based many of his observations on anthropological data and researched quite extensively the life of the native Americans in his new found country (Erikson, 1964).

Having escaped the terrors of the second world war in Nazi Germany he gave high weight to questions of ethics and a better world.

Like other ego-psychologists Erikson concentrated his efforts for a great deal on the early stages of childhood. But he certainly has done his share in focusing interest on the processes of adolescence, and on the help which adolescents often need. His theory on the psychosocial life stages has set into existence and covered the whole life cycle of a person, which gives a valuable insight into the maturational processes and emotional crises of adult life.

Contrary to other presentations of Erikson’s theory (Erikson, 1959, 1964, 1968, 1982), the emphasis in the overview presented in this thesis is put on the balance between the dynamics of different life stages. The theory of the psychosocial stages evolved in collaboration with his wife Joan Erikson and the version presented here
integrates her insights from her experiences as an artist and a teacher (J. Erikson, 1988) with Erikson's life stage theory. Incidentally this version of the theory also echoes the concept of equilibration of Piaget (1951) as described in paragraph 3.2.3 of this chapter.

The Theory of Psychosocial Life Stages

The main point in Erikson's theory is his claim that one has to discern different psychosocial life stages. A crisis is needed to move from one stage to the next in the life cycle of an individual. The most well known of these crises is the identity crisis between the stages of youth and young adulthood (Erikson, 1968).

Erikson bases his theory on the assumption of the existence of developmental crises. He uses this word in the medical sense, meaning a turning point for better or for worse, a crucial period in which a decisive turn one way or another is unavoidable.

In the following section the developmental stages and the dynamics of the crises will be described.

Dynamics of the Life Stages

Hope, Will and Purpose are the strengths of development in childhood. Fidelity will emerge in adolescence and Love, Care and Wisdom are the central strengths of adulthood. These strengths, which Erikson calls virtues, do depend on each other. Thus Will cannot fully develop until Hope is secure, and Love needs the trustworthiness developed in Fidelity to become reciprocal.

The one central strength that every life stage refers to as being in crisis, is shown in table 3.1. Although not shown, the other strengths are also present either in a rudimentary form for the stages to come or clearly profiled by the way the crisis developed in the earlier stages. As Erikson reminds us, not every crisis in a life-cycle passes very noiseily but every crisis revives a memory and the conflicts of all the former ones and provides a basis for all the ones to come.

In her book In Defence of the Dystonic, Joan Erikson (J. Erikson, 1988, pg. 115) elucidates the dynamics of the different tendencies in a crisis. She argues not to overestimate the bright tendencies during a life crisis and to see these as wished achievements to be. Instead a balance between light and dark tendencies should be looked for as a basis for the resolution of this crisis. Both Eriksons call the light tendencies syntonic and the dark tendencies dystonic. Joan Erikson elaborates that each tendency can be overstretched, the syntonic one into maladaptation and the dystonic one into malignancy. The psychodynamic stance here is that these internal balances are never fixed and have to be renewed over and over again.
<table>
<thead>
<tr>
<th>Old age</th>
<th>Integrity vs. Despair</th>
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<tbody>
<tr>
<td>VIII</td>
<td>WISDOM</td>
</tr>
<tr>
<td>Adulthood</td>
<td>Generativity vs. Stagnat. CARE</td>
</tr>
<tr>
<td>VII</td>
<td>Intimacy vs. Isolation</td>
</tr>
<tr>
<td>Young Adulthood</td>
<td>LOVE</td>
</tr>
<tr>
<td>VI</td>
<td>Identity vs. role confusion</td>
</tr>
<tr>
<td>Adolescence</td>
<td>FIDELITY</td>
</tr>
<tr>
<td>V</td>
<td>Industry vs. Inferiority</td>
</tr>
<tr>
<td>School Age</td>
<td>COMPET</td>
</tr>
<tr>
<td>IV</td>
<td>Initiative vs. Guilt</td>
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<tr>
<td>Play Age</td>
<td>PURPOSE</td>
</tr>
<tr>
<td>III</td>
<td>Autonomy vs. shame.</td>
</tr>
<tr>
<td>Early Childhood</td>
<td>WILL</td>
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<tr>
<td>II</td>
<td>Basic Trust vs. Mistrust</td>
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<tr>
<td>Infancy</td>
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Table 3.1: Psychosocial Crises (Erikson, 1982, pg. 56)

This version of the theory has considerable psychodynamic depth by showing that both tendencies in a strength have a shadow side when overextended. In the following part the psychosocial stages are elucidated by short descriptions of the balance between the two tendencies of every strength. The account and the figures are based on both Eriksons husband and wife, as they complement each other (E. Erikson, 1982, pg. 56; J. Erikson, 1988; pg. 115-125). Links to other authors are added when of interest.
Infancy: Hope

“Hope is the enduring belief in the attainability of fervent wishes.”

(Erikson, 1964, pg. 118)

Erikson poses that hope is the basic level of psychic survival; hope is what sustains life when trust is impaired. In his view an ‘enduring pattern of basic trust over basic mistrust’ (Erikson, 1964) has to be established in the healthy personality. This pattern can be seen as a balance between appropriate trust as much as appropriate mistrust in order to attain the strength of Hope.

Too much trust can end in disaster like driving in the car with a drunken driver on a busy highway. Evidently too much mistrust can impair the child in making contact and end in his withdrawal when reaching out would be needed.

<table>
<thead>
<tr>
<th>maladaptive tendency</th>
<th>Strength</th>
<th>malignant tendency</th>
</tr>
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<tbody>
<tr>
<td>Sensory</td>
<td>Basic Trust</td>
<td>Basic Mistrust</td>
</tr>
<tr>
<td>Maladaption</td>
<td>Withdrawal</td>
<td></td>
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</tbody>
</table>

Figure 3.2: Hope: a Balance between Basic Trust and Basic Mistrust (J. Erikson, 1988, pg. 115)

Early Childhood: Will

“Will is the unbroken determination to exercise free choice as well as self-restraint.”

(Erikson, 1964, pg. 118)

The balance between autonomy versus shame and doubt seems much in favour of autonomy in a western world where freedom of the individual is claimed to be one of the highest goods.

Yet, too much belief in ones free will may end up in a demonstration of lack of internal restraints and inability to see anything else but the own person. The feeling of humility that shame and doubt give are often referred to as the condition necessary to learn and to develop wisdom. On the other hand too early or too stern shaming by parents or educators might frighten the child into transforming its own growing autonomy by compulsively following the rules that he has been told or has internalised.

<table>
<thead>
<tr>
<th>maladaptive tendency</th>
<th>Strength</th>
<th>malignant tendency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shamelessness</td>
<td>Autonomy</td>
<td>Shame and Compulsion</td>
</tr>
<tr>
<td>Wilfulness</td>
<td></td>
<td>Doubt</td>
</tr>
</tbody>
</table>

Figure 3.3: Will: a Balance between Autonomy and Shame/Doubt (J. Erikson, 1988, pg. 116)
**Play Age: Purpose**

"Purpose is the courage to envisage and pursue valued goals."

(Erikson 1964, pg. 118).

In the third stage play, imagination and creativity come to life by initiative. The feeling of guilt indicates that there are social limits. One is not alone in the world and all imagination and play can only be creatively productive if one ‘learns to bow to the universal demands of form and community’ (J. Erikson, 1988, pg.119).

The extremes here lie in the ruthlessness of the criminal and the guilt ridden inhibition of the child that has given up and lost the initiative for any exuberance or play. The balance is one of achieving something that does not exist yet within the ethical and moral values one adheres to.

<table>
<thead>
<tr>
<th>Maladaptive Tendency</th>
<th>Strength</th>
<th>Malignant Tendency</th>
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</thead>
<tbody>
<tr>
<td>Purpose</td>
<td></td>
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<tr>
<td>Ruthlessness &lt;--&gt; Initiative versus Guilt &lt;--&gt; Inhibition</td>
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</tr>
</tbody>
</table>

*Figure 3.4: Purpose; a Balance between Initiative and Guilt (J. Erikson, 1988, pg. 118)*

**School Age: Competence**

"Competence is the free exercise of dexterity in intelligence in the completion of tasks."

(Erikson 1964, pg. 118).

Competence is ‘applied intelligence’ as Handy (1994) calls it. It is a strength much wanted in a fast moving and very competitive world. It is achieved through industry which gives the mandatory discipline for growth, but is has to be adequately tempered by a realistic appraisal of one’s own inferiorities and by the ability to recognise excellence in others.

Too much focusing on ones inadequacy may bring about the inertia of the ones who are overcome by their feelings of inferiority. Too much focusing on the development of a child’s industriousness may create ‘working machines’ with a virtuosity that is one-sided and narrow minded.

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<thead>
<tr>
<th>Maladaptive Tendency</th>
<th>Strength</th>
<th>Malignant Tendency</th>
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<tbody>
<tr>
<td>Competence</td>
<td></td>
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<tr>
<td>Narrow &lt;--&gt; Industry versus Inferiority &lt;--&gt; Inertial</td>
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*Figure 3.5: Competence; a Balance between Industry and Inferiority (J. Erikson, 1988, pg. 119)*
Adolescence: Fidelity

“Fidelity is the ability to sustain loyalties freely pledged in spite of the inevitable contradictions of value systems.” (Erikson, 1964, pg. 118)

Adolescence is the most known of Erikson’s life stages as it focuses on what is now often called the identity crisis. The challenge here is to find this fidelity to oneself as a basis for trueness to any other person in the future. Fidelity is ‘the cornerstone of identity’ (Erikson, 1964, pg.125).

Yet there is a danger in fixing one’s identity too early as much as there is a danger never to choose a committed role identity. In present days and in the forthcoming 21st century a too closed identity can leave a person in fixed behaviour and ideological roles that might not be the best way to live and survive in a fast changing world. On the other hand too much and too long role confusion without any choice of committed identification may result in a rejection of all roles and a person adjusting only to circumstance without being able to commit.

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<tr>
<th>maladaptive tendency</th>
<th>Strength</th>
<th>malignant tendency</th>
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<tbody>
<tr>
<td>Fanaticism</td>
<td>Identity</td>
<td>versus Role Confusion</td>
</tr>
</tbody>
</table>

*Figure 3.6: Fidelity: a Balance between Identity and Role Confusion (J. Erikson, 1988, pg. 121)*

Young adulthood: Love

“Love then is mutuality of devotion forever subduing the antagonisms inherent in divided function.” (Erikson, 1964, pg. 129).

The famous answer of Freud on what a sane person should do well was: ‘Lieben und Arbeiten’. Note that Love is given the first place by the father of psychoanalysis.

But in many circles Love is often equated with intimacy with one other person as a sign of a fulfilled life and a healthy personality. And indeed, real intimacy with a loved one can restore many developmental damages and bring a person to further growth. Complementary to this view the psychoanalyst Anthony Storr in his book ‘The School of Genius’ (1996) has taken a stance for isolation in the service of creativity. He refers to the life of many geniuses whose personal life was far away from fulfilled intimacy and strongly suggests that being alone for considerable time is a condition to unfold ones creativity. Half a decade earlier the writer Virginia Woolf pleaded the same in her book ‘A room of ones own’ (Woolf, 1928). On the other hand too much of this might result in a ‘splendid isolation’ where no other is ever invited and life is excluded. When used appropriately isolation can be the balance for the promiscuous tendencies that too many intimate relations invite.
**Adulthood: Care**

"Care is the widening concern for what has been generated by love, necessity or accident." (Erikson, 1964, pg. 130)

For most persons this is the longest stage of their life. It ranges from maybe their twenties up to their sixties after which a third phase of life (Handy, 1994) sets in. The care for the children but also the care for the generated work, and the influence on society and environment is what adulthood contains. Generativity means caring for all that one created and creating new things to care for. Stagnation means not creating anything and not being challenged to grow through the care for it. If life and growth are its contraries how can stagnation ever help to support Care?

When generating more than one is able to care for, temporary stagnation would be a solace. Temporary withdrawal is needed to fill the well again that is giving so generously but sometimes just finds itself empty. The dystonic tendency is in a way the reality principle warning not to go too far to prevent the strength from turning into a weakness. Again a balance is sought where generativity can come into an enduring pattern without disclaiming the place of stagnation as a stabilising factor.

**Old age: Wisdom**

"Wisdom is detached concern with life itself, in the face of death itself." (Erikson, 1964, pg.133)

Integrity versus despair are the polarities of the last crisis, the crisis of Wisdom. Wisdom is on the one hand the knowledge that integrity of experience and an integrated heritage are needed for the coming generations. On the other hand Wisdom means to be able to endure the despair that cannot be avoided in the face of what humankind and ones own life shows as failures and disappointments. If this realistic tendency of despair is not given its due, presumption and arrogance might be the outcome, loosing the brightness of a realistic vision by not being able to see the shadows. The other tendency of disgust and disdain, succumbing to darkness and not being able to see the
light, will bring an elderly person far away from that quality of wisdom that is the challenge of this last stage of life.

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<tr>
<th>maladaptive tendency</th>
<th>Strength</th>
<th>malignant tendency</th>
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<tbody>
<tr>
<td>Presumption --&gt;&lt;-&gt;&lt;</td>
<td>Integrity</td>
<td>versus Despair --&gt;-&gt;-&gt;-&gt; Disdain</td>
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</tbody>
</table>

Figure 3.9: Wisdom; a Balance between Integrity and Despair (J. Erikson, 1988, pg. 125)

**Analogies for Innovative Teams**

The following concepts of the theory of Erikson are considered to be of interest for concepts of the relational-process level of innovative teams:

*Developmental stages of a mentally balanced person:* Erikson’s theory claims that every person passes through the life stages, so this goes for all team members as well. One might want to look also in particular at the leader who will face the challenge of Generativity, Care and Wisdom not only as a team member but also as a guide of the team. The crises the leader has overcome and the “strengths” and maturity he or she has gained might be of vital importance not only to this person but also to the fulfilment of the task of the innovative team.

*Crisis between the stages:* Analogy for teams is that like a person a team might have to move from one stage to the next stage through a crisis. In Erikson’s view a crisis means a turning point for better or for worse. It is interesting to speculate, whether there are crises, that is turning points in the development of a team that denote the transformation of one stage of development to the next.

*Basic Trust and Finding Balance in Crisis:* Not every crisis passes very explosive, yet every crisis revives a memory and the conflicts of the former and builds on them all back to the first strength of Hope. Creating an analogy between the stages of development of an individual and the stages of development of a team the very first strength: Hope might be a particularly important basis. The group might have to cherish hope, ‘this enduring pattern of trust over mistrust’ (Erikson, 1981), to ensure viability and to pass through all it’s other stages of development.

**3.3.2 Donald Winnicott: Playing and Creativity**

Donald W. Winnicott came to psychoanalysis from paediatrics. He was a contemporary of Anna Freud and Melanie Klein whom he both knew well. As a psychoanalyst and child psychiatrist Winnicott worked mostly with children of a very young age. But he also had experience in treating psychotic patients and other severely psychologically disturbed people. Being a member of the British Psychoanalytic Society, he worked as a very independent and creative mind. In his later years he has dealt extensively with the subject of creativity and related it not only to infancy but also to adult life, society and the development of culture. The 'intermediate area of
experience' is a concept developed by the psychoanalyst Winnicott. He claims that there is 'a potential space between the individual and the environment where cultural experience and creativity are located'. In a chapter dedicated to Donald Winnicott, his wife, Clare Winnicott, reflects:

“As I have suggested the essential clue to D.W.W.’s work on transitional objects and phenomena is to be found in his own personality in his way of relating and being related to, and in his whole life style. What I mean is that it was his capacity to play which never deserted him, that led him inevitably into the area of research that he conceptualised in terms of the transitional objects and phenomena.’ (...) it seems important to note that in his own terms the capacity to play is equated with a quality of living. In his own words Playing is an experience, always a creative experience, and it is an experience in the space-time continuum, a basic form of living. This quality of living permeates all levels and aspects of experiencing and reality, up to and including the sophisticated level described in his paper ‘The Use of an Object’ at which in his own words it is the destructive drive that creates the quality of externality; and again this quality of always being destroyed makes the reality of the surviving object felt as such, strengthens the feeling tone, and contributes to object constancy.”

(C. Winnicott, 1978, pg. 18)

This section of the thesis conveys a small part of the work of D.W. Winnicott and deals mainly with his views on the role of playing and of transitional phenomena in the development of creativity in human beings.

**Playing**

For Winnicott playing is a fundamental activity. Freud wrote about literary creation and daydreaming: ‘The poet is like the child playing.’ Winnicott came close to the definition of Freud but he extended this thought considerably. For Winnicott playing got its meaning when he studied transitional phenomena in infants. He claimed that ‘playing has its time and place. (...) one has to do things, not simply to think or to wish, and doing things takes time. Playing is doing’ (Winnicott, 1971, pg. 47). This conception is fairly close to the etymology of the word poet, which originates in the Greek word poien - to make. The poet, the creator, is the individual who makes, who makes something in time, but it is a particular type of activity (Clancier & Kalmanovitch, 1984).

**The Capacity to be Alone**

In Winnicott’s view creativity will only happen when there is basic trust in oneself and in the other. Without this basis of acceptance people only deal with survival and not with living. From a psychoanalytical point of view this moves together with a capacity to trust oneself and to be alone with oneself. Winnicott sees the capacity to be alone as a sign of emotional maturity. If the infant is alone (in the presence of another) he is capable of doing what adults might call ‘relaxing’:

“able to become unintegrated, to flounder, to be in a state in which there is no orientation, to be able to exist for a time without being either a reactor to an external impingement or an active person with a direction of interest or movement.
The stage is set for an id experience. In the course of time there arrives a sensation of an impulse. In this setting the sensation or impulse will feel real and be truly a personal experience.”

(Winnicott, 1958, pg. 34)

In this period in the development the very young child experiences the illusion of creation and of omnipotent control and learns to let go of this illusion. To be able to do this the infant needs to develop trust in himself and in the other. Winnicott explains the conditions needed for this to happen:

“Although many types of experience go to the establishment of the capacity to be alone, there is one that is basic, and without a sufficiency of it the capacity to be alone does not come about; this experience is that of being alone, as an infant and small child, in the presence of mother. Thus the capacity to be alone is a paradox; it is the experience of being alone while someone else is present.”

(Winnicott, 1958, pg. 30)

In his paediatric clinic Winnicott studied mothers’ relationships with their infants and small children, and eventually formulated his own views of the ways in which a child comes to be a separate individual. He never lost sight of the idea that for the infant at first his mother has a dual role; she is the environment and she is his object. Bit by bit she becomes a person.

“A baby can be fed without love, but lovelessness or impersonal management could not succeed in producing a new autonomous child. Here where there is trust and reliability is a potential space, one that can become an infinite area of separation which the baby, child, adolescent and adult may creatively fill with playing, which in time becomes the enjoyment of the cultural heritage.”

(Winnicott, 1971, pg. 127)

**Transitional Phenomena and the Transitional Object**

Winnicott saw the attachment-bonds developing and then becoming loosened. To this change a mother responds appropriately when leaving the child at every stage to choose between living in his own illusions and acknowledging her provision for his needs. The ‘ordinarily devoted mother’ who offers ‘good enough mothering’ will allow the child rights over his own first possession.

Many children use a ‘transitional object’ in the early stages of becoming independent. This is Winnicott’s term for a child’s indispensable possession, a cherished soft object. Contact with it both gives security and facilitates switches in identification between mother, self and other people.

“Let us focus on the development of the concept of the intermediate area of experience and parallel with this the transitional object. These concepts Winnicott developed during the observation of very young children. They are put here into sequential order.

The first months a human being comes into this world, the world can, under normal circumstances, said to be the baby’s. Everything around it is in its service. Seeing the child in its mother’s lap we can rightfully speak of ‘her majesty the baby’. The sense is one of being one with the world.

But gradually the baby, developing and growing, finds out that this world is not always at its disposal. The baby discovers that there is a difference between itself and
the outer world (first occurring with the mother or caretaker, in psychoanalytic terms 'the object').

This gives great anxiety. Maybe the caring mother leaves for a moment and this world becomes a disturbingly unfamiliar place. So what does the baby do? From a psychoanalytic perspective one could say that separation can be tolerated if not excessive. In proper doses it can facilitate the growth of the capacity to symbolise and play.

If there are enough experiences of mother returning after she has left (basic trust) the baby at a certain moment starts to 'create'. What does it create?

Winnicott observed the phenomenon in small children who had a special toy, a bear or a blanket that is of absolute importance (remember the 'security blanket' of Linus from the Peanuts).

This toy gets a special quality. It is not to be questioned in the sense of its reality or life story. Its reality is created in play. The teddybear for instance is neither just fantasy (inner reality) nor just a plush doll (outer reality) it is in between. For the child it is a kind of bridge to secure but also to create a connection from this inner world to the outer world. The child creates by playing. This play happens in an 'intermediate area of experience' or a 'third world' as Winnicott started to call it.

As the child grows and the trusting environment is continued, the capacity to create also grows. With time the transitional object is allowed to be forgotten (often the destiny of a teddybear) and new areas of creation are explored.”
(Hohn, 1993, pg. 246)

Winnicott’s Paradoxes

For Winnicott paradox is involved in the process of maturation. He stresses the paradox implied in the use of the transitional object which must be accepted if the child is to develop properly. It is an essential element for the establishment of a transitional space necessary for the child's continuity of being (Clancier & Kalmanovitch, 1984). The existence of an intermediate area, neither inside the individual nor outside him, in which cultural experience will gradually become organised, is therefore based on a paradox. It is important that the paradox is accepted, tolerated, and not resolved.

"By flight to split-off intellectual functioning it is possible to resolve the paradox, but the price of this is the loss of the value of the paradox itself. This paradox, once accepted and tolerated, has value in this world but it is also capable of being infinitely enriched by the exploitation of the cultural link with the past and with the future.”
(Winnicott, 1971, pg. 17)

So the paradox needed to develop ‘a capacity to be alone’ is based on the development of trust and object constancy. The paradox needed to create in an intermediate area of experience must contain an area that is neither inside nor outside. A state that is almost ‘unintegrated, floundering’ but not chaotic enough to threaten disintegration.

“The intermediate area of experience, unchallenged in respect of its belonging to inner or external (shared) reality, constitutes the greater part of the infants' experience and throughout life is retained in the intense experiencing that belongs to the arts, to religion, imaginative living, and to creative scientific work.”
(Winnicott, 1971, pg. 118)
It had not escaped Winnicott’s attention, that the notion of an ‘intermediate space’ is and has been used earlier by philosophers, theologians and seventeenth century metaphysical poets. However, he clearly states that his own conception came from his study of infants and children (Clancier & Kalmanovitch, 1984).

**Relationship of Playing to Culture**

The main thesis of Winnicott is displayed in his posthumous work *Playing and Reality* (1971). The most important claims he lays in the context of this chapter are the following:

“In using the world culture, I am thinking of the inherited tradition. I am thinking of something that is in the common pool of humanity, into which individuals and groups of people may contribute, and from which we may all draw if we have somewhere to put what we find. The place where cultural experience is located is in the potential space between the individual and the environment (originally the object). The same can be said of playing. Cultural experience begins with creative living first manifested in play. For every individual the use of this space is determined by life experiences that take place at the early stages of the individual’s existence. (...) I am claiming that these same phenomena (...) appear in our cultural experiences. It is these cultural experiences that provide the continuity in the human race that transcends personal existence. I am assuming that cultural experiences are in direct continuity with play, the play of those who have not yet heard of games.”

(Winnicott, 1971, pg. 116)

In a conference of Creativity and Synergy a presentation of the author on the 'Intermediate Area of Experience' was focused on the hypothesis that a ‘symbolic space of playing’ can be shared by group members when they collaborate in a creative activity (Hohn, 1993). In a workshop the group was asked to search for the ways in which personal creativity occurred. The group dealt with the task by withdrawing quite immediately into personal activity, to choose a place in the room and to work deeply concentrated on this task. Within the special setting of this workshop, what was demonstrated in psychoanalytic terms would be called the ‘capacity to be alone in the presence of others’. There was a high atmosphere of trust and an intimate atmosphere. In the sharing the group found ample evidence for individual ‘intermediate area’s of experience’, however, there was no evidence for a common representation of this concept for the whole group.

**Analogy for Innovative Teams**

The following concepts of the theory of Winnicott are considered to be of interest for concepts of the relational-process level of innovative teams:

*The role of playing in leadership:* Winnicott describes the role of playing as the basis for creativity as one which the analyst should be capable of: ‘If the therapist cannot play, then he is not suitable for the work. If the patient cannot play, then something needs to be done to enable the patient to play.’ (Winnicott, 1971, pg. 63). This might be translated by analogy to the leader of an innovative team.

*The intermediate area of experience and transitional phenomena:* Playing takes place in
an intermediate area of experience where the person is not fully reality oriented (that is, to the outside world) nor fully fantasy (inner world) oriented. Playing and creation take place between reality and fantasy. An analogy for the group can be found in the creation of conditions for ‘the intermediate area of experience’ of every individual person to be used and tolerated.

The ‘capacity to be alone’: According to Winnicott (1971), the capacity to be alone is a sign of basic trust and emotional maturity. As teams consist of individual members, correspondingly this goes for them as well. For the team the challenge might be to follow the paradox of the ‘capacity to be alone’ in the presence of the other. Every member could then be the figure who sustains a holding environment for the other and in turn is sustained himself by the holding environment that the other members create. This implies also what Winnicott calls the mirror-function of the sustained who reflects what the other person is and can become.

3.4 Synthesis

In this section topics will be considered that are chosen from the analogies for teams. These will be compared on the perspectives of the different theories in the preceding paragraphs. The value of the different topics for innovative teams are discussed. In this synthesis the analogies are evaluated in view of their usefulness and novelty for innovative teams. In table 3.2 an overview is presented with a reference to the paragraphs where the description of the theories can be found.

3.4.1 Topics for Innovative Teams

Playing and Creativity

In the described developmental theories playing is seen as an important activity for the development of creativity and maturity in growing up children. Vygotsky relates playing directly to creativity; ‘playing creates a zone of proximal development and is a major source of development itself’ (Vygotsky, 1986, original 1934). Piaget (1962) defines playing as a function of assimilation (fig. 3.1) and gives playing an important role in cognitive development. He states that in every intelligent development play and imitation have their roles. In adult life this becomes the fantasy world that is at the adults free disposal. Playing also helps in developing the symbolic function. The Social Constructivists do not explicitly write about playing as it is not within their present realm of research. Erikson (1968) writes about the ‘play stage’, but does not give it a special role in development. For Winnicott on the other hand playing is an absolutely necessary condition for development. It is the very medium and tool that makes the ‘intermediate area of experience’ possible. There, Winnicott claims, creative experience grows and is developed into cultural richness. Playing for him has a direct link to the maturational processes.

Extending the above in terms of analogy, playing might be important for the development and creativity of teams. The team might develop into a more creative,
mature unit with play as a medium in which standard patterns and meanings can be changed at will. Restating the words of Winnicott (1971, pg. 63) for the team leader instead of the therapist it can be said that when the team cannot play something has to be done. When the leader cannot play he or she might not be fit for the job.

**The Role of Basic Trust in Development**

From Vygotsky’s point of view learning means to make new social constructions in a new environment (Vygotsky, 1986, original 1934). Thus as a condition for this to happen for the child ‘good enough’ adults are needed in a supportive environment for teaching and development. Piaget has a somewhat implicit view on basic trust which is not elaborated in the paragraphs described here. For Social Constructivists like Grossen and Perret-Clermont (1994) ‘intersubjectivity’ is the glue that keeps persons in contact and makes the social constructions possible that are necessary for learning, for cognitive development and for performance. Erikson and his wife affirm (Erikson, 1982; J. Erikson, 1988) that Basic Trust, is developed in the first life stage, and a building block for all other life stages. The strength Hope, coming forth from this, is the resolution of the crisis of this stage and is the basis for resolving the next developmental turbulence. For Winnicott (1971) the development of basic trust is linked to what he calls ‘the capacity to be alone’. Winnicott stresses the paradox of the development of this capacity, which has to develop in the presence of a significant other, who is there for you but leaves you in peace. Then the sense of inner security and safety can develop.

Extending the above in terms of analogy to innovative teams, Vygotsky’s conditions might be needed for innovative teams to develop their potential and be able to sustain this development toward an accepted output. The shared understanding of intersubjectivity will align the team in such a way that competencies can grow and be put to good usage.

**Metaphors of ‘Intermediate Space’**

The metaphor or concept of an ‘intermediate’ (in-between) space, some place between the real shared world and a personal inner world, is found in several of the presented theories.

Vygotsky’s ‘zone of proximal development’ (1986, orig. 1934; sec. 3.2.2) can certainly be seen as an intermediate space, this zone of proximal development does not exist yet but is there as the potential that is elicited by teachers or ‘more knowledgeable others’. The ‘intersubjective space’ of the Social Constructivists (Grossen & Perret-Clermont, 1994; sec. 3.2.4) closely leaning on Winnicott’s concept has in another way the same paradoxical qualities of not being defined by one nor by the other person, it is a space in-between. Winnicott’s ‘intermediate area of experience’ (1971; sec. 3.3.2) is the most developed metaphor and concept as it is at the basis of his theory on the development of creativity.
Extending the metaphors of intermediate space to a team what could be a 'zone of proximal development'. It might designate the domain of what is possible in the potential of the team, if it is lifted up by more 'knowledgeable others'. A parallel or analogy would be the supportive environment provided for by a leader or significant group members. Like the intersubjective environment the zone of proximal development is one that does not develop without a good teacher/child relationship. In this sense both are in essence social concepts permitting a good and timely unfolding of the development of the child or by analogy the other person. The analogy for the group is to create conditions for 'the intermediate area of experience' for each individual person and for the group.

Stages of development

Vygotsky does dispute sequential stages of development, but Piaget has built his theory on them. Learning, seen as adaptation by Piaget (1962), is a balance between assimilation and accommodation that moves the child through the stages of development. Erikson (1981) also described sequential life stages, every one of which has to be followed if the person is to develop into a mature person.

The assumption here is that similar processes of adaptation are still happening in adult life and it is argued that where so much emphasis is laid on life-long learning this point might be reconsidered. The much disputed issue that stages of development are sequential and dependent upon each other and that they develop by a process of equilibration is transferred here to groups. Thus development in groups might happen in waves of assimilating, that is creating new ideas and accommodating to the outside world. In a sense of development of a person Erikson's life stage theory (Erikson, 1981) is applicable to all team members. Especially the leader will face the challenge of Generativity, Care and Wisdom in his own person but also as a guide to the group he is leading. The crisis the leader has won and the 'strengths' he or she has gained might be of vital to the fulfilment of the task of the innovative team.

Destruction and Construction

All presented developmental theories state implicitly or explicitly that destruction and construction are needed for learning and for development. Piaget's thesis is about the equilibrium (1962), and in the processes of accommodation and assimilation constant destruction and construction takes place. The Social Constructivists (Doise, 1989; Grossen & Perret-Clermont, 1994) see a positive and necessary role for the socio-cognitive conflict as part of the interindivdual dimension of development and learning. The socio-cognitive conflict is a perceived discrepancy between two non-fitting views of reality, one's own and that of another (person, group, society). In the resolution of the conflict are the seeds for new insights if it can be resolved by intersubjectivity and not by exclusion or by compliance. Erikson refers implicitly to the process of destruction and construction when he talks about the crises or turning points between the life stages. Winnicott has written considerably about destruction although this
stayed implicit in the few pages of this theses that described selected parts of his theory.

Extending the different viewpoints to innovative teams several points can be mentioned. Certainly in the construction and realisation of the shared objectives of a team, socio-cognitive conflict will play are role. One might infer, that when the team does not reach ‘intersubjectivity’ no shared development of the team and commitment to the objective occurs. For team members and the leader the theory of the life stages will again be of interest. Erikson would stress in the intrapsychic conflicts an individual has to deal with not only growing up but also living as a grown-up and dealing with the scars and the patterns that the growing up brought about.

### 3.4.2 Comparison of Theoretical Orientations

<table>
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<th>Stages of Development</th>
<th>Metaphors of ‘Intermediate Space’</th>
<th>Construction Destruction</th>
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<td>good environment for learning 'teacher' child education sec. 3.2.2.</td>
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<td>playing enhances the zone of development sec. 3.2.2.</td>
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<tr>
<td><strong>Piaget</strong></td>
<td>playing symbolic play, imagination representational stage sec. 3.3.3.</td>
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<td>see stages of cognitive development and concept of adaptation sec. 3.3.3.</td>
<td></td>
<td>implicit destruction is biologically part of adaptation sec. 3.3.3.</td>
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<tr>
<td><strong>Social Constructiv. Neuchatel</strong></td>
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<tr>
<td><strong>Winnicott</strong></td>
<td>play creates an intermed. area of experience needed for a creative life sec. 3.3.2.</td>
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<td>intermediate area of experience, neither inside nor fully of the person sec. 3.3.2.</td>
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</tbody>
</table>

*Table 3.10: Overview of Different Theories Dealing with Topics for Innovative Teams*
In the chosen topics two are quite known and easily transferred to innovative teams; these are basic trust and developmental stages. The topic of destruction and of socio-cognitive conflict is more controversial. In popular terms conflict and destruction are not seen as positive but more as something to be avoided or escaped from once encountered. Conflict is more associated with interpersonal conflict and not so much with intrapsychic conflict as the tension of two inconsistent views of reality. This is a worthwhile point of investigation.

Novel and unusual for innovative teams are the topics of playing and intermediate space. Looking from the organisational learning viewpoint 'playing' is absent in the vocabulary. Creativity and maybe inspiration and innovation are the words that are in use and long before them the multitude of social skills that are necessary to survive in these kind of complex situations.

Bridge to the next chapter

The next chapter will start with the theoretical survey investigating the contribution of the field of group dynamics and social psychology to find concepts and ideas that can be related to the relational-process level of innovative teams.
4 Group Dynamics in Small Groups and Teams

4.1 Introduction

4.2 Three Pioneer Approaches to Working with Group Dynamics

4.2.1 The Laboratory Method

4.2.2 From Psychotherapy to Symbolic Frames for Groups

4.2.3 Socio-technical System Approach

4.3 Development of Theory on Small Groups and Teams in Perspective

4.3.1 Small Group Research

4.3.2 Emergence of Teams

4.3.3 Charting the Historical Development

4.3.4 Different Metaphors and ‘Logics’

4.4 Synthesis

4.4.1 Topics for Innovative Teams

4.4.2 Comparison of Theoretical Orientations

In the chapter Group Dynamics in Small Groups and Teams, a selection of different theories is presented in their historical context as they consider the inner dynamics of groups. First summaries of selected theories are given, specific theories and schools of thought are described. A comparison between the theories on small groups and the literature on teams is presented and commented upon. Themes of interest for the innovative teams are identified and elaborated. The chapter ends with a synthesis of these themes.
4.1 Introduction

There are different ways of making sense of the complex phenomenon we call the small group and the team, as will be defined below. This chapter identifies main streams of the development of the thoughts on group dynamics of small groups and teams from a social science perspective. As it is not possible to be exhaustive within the scope of this research, the sources of the survey will be a selection of different fields of the social sciences and the organisational domain that have brought forth writings on this subject. From the diverse theories on group dynamics a restricted tour d' horizon is made focusing on major domains that have influenced and shaped the knowledge on small groups and on teams till 1997.

In the introduction chapter the question is posed whether the theories and findings of small group research and social psychology provide answers to questions about leadership on the relational-process level of innovative teams and their development. To give a theoretical foundations to the answer this chapter on group dynamics is written.

What characterises small groups and teams? Many authors from the social science field use the term work group to define a task group as a category within the small groups (Guzzo, 1992; Hackman, 1991; Yukl, 1998). Yukl's definition states:

"Teams are small task groups in which members have a common purpose, independent roles, complementary skills, and considerable discretion how to do their work."

(Yukl, 1998, pg. 351)

The expression team emerged only fairly recently in the field of the social sciences. It is used for the first time in 1988 in the authoritative Psychological Abstracts (Van Zanten, 1996) although in the Handbook of Small Group Research in 1994 (Hare, Blumberg, Davies & Kent, 1994) there is no mentioning of teams as such at all. Hackman (1987) and Guzzo (1992) regard teams and small work groups as synonymous; that is task groups with a minimum of two and a maximum of 15 members (v. Zanten, 1996). West (1996) sees the terminology of 'work groups' and 'teams' as interchangeable as well. He gives the following definition for both in the introduction to his Handbook of Work Group Psychology:

"Members of the group have shared objectives in relation to their work. They depend on and must interact with each other in order to achieve those objectives. Group members have more or less well defined roles, some of which are differentiated from one another (.....) They have an organisational identity as a work group with a defined organisational function; i.e. they see themselves and others in the organisation see them as a defined and bounded group."

(West, 1996, introduction)

Although this last point of view is acknowledged, in this literature survey a distinction will be made between the literature on small (work) groups and the explicit team literature. Whether there are contrasts and differences in the views found in the books and articles will be explored in the following pages.
This survey limits itself to small groups and teams exclusively and will not deal with the larger theme of organisational development, organisational learning and for that point the metaphor of the learning organisation (Senge, 1990; Tassoul & Hohn, 1993, pg.8).

After a look at the full picture the scope will be narrowed to a few topics that are considered to be of interest for this thesis and that are feasible within the used method of inquiry. A discussion contrasting the different developments on small groups and teams will conclude this chapter with a specific focus on the chosen topics for innovative teams.

4.2 Three Pioneer Approaches to Working with Groups

In the following, three approaches on working with groups and on the development of our knowledge on dynamics of small groups will be covered, culminating each in a small description of the ‘state of the art’ and topics for innovative teams.

First the laboratory approach with its surge in experiential interest will be described. It became a first major landmark in the development of methods and theoretical speculation in group dynamics. Following, the symbolic frames deriving from psychotherapy will be viewed closing in on the special contribution one of the authors made to the third method; the socio-technical system approach. This theoretical framework developed a new language to describe work-processes in organisations from a social and a cybernetic point of view combined.

4.2.1 The Laboratory Method

Three decades of group research, after the end of the second world war, focused mainly on the inner workings of the group. Much of the theoretical framework of this developing field was based on Kurt Lewin’s thoughts and contributions on group dynamics and action research (Lewin, 1947). Theoretical and practical developments in action research methodology were of particular interest.

Lewin inspired the founding of the NTL, the National Training Laboratory (Bradford, Gibb & Benne, 1975) with one of the objectives, to explore the emerging field of group dynamics. The findings from this institute gave input to the development of humanistic psychology and the human relations movement of the 1960’s and 1970’s. There was a genuine concern to study the social phenomena that had lead to the second world war. The re-education of the authoritarian personality (Marcuse, 1964; Milgram, 1963) was a major issue after the horrors of the holocaust. Based on the concern for what Marcuse had called ‘the authoritarian personality’ there was a high demand for re-education. Leland Bradford, the long-time director of the NTL, proudly states in the preface of the classic book T-Group theory and Laboratory Method:

“The approach to re-education is rightly associated with the National Training Laboratory in Group Development of the National Education Association which held its first laboratory session at Bethel, Maine, in 1947.”

(Bradford, Gibb & Benne, 1964)
The method was influenced by group psychotherapy (Moreno, 1964; Slavson, 1957) although the Laboratory Method distinguished training from therapy clearly. Other influences came from adult education and social group work and philosophical influences of the educationalist Dewey (1899).

What were the workings and the objectives of this new laboratory method? T-groups stands for training group. In the NTL the training methods were developed in so-called ‘laboratories’ as they helped participants to diagnose their interactions and experiment with their behaviour and relationships in a specially designed environment. So for once the experimenters were not outside the group any more. The participants had become experimenters and subjects at the same time.

This shift in experimentation was encouraged by a shift in theorising and research in a wide number of social and behavioural sciences from an emphasis on ‘static’ description and classification to an emphasis on dynamics and experience. In the NTL ‘scientific findings and methods were put to a dynamic test’ and vice versa. With the new observations and measurements new theories were developed. This dynamic approach seemed to be especially relevant in the diagnosing and planning of change processes with which laboratory training was centrally concerned.

“T-group theory is not a theory of group development, of influence, of personal dynamics, but a peculiar, emergent ‘Gestalt’ which deals with the phenomena that occur when persons meet in groups with intent to learn and to change through increasing process awareness.” (Bradford, Gibb & Benne, 1964, pg.186)

In fact the creators of the Laboratory Method were quite ambitious in their goals and promised next to personal development nothing less but a better world. Many methods starting form sensitivity training, encounter-groups, gestalt groups (Shaffer & Galinsky, 1974) came into being, influenced each other and drew from each other. To illustrate the essence of their search some of the benefits and goals of the laboratory method are quoted below. In the method one can recognise the forerunners of current theories on organisational learning and change (Argyris & Schön, 1978; Senge, 1990).

“Learning Opportunities for Laboratory Participants

Opportunities to test and to discover dissatisfactions; to test congruence between goals and actions; for collaboration in setting directions to change; to determine pathways to change; to assess effectiveness of new behaviour; to practice, internalise, and apply new behaviour.

Barriers to Learning and Change

Seeking easy, early answers; conflicts between the familiar and the unfamiliar; resistance to breakdown of compartmentalisation’s within the individual; reluctance to expose thoughts and behaviour to others; defensive reactions resulting from lack of individual security; lack of skill in assessing behaviour; lack of conceptual structures to plan the direction of change; hesitation to accept or to give helpful reactions; lack of connection seen between laboratory and potential utilisation.
Optimal Conditions of Training and Learning

The generation of behavioural output for analysis and learning; a vacuum to produce experience for learning; a climate of permissiveness and inquiry; collaborative relationships for learning; models for data collection and study; maps for understanding and organising experiences; experimentation with new behaviours; generalising and planning applications.” (Benne, Bradford & Lippitt, 1964)

Hopes and ambitions for this technique were high, but did eventually not come true. The method had a presumptuous pretence of organisational benefit. As time passed by, little evidence of this was found, and more and more critical voices were heard. Not only, as in the beginning, the educational and ethical side of the training methods were criticised. The larger problem was that the transfer of the gained knowledge and personal development often did not show in the work situation. At a later point in time Katz and Kahn (1978) describe the effects of T-groups as follows:

“A T-group in this original form is a peculiarly self-contained series of events. It has its beginning of strangeness and uncertainty, its mid-period of self-discovery and insight into group development, and its end. The end, in spite of various efforts to anticipate the problems of re-entry and to rehearse the uses to which group-acquired insights will be put, is characteristically sad. It is as if members understood, better than they knew, the magnitude of what has come to be called ‘the carry-over problem’”

(Katz & Kahn, 1978, pg. 671)

The term T-group and its association with sensitivity training got long into misuse. The group-process as such seems to be not a subject of study any more. Katz and Kahn quite plainly conclude that ‘the simplest, grandest and most optimistic assumptions about T-groups (...) that they would transform human institutions and human life (...) were not fulfilled.’(Katz & Kahn, 1978, pg. 668). In fact, individual changes, greater openness in communication, increased flexibility in role behaviour were frequently reported but on the organisational level, in an extensive research on organisational effect, no significant changes were found (Bowers, 1973). Even Gibb, editor of the first classic on T-groups and the laboratory method, states sadly that ‘there is a growing impression that this simple approach is minimally effective’ (Gibb, 1975).

Interesting Themes for Innovative Teams

The state of the art: The terminology tends to be forgotten now; the computer in a renowned Dutch book shop in the year 1995 did not respond to search words like ‘T-group’ or ‘Sensitivity training’. So they disappeared by not being able to generate enough ‘transfer of knowledge’ to the work practice. Yet, less acknowledged is that the developed laboratory approach laid a basis on which quite some theories on leadership, learning and group process are flourishing now. The laboratory approach and its techniques are still used in many an occupational education. Numerous training methods owe their due respect to the methods that were developed in the high time of the National Training Laboratories.
Trust formation in small groups: Selected for innovative teams are the theory on trust development of Gibb because of the practical value and insight this theory gives. The theory is described in the discussion on topics for teams in section 4.4.

4.2.2 From Psychotherapy to Symbolic Frames for Groups

A parallel development has happened in Group Therapy. The laboratory approach had borrowed many concepts and thoughts and also practitioners from the domain of therapy (Cohn, 1968; Moreno, 1946; Perls, 1951; Sullivan, 1953; Whitaker & Lieberman, 1964; Yalom, 1970). After 1970 the distinction and differences between the approaches grew.

In an article on models of Group Psychotherapy, Dies (1992) leads us through the present state of the art as far as theories on groups in therapy are concerned. Starting as the new editor of the International Journal of Group Psychotherapy Dies sifts through the theoretical models about group therapy and defines relatively distinct clusters of practitioners: psycho-dynamic, interpersonal, action oriented and the cognitive behavioural approach. On the integration of the theories he made the observation that 'theoretical integration of the complete variables at work in a therapy group has so far evaded the efforts of even our best thinkers' (Dies, 1992). He concludes that the 'journey toward sophisticated understanding of group methods is still far from complete.' (Dies, 1992, pg. 16) This criticism of the domain does in no way discredit the value and effectiveness of the different directions and theories of group psychotherapy. It rather illustrates the tendency in theory development that it is easier to diverge than to converge.

The psychiatrist Wilfred Bion, one of the theorists in psychotherapy, has also influenced the group dynamic field extensively and helped develop the socio-technical systems approach (sect. 4.2.3). His thoughts are based on what Dies identified as the psycho-dynamic orientation the concepts of which come from Freudian psychoanalysis.

Bion's Theory of Basic Assumptions in a Group

Bion's theory is focused on motivational and defensive processes of the individual as related to group life. Part of these processes are lying in what psychoanalysis calls the unconscious part of our experience. Psychoanalysts look at the symbolic content of what is said to reach these deeper layers of the psyche. Symbolic content makes use of the subject matter of manifest content but examines it with the question: Is there a message behind the literal message? In other words, the task here is to discern the symbolic meaning of the experience.

When a group works together Bion (1961) distinguishes the Work Group (mode) from the Basic Assumption Group (mode). He defines them as follows:
“In any group there maybe discerned trends of mental activity. Every group, however casual, meets to ‘do’ something; in its activity, according to the capacities of the individuals, they co-operate. This co-operation is voluntary and depends on some degree on sophisticated skill in the individual. (...) Since this activity is geared to a task, it is related to reality, its methods are rational, and therefore, in however embryonic a form, scientific. Its characteristics are similar to those attributed by Freud (1911) to the ego. This facet of mental activity in the group I have called the Work Group. (...) Work group activity is obstructed, diverted, and on occasion assisted, by certain other mental activities that have in common the attribute of powerful emotional drives. These activities, at first sight chaotic, are given a certain cohesion if it is assumed that they spring from basic assumptions common to all the group.”  
(Bion, 1961, pg. 145)

To discern the behaviour in the Basic Assumption Group from the behaviour of the Work Group, Bion phrased the observation of symbolic phenomena in the terms ‘as if’. Instead of working reality related and task focused, the group behaves ‘as if’ something else is happening that has a high emotional impact on the behaviour. For instance when describing the basic assumption culture of Fight/Flight, where the culture of Flight was dominant, Bion spoke of it ‘as if the group were fighting from some enemy it was unable to confront’. (Bion, 1961, Obholzer & Roberts, 1994) Symbolic analysis of transactions frequently makes use of such images because they capture the essence of the meaning that is embedded at one basic level of the transaction.

According to Bion much of the irrational and apparently chaotic behaviour we see in groups can be viewed as springing from the basic assumptions common to all members. He distinguishes three basic assumptions, each giving rise to a particular complex of feelings, thoughts and behaviour: the basic assumption dependency, the basic assumption fight-flight and the basic assumption pairing. They are summarised below in a quote from Stokes from the book ‘The Unconscious at Work’ (1994):

“Basic assumption dependency: A group dominated by the basic assumption dependency behaves as if its primary task is solely to provide for the satisfaction for the needs and wishes for the members. The leader is expected to look after, protect and sustain the members of the group, to make them feel good, and not to face them with the demands of the group’s real purpose. The leader serves as a focus for a pathological form of dependency which inhibits growth and development. (...) This leader may be absent or even dead, provided the illusion that he or she contains the solution can be sustained.

Basic assumption fight-flight: The basic assumption fight-flight here is that there is a danger or ‘enemy’, which should either be attacked or fled from. However, as Bion puts it, the group is prepared to do either indifferently. Members look to the leader to devise some appropriate action; their task is merely to follow. For instance, instead of considering how best to organise its work, a team may spend most of the time in meetings worrying about rumours of organisational change. (...)”

Basic assumption pairing: The basic assumption pairing is based on collective and unconscious beliefs that, whatever the actual problems and needs of the group, a future event will solve them. The group behaves as if pairing or coupling between two members within the group, or perhaps between the leader of the group and some external person, will bring about salvation. The group is focused entirely on the future, but as a defence against a difficult present. As Bion puts it, there is a conviction that the coming season will be more agreeable.” (Stokes, 1994, pg. 20)
In his later life Bion went back to psychotherapy, but his concepts and works like ‘Experiences in Groups’ (Bion, 1961) have left a deep imprint on the field of groups dynamics and the socio-technical systems approach. In social and in organisational settings many practitioners work with and develop this tradition further (Menzies Lyth, 1983; Obholzer & Roberts, 1994).

**Interesting Themes for Innovative Teams**

*The state of the art:* Bion’s model is used presently in numerous educational and organisational settings world wide, which offer group relations training and consultancy for social, psychotherapeutic and organisational work all strongly influenced by the conceptual framework described above (Hupkens, 1995; Obholzer & Roberts, 1994).

*Symbolic layers:* For innovative teams the heightened sensitivity to the symbolic is important in this model, the language of metaphors and a language, syntax and background theories to use them are the added values of this model. For leaders working with groups longer than only in incidental projects, it is of value to know something about these theories and about their own sensitivities and valencies to certain basic assumptions.

### 4.2.3 Socio-Technical System Approach

In the 1950’s a group centring in the Tavistock Institute, London, had observed and studied the dynamics of groups closely. The Tavistock group and with her several others observed, that industrial production systems which are, of necessity, designed in accordance with technological demand, where also taken as technological/mechanistic model and projected into the associated social organisation. Task performance was only associated with one work organisation thus either the social or the technical dominated.

The dilemma of making either the production function or the social work function dominant was approached differently by the scientists at the Tavistock Institute. The objective for them was an integration of social and technological factors instead of the determination of their priority. The concept of the organisation as a socio-technical system (Emery and Trist, 1960), emphasises the importance of designing organisations to meet social psychological as well as technical criteria, so that human beings will be willing and able to enact the organisational roles. It means in other words, systems which attempt to keep in balance the social and technical demands acting on a situation.

The Tavistock Research Group was influenced by the work of Lewin (1947), cybernetics, systems theories and analytic biology and from the social side by the group views of Bion (1961). The views of Bion on groups as explained in the preceding section has inspired the socio-technical viewpoint and is developed in cooperation with this conception. Homans views the theory of Bion in system's terms as follows:

"Bion saw the group as a small social system in existence to perform some primary task but in which the rational, planned, task-performance activity was imbued with, and often displaced by, activity attributable to unconscious forces concerning such
matters as dependence and understanding how the formal work of groups relates to affective and social dynamics found in them. These contributions very much emphasised small groups as bounded systems like social entities responsive to their environments.” (Homans, 1950).

Another of their prominent pioneers was the researcher Eric Trist (1981). The socio-technical approach of the Tavistock Institute is well illustrated by a series of studies (Trist, Higgin, Murray & Pollock, 1963) originating in the first mining study investigating changes in the coal mining industry (Trist & Bamforth, 1963). It was utilised in further Tavistock research including Rice’s experiments in the Indian textile industry (Rice, 1958). The socio-technical systems view became in time the foundation for both the systematic analysis of work that emerged in the 1970’s and for the open system design that led to the Quality of Working Life developments (Trist, 1981).

McWhinney recounts (1991) that in further developments of this approach ‘explicitly cybernetic models also came to be used in the development of new ideas. He distinguished the cybernetic model underlying the concept of the automated factory (e.g. Beer, 1959) at one end of the continuum and the various ideas about two-way communication and participative management at the other (e.g. Argyris, 1962). Social science has invested in this way of working but not without problems. There is critique at some of the group approaches of social scientist as Katz and Kahn (1978, pg. 277) observe. They observe and comment on the difference between systems thinkers and small group researchers in favour of the first:

“The principal system’s adaptation to a complex environment often involves a bewildering increase in size and differentiation. Systems theorists have been influenced both by the development of computers and by thinking in biology. They emphasise the multitude of different forces to which an organisation is exposed. Their thinking thus contrasts very much with those of the small group experimenters, who normally attempt to control all but a few sources of variance witching their experiments.” (Katz & Kahn, 1978, pg. 277).

Another point of difference is the use of systemic language by the explicitly cybernetic models and by the social models. Some of the ambiguities can give rise to misunderstandings:

“One of the unfortunate consequences of the rapid adoption of communications models into social science has been that human relations professionals came to use a number of critical system theory terms, including negative and positive feedback, information (as a measure). equivocation, redundancy, in ways that are highly ambiguous when employed without a clear reference as to the context. The most common difference is in the use of the term positive feedback - system theorists use it to designate deviation increasing responses while many social scientists use it to mean feedback that reinforces conformity.” (McWhinney, 1991, pg. 43)

Care must thus be taken when switching between the ‘formal’ system theories and the writings and research in the social sciences. On the other hand the purely technical systems approach has not proven to be an all solving miracle. McWhinney suggests discrimination when he contemplates systems theories in the larger context of what they can be used for and what not.

“One should not seriously consider system thinking to be a sufficient model for
designing the world, or an organisation or even a family. It is to be used only as a tool in a total context of human endeavours. Conversely, it should not be criticised for its 'bluntness' any more than one should criticise a plumber for an unaesthetic product if you call on him to design a fountain.”

(McWhinney, 1991, pg. 105)

In Belgium and in the Netherlands Hoebeke (1994), In’t Veld, (1988), de Sitter (1994) and Amelsfoort (1993) and many others have given the socio-technical approach commitment and application in practice.

Interesting Themes for Innovative Teams

State of the Art: Presently system approaches are popular and often quoted in various approaches of the metaphor of the ‘learning’ organisation (Senge, 1990, Swieringa & Wierdsma, 1990). In spite of the obvious enrichment of this metaphor for a managerial perspective (Tassoul & Hohn, 1993) the warnings of the above section also apply in this field.

Systemic view and context of innovative teams: For innovative teams the systemic way of looking gives a cybernetic viewpoint on the boundaries and the environment the team has to work in. The context question is one of importance and returns in the discussion on topics for teams in section 4.4.1.

4.3 Development of Theory on Small Groups and Teams in Perspective

This chapter will begin with a bird’s eyes view of the development of small group research. Further on we will review the emergence of teams in the organisational and managerial domain. Each culminates in a description of the state of the art and the choice of theory and topic of interest for teams.

In a chronological chart of these landmarks (figure 1.1) the time frame will become visible and show the different developments of small group research and team literature in perspective to each other and to their predecessors. The differences and similarities are discussed in a concluding section.

4.3.1 Small Group Research

In 1920 Allport writes a first article ‘The influence of the group on thinking and perception’ about groups in the Journal of Experimental Psychology and thus introduces the 'group' into the realm of social psychology (Allport, 1920). Before that date groups where confined to the domain of sociology. The idea of ‘the social engineering of society’ was an ambition of sociology whose theorists had for that reason an interest in the phenomenon of Mass Psychology (Le Bon, 1895). The social order was disturbed by something called ‘the mass’ or less friendly ‘the mob’, and had to be restored. This was a valid perspective in the 19th century.

As founders of group dynamics and modern group psychology one name stands out
between others. As described in section 4.2.1, it was Kurt Lewin who ‘invented’ group
dynamics and action research, 'research which produces nothing but books will not
suffice' (Lewin, 1947; section 4.2.1).

As described in section 4.2.1, growing interest and recognition of the significance of
relations in and between groups developed after the second world war. Research about
groups and small groups was prospering but with the growth came the dilemma’s and
paradoxes characteristic of research in the social realm.

This is illustrated in the following excerpts from the first edition of the often cited
reader 'Group Dynamics, Research & Theory' of Cartwright and Zander from 1953. In
their introduction they state that there is much literature about groups to be found but
that scientific research has only been known for 25 years and they demand 'facts
instead of speculation and untested prejudice.' Facts in their view means the rigorous
and meticulous use of objective methods of observation, measurement, and
experimentation. With these hard criteria the determination and definition of variables
became a problem. Group dynamics like most social variables did not fit neatly into the
equations of mathematics however much a positivistic science would like to put them
there. There was no general theory of group dynamics emerging yet and Cartwright and
Zander observed disagreement about basic variables, concepts and observed 'facts'.

"The essential problem may be passed in this way. The basic law of group dynamics
toward which all investigators in the field are working are to be stated in terms of
functional relations of the type: x = f(y); x is a certain function of y. How are we to
select and name the x’s and the y’s in our research. (....) an answer cannot be given,
but it does stress one of the major problems confronting research and theory in
group dynamics today."

(Cartwright & Zander, 1953, pg.7)

The dilemma was solved by 'consensual validation' as nowadays a reflective
practitioner like Schön (1982) would say. In 1953 the solution was posed
pragmatically without a blink of the eye in the conviction of positivist values.

"Despite the importance of conceptual systems and models, at the present time
there is no single language that all theorists will agree upon. Furthermore there is
little prospect that such a language will soon emerge. (....) Fortunately the
conceptual systems that are currently in use are not completely incompatible with
one another. In a general sense those who employ one set of terms can 'understand'
those who employ another, even though a dictionary of translation has not been
worked out. This possibility of sensing when two differently oriented theorists are
talking about essentially the same thing provides the way in which a generally agreed
upon set of terms can be achieved. When two theorists can agree that they are
talking sufficiently about the same thing so that the same operational definition can
be given to the differing term of each, then a rigorous translation can be made
between the two languages and eventually the two will become amalgamated into
one."

(Cartwright & Zander, 1953, pg.8)

In spite of all presumed 'understanding' in one of the last editions of the reader of
Cartwright and Zander (1968) still eight distinctly differing theoretical orientations
were given for the analysis of groups. These ranged from field theory to
psychoanalytical theory up to pure statistical view on the subject. This reflects that
the field of group dynamics was booming with new discoveries, data and outlooks at
that time. Cartwright and Zander are among the selected few who undertook the feat to
give some order to the proliferating amount of models.

Ten years later Cooper undertakes to write a comprehensive reader ‘theories of group
processes’ trying to build up a ‘first body of knowledge in the field’ (Cooper, 1975,
pg. 7). He invites experts of name like Argyris, Kolb, Blake and Mouton and
Golembiewsky to reflect on the theoretical side of their research. He also incorporates
the psychodynamic side of the Tavistock Institute (sec. 4.2.2) and the experiential and
experimental designs from the MIT. In his view the field cries out for an ordering
theory and he edits a scientific anthology ‘Theories of Group Processes’ in order to
contribute to the building of a more coherent conceptual framework (Cooper, 1975).

Yet, as Zander observes in 1979 that the rate of research publications during the 1960s
began to decline a decline that continued through the 1970s (Zander, 1979). This
corresponds with the decline of interest that ended the T-group and laboratory
approach. It seems that the prominent contributors of this field went their own way
again and pioneered elsewhere. Many authors and theories who had started out in the
NTL can be found back now in social fields and in management literature sometimes
research is used extensively, much of social constructionism has adopted and invented
discussion methods and consensual validation. Leadership theories and groups
dynamics theories are to be found in major readers on groups dynamics (Brown, 1993;
Forsyth, 1990) organisational behaviour (Kolb, Rubin & Osland, 1991; Robbins, 1993)
and in management literature (Henley, 1997). Hare is one of the authors who gives a
full update overviews on small group research (Hare, Blumberg, Davies & Kent, 1994).
From 1980 on research and findings became more of an elaboration of existing findings
or stopped altogether (Zander, 1988). The field of Small Group Dynamics seemed to
have consolidated.

When about twenty years after Cooper edited his book, West decided that it is time to
write an ‘authoritative work on theories of groups’ (West, 1996, introduction), it
becomes the Handbook of Work Group Psychology. The enterprise is to connect
group research that is being pulled apart by its own heterogeneity, collapsing into a
‘jumble of unrelated research reports and unused knowledge.’ (West, 1996, pg.18)
Building forth on the existing research knowledge (UK oriented) the effort has shifted
from the cry for one general theory to a post-modern tolerance for authors writing from
their own scientific stance, summarising all credible research on this issue. West’s
Handbook of Work group Psychology succeeds in covering the vast field of research on
this subject not only as a summary but also with a compassionate commitment to
orchestrate the different fields in one coherent handbook.

In the following section, the for this thesis important concepts task-content and
relational-process level and leadership will be defined. Concepts on task performance
and boundaries of groups will conclude this section.
The Difference between the Task-Content Level and Relational-Process Level

In 1950 Bales (1950) concluded his first decisive research on group activities and differentiated two levels in a group: the task activity and the socio-emotional activity or in other words a task and a group process level. Bales believed that these two orientations were fundamental and contrasting elements of all group processes. Based on this theory Bales developed the IPA: Interaction Process Analysis.

The Interaction Process Analysis was a coding system to observe verbal inputs and to classify them onto two sets of utterances. One set of behaviours was allocated to socio-emotional activity. These are actions pertaining to interpersonal relationships within the group. For instance complimenting another person would be an example of a positive socio-emotional behaviour, whereas insulting a group member would reflect negative socio-emotional behaviour. The other set of behaviours was allocated to task activity. These are utterances that focus on the problem the group is trying to solve.

For instance giving and asking for information, opinions, and suggestions related to the problem of the group are examples of task-oriented activity.

The Interaction Process Analysis has in later years changed into a system named SYMLOG (Bales, 1979), which has an advanced coding system. The model promised insights into the structures that underlie recurring patterns of interpersonal behaviour in groups.

Since the first research of Bales, it has become common practice to differentiate the two levels of group activities. Presently the dichotomy of task versus group processes as coined by Bales can be found throughout social psychological literature of group dynamics and leadership. It is referred to in this thesis as substance-content and relational-process level (sec. 1.1.1).

Leadership Definitions

Following the above tradition many leadership studies have concentrated on the difference between relationship-process oriented behaviour and task-content oriented behaviour of the leader (Blake & Mouton, 1962; Fiedler 1967; Hersey & Blanchard, 1982). Forsyth elucidates the two styles (1990):

“Relationship behaviours address the feeling, attitudes and dissatisfactions of the members of the group and therefore correspond closely to the functions fulfilled by socio-emotional behaviour. Even in groups that exist to complete tasks or solve problems, leaders must often take steps to meet the members’ personal needs. Boosting morale, increasing cohesiveness, reducing interpersonal conflict, establishing leader/follower rapport and illustrating one’s concerns and consideration for group members all go into relationship leadership.

Task behaviour, in contrast, pertains to the problem at hand rather than the personal satisfactions of the group members. Leaders must also lead.; they must guide the group, establishing communication networks, providing evaluative feedback, planning, motivating action, co-ordinating members’ actions, and facilitating goal attainment by proposing solutions and removing barriers are key aspects of task leadership.”

(Forsyth, 1990, pg. 217)
The difference between relationship and task behaviour of the leader has influenced many leadership theories. Fiedler (1967) assumes that task and relationship orientation are the endpoints of a single dimension, whereas several leadership-style theorists assume that effectiveness depends on the balance between these two basic ingredients. Blake and Mouton for example assumes in their Managerial Grid (1962) that people vary their concern for others and their concerns for results and that individuals who are high on both dimensions, the 9.9 style are the best leaders. Situational-leader theory, as proposed by Hersey and Blanchard (1982), takes the opposing position by suggesting that groups benefit from leadership that matches with the maturity level of the group.

Leadership style has become an issue as far as group-member participation in decision making is concerned. The classic study of Kurt Lewin, Ronald Lippitt, and Ralph White on authoritarian, democratic and laissez-faire leadership (Lewin, Lippitt & White, 1939) focussed on the importance of this issue. Other theorists have extended these early findings in later years by asking when participatory leadership is effective. Victor Vroom offered a sophisticated solution to this problem of contradictory findings regarding group-member participation in leadership (Vroom, 1973; Vroom & Yetton, 1973). According to Vroom, participation in decision making increases the satisfaction and effectiveness of the group only in certain situations. He calls his theory a normative model of leadership because it makes clear suggestions for the prospective leader.

The difference between task and process, between content and person has certainly influenced the early leadership theories who use this distinction all but from different angles. Forsyth suggests the following working definition:

"Leadership is a reciprocal, transactional, and transformational process in which individuals are permitted to influence and motivate others to promote the attaining of group and individual goals." (Forsyth, 1990, pg. 216)

Yukl has reviewed different definitions on leadership in his book Leadership in Organisations (1994). He summarises his findings as follows:

"Leadership has been defined in different ways, but most definitions have the assumption that it involves a social influence process whereby intentional influence is exerted by one person over other people in an attempt to structure the activities and relationships in groups or organisations." (Yukl, 1994, pg. 14)

Otherwise the definitions differ in many respects, such as who exerts the influence, the intended purpose of the influence, the manner in which the influence is exerted, and the outcome of the influence attempt. Yukl holds that there is no 'correct definition, it is only a matter of how useful the definition is for increasing our understanding of leadership.' (Yukl, 1998, pg. 123).

The last part of this section will look at research about gender differences in leadership style and leadership effectiveness.

Several reviews relate to sex differences in leadership style and leadership effectiveness (Dobbins & Platz, 1986; Stratham, 1987). Some studies examine behaviour of men and women in laboratory studies of small, ad hoc groups. Other studies compare men and women leaders with regard to ratings of their behaviour and skills made by themselves.
or others. No differences as far as effectiveness were found. The only difference
between men and women that emerged consistently across studies concerned
participation: women used a democratic style whereas men were more autocratic
(Stratham, 1987). Dobbins & Platz (1986) on the other hand report that sexes did not
differ on in leadership style in studies conducted in organisational setting. They also
found no sex difference in leadership effectiveness According to Yukl (1990) reviews
about the research disagree about the interpretation of the findings. He refers to Bass
that no evidence in sex differences are found, other reviewers conclude that differences
can be found on behavioural style.

In summary, the research on sex-based differences in leadership is inconclusive as far as
leadership style is concerned. However, sex-based differences never seemed to be a
determinant in leadership effectiveness

**Task Performance and Group Boundaries**

From the late 1980's onward a branch of work group research concentrates on group
effectiveness, performance, the influence of the environment and the interaction of the
group with the next hierarchic level in the organisation. The theorists share the idea of
system theory that defines the group as part of a larger environment.

Hackman (1987, 1990) for example offered a normative model of group effectiveness
that stressed contextual factors as an influence on intragroup processes relevant to team
effectiveness. The model takes a systems approach to group performance. Rather than
assuming that variables are linked to one another in a simple, one-to-one relationship,
Hackman identifies several categories of input variables in task and in organisational
context that set the stage for group work. The model offers suggestions for designing
and building effective work groups

Hackman defined three dimensions for task context: First, the Task structure defining a
clear and consistent and meaningful purpose. Second, the Group composition being
well staffed, right sized, with right skills and expertise and heterogeneous enough.
Third, core norms that are clear and strong enough to regulate group behaviour
efficiently and promote group performance. For organisational context Hackman argues
that a change in the reward, education, or information system in the organisation will
lead to changes in the 'process criteria of effectiveness'. Hackman asserts:

"To perform well, a group must (...) exert sufficient effort to accomplish the task
at an acceptable level of performance, (2) bring adequate knowledge and skill to be
good on the task work, and (3) employ task performance strategies that are
appropriate to the work and to the setting in which it is being performed."

(Hackman, 1991, pg. 9)

Group boundaries, weakened by multiple membership, information technology, flexible
work practice is another new theme of interest in the research on groups. Ancona and
Caldwell's research (1992) on how teams cross their boundaries and act on their
environment is an example. The research of Ancona and Caldwell spans five years of
longitudinal studies and forms the foundation of their external perspective.
Rather than sitting on the group boundary and looking inward, we have focused primarily on those team behaviours that are directed outward, toward other parts of the organisation, using an 'external' perspective."

(Ancona & Caldwell, 1985, pg. 634)

Caldwell and Ancona suggest that these external activities and strategies need to be added to the conceptualisation of group process to represent more fully the wide range of what group members actually do.

**Interesting Themes for Innovative Teams**

*State of the Art:* In the decades that group research was influenced by the human relations movement most studies were directed at intragroup dynamics and at the impact of the group on individual members. Currently this interest in intragroup processes has not disappeared, but research on small groups found a new focus, that of group performance effectiveness defined in terms of the products and consequences of group action and the importance of the group’s organisational context and boundaries.

*Difference between task and process:* Bales coined the difference between a task and process which also influenced many theories of leadership. This research emphasises on the process level when leading innovative teams.

*Leadership of small groups:* Most leadership styles are based on the differentiation in process and task leadership. The tendency in the last years is to prefer what is called a participative leadership style for leading complex processes and groups. This kind of leadership will be elaborated on in section 4.4.2.

*Context and Boundaries of Small Groups:* Task groups do not develop and perform in a vacuum, but in an environment, that has or can have a large influence. The way team members and team leaders deal with this environment is of importance. This will be looked at further in section 4.4.2.

**4.3.2 Emergence of Teams**

Before the late 1980’s there was no high interest in teams and their performance or workings for the side of the social or management sciences.

The term itself has some remarkably confusing aspects; original mainly used in the world of 'sports' even there it has many meanings/connotations. Buijs explained that sports teams are not alike at all; consider the difference between a basketball team (players equalised) and a football team (roles are defined), a Formula-1 team (one visible coureur, many invisible engineers and designers) and the analogy between sports teams and what Buijs defined as 'multi-X-team' becomes clear. In the 'multi-X-team' not only differences within the task but also differences within culture, professions, gender and others have to be accounted for (Buijs, 1993, 1998). He also observes the a high demands team members have to meet in organisations.

"Teamwork is not normal corporate behaviour. The average corporate animal loves to fight, sees only very limited, departmental interests and is usually oriented only to personal success. So if we are serious about team management, we really have to do something about it."

(Buijs, 1993, pg. 207)
An upsurge in interest in team literature can be observed in the nineties. This sudden rise in writing about and interest in ‘teams’: goal directed teams, self-leading teams, multi-disciplinary teams just to name a few terms, comes with the urge for higher flexibility, for visible and measurabe output, and for innovation in a dynamic world with faster and vaster changes of the information age to handle. A scan of a selection of well known team books shows the following characteristics:

They are very task and performance oriented, define boundaries of the team and organisation, sometimes work from a systemic viewpoint issues (Amelsfoort, 1993; Syer & Cannolly, 1996), sometimes from a project-management view (Scholtes, 1991). Group development models are restricted to Tuckman’s model of group development. It has been found to designate when a group transforms to a team (performing stage). Mostly team books are written from an ‘hands on’ viewpoint of application with recommendations, checklists and procedures as to how to achieve the wished kind of excellence. Some concentrate on implementing teams in organisations and develop team-based organisations. Self-managed teams are seen to need a lot of training from for instance designated team developers for that special task (Petersen & Hillkirk, 1991; Ray & Bronstein, 1995; Shonk, 1992). Cases and examples are transformed into best practice procedures or questionnaires that will bring the wisdom as fast and efficient to business, as it is wanted there.

Research on teams is in a start phase and has to develop in the group dynamic area. As far as research studies on high-performing and self-managed teams is concerned Yukl reports about this.

“In self-managed teams (or ‘semi-autonomous’ work groups) much of the responsibility and authority for making important management decisions is turned over to a group of people who perform a complex task with highly interdependent activities. (...) In summary the field study found some favourable outcomes for self-managed teams, but the results varied from study to study and did not substantiate the large performance improvements reported in anecdotal reports. the potential benefits may not occur unless several facilitating conditions are present.”

(Yukl, 1998, pg. 362)

Hackman (1991) shares the view on self-managing teams at an earlier date when not so many studies were published:

“It is not surprising that self-governing teams are relatively rare in work organisations. If every group in an organisation were to set its own direction, design its own task and arrange for its own organisational supports, it would be very difficult to achieve well-coordinated collective action in the organisation as a whole.”

(Hackman, 1991, pg. 484)

So what do these books about team literature tell us? Teams are something different than work-groups and commitment and performance are elementary. Katzenbach & Smith (1993) use for instance a hierarchy in the development of teams starting from a working group: no significant incremental performance need, toward a pseudo team: not focused on collective performance and not trying to achieve it, to becoming a real team: really trying to improve its performance impact. The moral of
the book is that much of the wisdom of teams lies in the disciplined pursuit of performance.

Many books also focus on team building with team-audits selection as an important tool. Size is in contrast to many social research books (Hare, Blumberg, Davies & Kent, 1994) often delineated precisely in these books, however the range varies between 2 and 25 members of a team. There is a certain prevalence in recommending teams with fewer members than ten (Syer & Canolly, 1996).

But the ultimate team literature gospel seems to be: performance, performance, performance, and commitment to the good cause.

According to Katzenbach and Smith (1993) it is not only the lack of clear definitions that hamper teams but a lack of discipline:

"Imprecise thinking about teams, pales in comparison to the lack of discipline most of us bring to potential team situations. Teams do not spring up by magic. Nor does personal chemistry matter as much as most people believe. Rather, we believe that by persistently applying the definition offered here, most people can significantly enhance team performance. And focusing on performance - not chemistry or togetherness of good communications, or good feelings - shapes teams more than anything else." 

(Katzenbach & Smith, 1993, pg. 61)

Leadership and facilitation is discussed quite extensively in the team books. If using theory, the models from social science are used (Blake & Mouton, 1962; Hersey & Blanchard, 1982), but more often the advice is more practical and ‘hands on’:

"Leaders believe in their purpose and their people. They keep the purpose relevant and meaningful. They build commitment and confidence. They strengthen the mix of level and skills. The manage relationships with outsiders, including removing obstacles, they create opportunities for others and they do real work."

(Katzenbach & Smith, 1993, pg. 139-144)

Concluding, the relevance and reliability of the best-practices team literature might be questioned by theorists on its validity and generalisability, but it is good reading material for pragmatic oriented practitioners and managers. These might have to defend their time for reflection and experimentation with a rise in the financial bottom line. On the other hand the shadow side of this fast found knowledge seems to be, that much is left to prescription and procedures, self-tests, personality inventories, and many appealing stories of practical successes of others. There is little explication of the assumptions and principles and paradigms behind the recipes, few heuristic search principles and no basic principles that help people to conserve (in the sense of Piaget) and develop and integrate knowledge instead of merely accumulating it.

**Interesting Themes for Innovative Teams**

*State of the Art:* Teams are in fashion and managers and consultants write currently many best practice books and studies on them. Characteristic is the direct applicational value of the books with little theoretical depth of the acclaimed. This might be an incentive for scientific studies in this field as well. A second characteristic is, that group dynamic phenomena are taken for granted as much as the skills known how to handle these. There is a high emphasis on performance criteria, organisational conditions like
rewards systems, systemic wants and task definitions and descriptions. Authority is based on former success more than on systemic and rigorous studies of this depth in line with social research.  

Performance and task: Although this goes beyond the scope of this thesis, it should be noted that team literature builds on notions of performance. The main contribution to the field is the emphasis on task and performance, which are at the core of the team literature.

Team Development and Leadership: Tuckman's model (1956) is favourite in terms of team development theories. From group to team, the group is defined as a lower level of team development, although in terms of Tuckman the team is defined on the performance stage that Tuckman defines the small group. Basic concepts about leadership come from research in this social domain.

Selection and Audits: Typologies, one of the few things that come directly from the small group research is one issue embraced in many team books. Often they are used for selection purposes of the team members or for the leader.

4.3.3 Charting the Historical Development

The developments in the field of Group Dynamics show dynamic and diverse perspectives and contributions to the subjects. In order to make a further analysis of the development of this field with a focus on possible differences in the development of theories on small task groups and literature on teams the different developments from the 1900's onward are visualised in a historical chart. This chart is divided into two periods, the first period starting about 1900 when the thinking about groups and organisations was boosted by the industrial revolution with a break period during the second World War. The period from 1945 till 1998 shows an explosion of developments in the field which is described more closely. The chart after the second world war focusses on a continuum from therapy up to recent team approaches as shown in figure 4.1.

| Group Therapy, psychodynamic models | T-group, Sensitiv. Laboratory approach | Small gr. research, Social Psychology | Socio-technical approach | Teams, high performing autonomous |

Figure: 4.1. Taxonomy / Influences from group psychotherapy to engineering teams

Each of these clusters is illustrated with a selection of important authors in each area.

The chart describes and orders influences on the thoughts and concepts in the fields. These are described below showing the context and the larger picture of the development of thoughts on small groups and on teams. Included in the full chart are typologies and selections as they are found to be of importance for selecting teams, but were mainly developed in social research. The authors chosen are representatives of these clusters.

See Insert: Literature on Small Groups and Teams
Period 1898 - 1942

The subject of groups emerges around 1900 with concepts on the mass from Le Bon, (1895), developing concepts on group psychology (Freud (1922) and group psychotherapy from Slavson, (1940), Moreno, (1946). Group dynamics from Lewin (1936) and laboratory methods from Sherif (1936) and with the views of Taylor (1911) invented the scientific management perspective and Fayol (1916) the engineering view and Mayo (1933) looked at the humanistic aspects of attention and groups in organisations.

Period 1945 - 1998

*Psychodynamic models - Group therapy - Tavistock:* predecessors among others psychoanalysis Freud, 1900, started a new development in psychology with his book “Die Traumdeutung” and later different other works that influenced psychologists and therapists, Jung in his footsteps, and Moreno with the Stegrefthäus in Vienna from another position. This psychoanalytic approach had therapy as an objective. In the footsteps of Freud, (1922), in different countries pioneers like Sullivan (1953), Redl (1942), Pages (1958) and Bion (1950) extended the theory to groups with therapy, social health or community benefit in mind. Next to that group psychotherapy was strongly influenced by the human relations movement (Rogers, 1951). But psychoanalysis also influenced many who developed their own models like the focal conflict model of Whitaker and Lieberman (1964) or the experiential group therapy approach of Yalom (1970). Dies tried to cover the different models in 1992 in different domains but still found the field confused. The model of Bion is the one that had the most influence on ‘healthy’ work groups (Rioch, 1995) and in this tradition also on the approach of the Tavistock Institute starting in the 60’s (Obholzer, 1994).

*Laboratory Approach, T-groups, Sensitivity Training:* the predecessors from this approach came from education with Dewey’s philosophical ideas (Dewey, 1899), from psychoanalysis Freud (Lewin, 1936; Stock & Thelen, 1958), but mostly from Lewin, and the human relations movements (Mayo, 1933). Lewin was one of the most influential scientist a of Group Dynamics which spurred development of research and experimentation with small groups (Lewin, 1947). Sensitivity training and T-group training (Bradford, Gibb & Benne, 1964; Buchanan, 1965; Golembiewsky, 1973), marathon session, Gestalt approach, to name but a few, and later summarising overviews (Schaffer & Galinsky, 1976; Siroka, 1973; Whitacker & Lieberman, 1964; Yalom, 1973) of the proliferating amount of training approaches coming into business by that time. Many of them have disappeared, but some of the theoretical and conceptual findings are conserved in social psychology. The fusion of organisational life and scientific discovery that started in 1947 in the National Training Laboratories and brought forth the T-group, had come to a stop. We can only speculate where the rest of the findings and energy of the laboratory approach went; remnants are found in consultancy and management practice, therapy and professional education, new age movements and in ecology and green earth movements.
Small Group Research and Social Psychology: The original predecessors were the experimental psychologists Wundt (1997) and their contemporaries who founded Gestalt theory (Köhler, 1928; Koffka, 1936). Festinger (1951), Sherif, (1936), Stock & Thelen (1958) and Bales (1953) to name but a few went on in social psychology in the 1950's and 60's mainly on the ideas of Lewin and on the newly insights won in the NTL and other institutes such as the Massachusetts Institute of Technology (MIT). Katz and Kahn (1967) in their classic work give a good overview of developments also close to organisational life.

This small historical analysis can not nor does it attempt to give full credit to all the research done in this field. But one thing noticeable is that from the 1970's onwards more work is done on consolidation and conservation than on developing new theories. Different important readers and research overviews are written (Cooper, 1975; Kolb, Rubin & Osland, 1971-1991) which is followed in the next decade by for instance Forsyth, (1983-1990), Brown, (1988-1993), Hare, Blumberg, Davies and Kent (1994). A new generation of handbooks on research started with West, who published the Handbook of Work Group Psychology (1996) not so much looking for and integrated theory any more but explicitly tolerant of diversity.

Typologies, Selection: The typologies and selection part is added because it became an important issue in the selection of teams. Most of the models were originally designed (Kolb, 1976; Myers Briggs, 1962; Schutz, 1958) for research purposes in a climate of personal development and self-insight of the person only in time extending to occupational research (Kirtom, 1976) and then eventually used more and more as selection instruments for team members (Belbin, 1981; Davey, 1993; Kirtom, 1982; Kolb, 1984).

Socio-technical system approach and organisational development: Predecessors of this approach came from Cybernetics and the thoughts of theorists like Wiener (1948) and Ashby (1956) and Bateson's systemic views on anthropology (Bateson, 1972). The Tavistock group inspired the socio-technical approach from group process ideas of Bion (1950) and cybernetics (Ashby, 1956), system theory (Bateson, 1972; Von Bertalanffy, 1968) and biology in the construction of processes for participative design of work places. After a continuous development of the thoughts on quality of work life, this trend popularity receded but many of their ideas were adopted in management literature (Senge, 1990). This was sometimes in agreement with sometimes in disagreement with the thoughts of organisational redesign (Vansina & Taillieu, 1995, Watzlawick, Beavin & Jackson, 1971) and McWhinney, (1995). Now the socio-technical approach is established and used frequently (Amelsvoort & Scholtes, 1993; Beer, 1994; De Sitter, 1994; Hoebke, 1994) although practised at different levels of applied cybernetics, social theories and philosophy.

Teams, high performing, autonomous: theory builds on system design and task orientation theories (Ancona & Caldwell., 1992; Hackman, 1983) as much as on project management and the socio-technical approach (Amelsfoort, 1993; Beer, 1994; Scholtes, 1993). Teams and their literature are eclectic, but some practitioners seem to invent the wheel anew (Katzenbach & Smith, 1993) or give advice from their own success and
experience as top management or CEO on how to build a team organisation (Harrington-Mackin, 1996; Peterson & Hillkirk, 1990; Ray & Bronstein, 1995).

In conclusion I would like to make two statements referring to this description. The historical chart presented in figure 4.2. does of course not claim to be to be exhaustive in any way, but it illustrates two points:

1. Interest in small groups and their functioning began after the second world war resulting in the laboratory approach and booming research in the social psychological field. From the end of the 1980s the laboratory approach, T-Groups and sensitivity training had disappeared from the research field and receded to education and other application areas.

2. Secondly it can be observed that the team literature emerges at the end of the 1980’s partly inspired by project management, performance management and engineering and social system approaches, but that it seems to be much less influenced by small group theories or by earlier group approaches like the National Training Laboratories developed.

The ‘team’ literature does not build linearly on the body of knowledge generated by the small group research and training T-group literature developed in the 1950’s till the 1980’s. This is rather astonishing considering the vast amount of books and models on the subject. Why did the findings of the pioneers, nor the consolidating handbooks, nor find their way into the developing body of knowledge on teams? Was the validity of their findings not applicable to this subject in the time of the 1990’s? Was their research subject out of date? Were they seen not to have anything to contribute? Were political or commercial issues a reason? Or where they just not known?

Within the scope of this research the answer stays in the realm of speculation. An observation that can be made is, that they didn’t meet much and that whatever meeting there was, not much co-operation came out of it. The interesting question might be; why not, or better why not more? There is ample suggestion from the existing knowledge and literature that management literature could profit from the research and the experience in this period of social science.

4.3.4 Different Metaphors and ‘Logics’

Common thought poses that when positions are different, the truth lies in the middle, but astonishingly in that position there seems to be some dispersed knowledge but little connection. One of the proposals made in the following paragraph, is that the activities of the domains did develop a language, that the other domain did not (want to) speak. The metaphors and ‘logics’ consolidating the thinking did prevent them from finding common ground.

On the one hand task oriented theories have focused more on business output in a practical setting. On the other hand the group dynamic literature developed many theories in a training or experimental setting (sec. 4.2.1). As described in section 4.2.3. the socio-technical approaches have tried and by times succeeded to bridge this gap but
because of their complexity, they are often not fully understood. Before that time a
connection has been tried after WWII by the NTL to bridge between societal issues and
research and business issues of research. The approach dispersed after a decade or two
and little of its heritage is used for teams. It seems that the product/procedure oriented
practitioners do not speak the language of process and that the process/development
oriented researchers do not seek the language of performance, output and economic
bottom lines.

The language and metaphors they use are from different realities as indicated in figure
4.3. An example of the differences taken from their practice and literature and the
differences of the orientations illustrates the viewpoints in figure 4.3.

<table>
<thead>
<tr>
<th>Small Group Research Philosophy</th>
<th>Self-Directing Team Philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psychological Theories</strong></td>
<td><strong>Performance and Output Orientation</strong></td>
</tr>
<tr>
<td><strong>Organisational Development</strong></td>
<td><strong>Management Application</strong></td>
</tr>
<tr>
<td><strong>Values and Metaphors</strong></td>
<td><strong>Values and Metaphors</strong></td>
</tr>
<tr>
<td>+ grows metaphors, person culture</td>
<td>+ fight/power metaphors, task culture</td>
</tr>
<tr>
<td>+ developmental, humanistic models</td>
<td>+ rationalistic models, survival of the fittest</td>
</tr>
<tr>
<td>+ development oriented</td>
<td>+ business oriented</td>
</tr>
<tr>
<td><strong>Objective; Process Targets</strong></td>
<td><strong>Objective; Goal Targets</strong></td>
</tr>
<tr>
<td>+ have we achieved understanding</td>
<td>+ have we solved the problem</td>
</tr>
<tr>
<td>+ process understanding - consultation</td>
<td>+ best solution - expert stance</td>
</tr>
<tr>
<td>+ personal development, risk</td>
<td>+ goal development, risk</td>
</tr>
<tr>
<td><strong>Group process / person oriented</strong></td>
<td><strong>Task process / performance oriented</strong></td>
</tr>
<tr>
<td>+ simple structured task</td>
<td>+ structured and complex task</td>
</tr>
<tr>
<td>+ task manipulated dependent variable to study group process</td>
<td>+ group process manipulated in order to help task</td>
</tr>
<tr>
<td>+ reflection on group process</td>
<td>+ conflict management</td>
</tr>
<tr>
<td>+ pace depends on group</td>
<td>+ high speed</td>
</tr>
<tr>
<td>+ problem creation</td>
<td>+ problem solving</td>
</tr>
<tr>
<td>+ low material reward</td>
<td>+ high material reward</td>
</tr>
<tr>
<td><strong>Concepts about learning</strong></td>
<td><strong>Concepts about learning</strong></td>
</tr>
<tr>
<td>+ individual 'learns' and reflects in group</td>
<td>+ team has to be creative</td>
</tr>
<tr>
<td>+ learning in and between groups</td>
<td>+ learning organisation</td>
</tr>
</tbody>
</table>

*Figure 4.2: Small group dynamics versus team literature*

The *values* the small group philosophy draws on, are of a humanistic and existential
nature. The business oriented team philosophy goes for economical and professional
values that will profit the business and their performance. The small group research is
development oriented, the team world is task oriented. In training and research of the
small groups the metaphors are directed toward growth and insight in a culture centred
on personal learning and humanistic models with personal development as a training
reward. In the performance oriented philosophy of self-directed teams fight and power
metaphors surround the activities helped by rationalistic models to achieve the clear goals and allow for ‘survival of the fittest’.

Objectives of the small group approach might be characterised by saying ‘have we achieved understanding’. A worst outcome might be: theoretical labelling without insight and the best outcome: working through anxieties and psychological handicaps and achieving understanding. The team approach might be characterised by saying: ‘have we solved the problem?’ The worst outcome might be: short term solutions without direction and the best outcome: overcoming resource handicaps and getting expert work done with clear and shared goals. In the one approach it is personal risk and developmental gain, in the other it is goal risk and indirect personal risk in terms of survival or loosing one’s job.

The Group process and person oriented viewpoint is preferred in the small group research philosophy. In the team and business philosophy the Task and performance oriented viewpoint is favoured.

Concepts about learning can be found on both sides. In the small group the individual has to ‘learn’ and reflect on his/her functioning in the group. In the business environment the team has to be creative and innovate. In the small group research environment group processes in and between groups are studied, in the team environment the somewhat obscure metaphor of the learning organisation or the clearer expression of organisational learning is used.

Concluding one might say the metaphors and logics from the small group research philosophy on the one hand and the self-directing team view on the other hand define not only their difficulty in communicating with one another, but also their problem in finding the (re)search issue of the other side relevant to their own problems. Getting insight into a group and oneself is not the objective of the business world on the other hand the ‘bottom line’ does not match easily with the vocabulary of the scientists studying group dynamics and social processes. The first starts of the National Training Laboratory (see 4.2.1) and the socio-technical approaches (4.2.3) were the ones to try to bridge the gap and benefit from the complementary view another domain had, but the challenge stays for quite some others.

4.4 Synthesis

In this section we will deepen the topics that were collected in the ‘themes for innovative teams’ in the sections on pioneer approaches to section emergence of teams. The topics for innovative teams will be further elaborated and theoretically grounded.

At the end of this chapter on Group dynamics the discussed approaches are compared as to their contribution to the topics (table 4.3). In the synthesis main findings of the chapter are summarised and conclusions are drawn.
4.4.1 Topics for Innovative Teams

The topics of interest for innovative teams selected for further elaboration in sections 4.2 to 4.3.2 are: trust formation, group development, leadership, selection issues and typologies, and context and boundaries of groups and teams. The selection concerns social factors and theories that govern the inner dynamics of small groups and teams from different areas of small group research.

**Trust Formation in Small Groups**

In his model on ‘climate for trust formation’ Gibb (1964, 1975, 1991) states that the first dimension of any group formation is ‘acceptance of self and others’.

The model on trust formation (Gibb, 1964) has caught and kept my attention for two reasons. First a theoretical one namely the combination of a psychological and a systemic framework, and secondly a practical one; its applicability as descriptive but also as an intervention model when working as a trainer and facilitator of small groups. It is a cyclic model of development describing and identifying trust as a basic issue.

According to Gibb there are four fixed issues or modal concerns, as he calls them, that every group has to deal with successfully in order to attain a climate of trust in a group. In the 1960’s Gibb has done considerable research on these dimensions (Gibb, 1964). According to his model a person needs to learn to create a ‘defensive-reductive climate’ that will reduce fears and distrusts continuously and thus acceptance of self and others will be achieved. When a person learns to do this in participation with others he learns to create the interpersonal situation that will help him to accept himself and others. That makes changes possible along the other three modal concerns.

“The acceptance concern has to do with the formation of trust and acceptance of self and of others, the reduction of fear of self and of others, and the consequent growth of confidence. This concern becomes differentiated into concerns about degrees of membership in the various groups of which the person is a part [inclusions/exclusion dimension].

The data-flow concern has to do with the flow of feeling and perceptual data through the person or through the group; the system output of behavioural cues and all communicative evidence of attitudes, feelings, and perceptions, and the system input of such data. This concern finds its expression in decision making and choice behaviour in the group.

The goal-formation concern has to do with the continuing assessment of intrinsic motivations in the person or the group and the integration of motivations at various levels into actions sequences, problem solving, and decision making. This concern becomes differentiated into a concern about productivity, about doing work, having fun, ideas, learning or growing.

The control dimension has to do with intrapersonal and interpersonal control or regulatory mechanisms that lead to co-ordinated sequences of behaviour in the person, sequential flow of behaviour in the group, formation of roles and expectancies and integration of function into structure at all levels of behaviour. This process becomes a concern about organisation, which in the sense we are using the term, has all degrees of formality, stability, awareness, and complexity in all variety of social relationships.”

(Gibb, 1964, pg.280-281)
A group in action is continuously confronted with these concerns. There is a certain order: whenever acceptance is low the flow of relevant data will be restricted. With insufficient data it is very difficult to come to good decisions or to commit oneself to a common goal and following actions. When no integration of different goals is found and a shared vision is developed leadership will not be looked at in function of the task but the problems will often be solved by the use of power. This will lead to less acceptance and so on. Contrary to this negative spiral or vicious circle a group can come into there is a positive spiral. Every of the concerns will almost cyclically repeat itself as is shown in figure 4.4.

![Diagram of Positive Spiral of Group Development]

*Figure 4.3: Positive Spiral of Group Development*

The model on trust formation by Gibb (1964) is represented as a positive spiral, the movement a group comes into, once it works optimally. That does not happen by itself. Every concern (see figure 4.4) will almost cyclically repeat itself with every major change a group encounters. Note, that the arrows could also point in the opposite direction which would represent a vicious circle a group might be trapped in. Of course these are ideal types, Gibb (1964) reports that ‘the categories are in no sense discrete, but are highly interdependent and that all variations in the concerns can come up’. Groups will return to one or to other and not very much consistency is found. According to this model any major change (e.g. of membership) will bring the group
back to an earlier point in its development, as acceptance has to be found again in the new situation. This is supported by findings reported by Buijs on multi-X teams (Buijs, 1993). He states ‘the biggest single problem in team management proved to be the changing of team members’ (Buijs, 1993, pg. 212).

The counterpart of too much trust or better stated in Janis’ terms some conditions coming with too much cohesion can be detrimental in a group and lead to what Janis has coined as ‘Groupthink’.

“Highly cohesive groups sometimes foster a phenomenon called ‘groupthink’ that undermines effective decision making.”

(Janis, 1989).

Victims of groupthink have a high chance to overestimate the chances of success of risky activities as they guard against any information from outside that might be dissident and keep an illusion of high internal harmony and cohesion in the group by avoiding all disagreement. The group acts like a closed system, that is no more able to test its assumptions on basis of valid information. An example from Janis himself describes vividly the symptoms of groupthink in Truman’s advisory group.

“Excessive risk taking based on a shared illusion of invulnerability, stereotypes of the enemy, collective reliance on ideological rationalisations that supports the belligerent escalation to which the group became committed, and mindguarding to exclude the dissident views of experts who questioned the group’s unwarranted assumptions.”

(Janis, 1982, pg. 71)

The safe-guard against group think is to allow the group to function like an open system and foster a level of trust that allows for criticism, free flow of information and conflicting views in the group.

**Group / Team Development**

Of the diverse models on team development the one of Tuckman is the most known and used. In 1965 Tuckman undertakes to integrate some of the models and creates a global model of group development (Tuckman, 1965). It becomes the most popular and most cited model probably because of its relative simplicity and high face value. Although it does not give very deep psychological dimensions it holds the middle between task concern and process concern and explains why a gathering of people had to follow a path to become a group. The interesting thing about the developmental phase model of Tuckman is, that the process of basic trust building happens in the first three stages, while very often groups are formed and expected to work immediately in a performing mode.

The later version of the adjusted model holds five phases of development, that the group has to go through:

**Forming** This first phase is characterised by a high degree of uncertainty. Curiosity and reserve interchange.

**Storming** The second phase is one of testing of the other members and of the leader. Questions of individuality versus dependence on others, autonomy versus intimacy in the group, control and leadership are important themes.
Norming  The group starts to develop cohesion, togetherness and camaraderie. The basic patterns for a right tackling of the task and the ‘right’ behaviour of the group are laid out.

Performing  The focus of energy has changed from getting to know and understand each other to commitment and working on the task or the chosen objective. Results are achieved and the members work from a shared vision to the goal and create output.

Adjourning  Group attention is moving from performing to the ending of the group and its activities. Group members start to give thoughts to what is coming next or they are working through the emotional goodbye. The last phase becomes a bridge between the now and the time ‘after the group has ended’.

<table>
<thead>
<tr>
<th>forming</th>
<th>storming</th>
<th>norming</th>
<th>performing</th>
<th>adjourning</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>start up phase</td>
<td>performing phase</td>
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Figure 4.4.: Adapted from Tuckman’s Phases of Team Development, 1965

A practical remark: in team building projects a ‘start up’ phase is sometimes allowed for. In terms of Tuckman this would be a fast lead through the first three phases of group development. The model is of course a map to cover an aspect of reality but never reality itself. So any combination, reversal, iterative movements in the phases of the model is possible and might be encountered in real life.

Starting groups often find the frame helpful because it explains a lot of their experiences with groups, but when working with groups as a practitioner it is difficult to discern distinct phases at the moment they happened (authors comment). Forsyth agrees with this comment on the model:

“Tuckman’s stage model, however, cannot be applied without qualification to all groups. (...) Some groups manage to avoid particular stages, others move through the stages but in a unique order, and still others seem to develop in ways that can’t be described by Tuckman’s five stages. (...) Many theorists also prefer cyclical models to the stage theory proposed by Tuckman (Hill & Gruner, 1973; Shambaugh, 1978, [Whitaker & Lieberman, 1964]). Bales (for instance) argues that mature groups tend to shift back and forth between what Tuckman calls the norming and performing stages; a period of prolonged group effort must be followed by a period of cohesion-creating interpersonal activity.”  

(Forsyth, 1990, pg. 89-90)

A colleague scientist (Kuipers, peers talk, 1993) found the model ‘too simple’. It could be that the advantage of the model, its face value, disappears as soon as the phases are operationalised into observable behavioural categories. Yet despite these theoretical objections the model summarises much of what we know about group development.
Leadership of Teams

As referred to in the definitions of leadership it is a tendency in present research to define leadership in a reciprocal, transactional, participative way that is much subject to the need of the situation and to the task at hand (sect. 4.2.5). Different styles of decisions making are contingent with different situations.

The model of participatory leadership describes the impact of group members’ participation in making decisions on the group’s performance. At one end of the participation continuum the group members have full discretion and decide themselves on the issues at hand. At the other end the leader alone weighs the available information and makes the decision. Yukl distinguishes four styles:

1. Autocratic decision: the manager takes the decision alone without asking for the opinion or suggestions of other people, and these people have no direct influence on the decision. There is no participation.

2. Consultation: The manager asks other people for their opinions and ideas, then makes the decision alone after seriously considering their suggestions and concerns.

3. Joint decision: The manager meets with others to discuss the decision problem and make a decision together; the manager has no more influence over the final decision than any other participant.

4. Delegation: The manager gives an individual or group the authority and responsibility for making a decision; the manager usually specifies limits within which the final choice must fall, and prior approval may or may not be required before the decision can be implemented.” (Yukl 1994, pg. 123)

![Diagram](image)

**Figure 4.5:** The Delegation Continuum Adapted from Tannenbaum & Schmidt (1958) and from Vroom & Yetton (1973)

The four styles are pictured by the delegation continuum in figure 4.6. Vroom and Yetton (1973) have designed a decision tree for managers. It helps the leader to decide when a decision is to be shared with the team and when not on the criteria of influence and whether he or she needs a high degree of acceptation.
Hackman (1991) goes one step further in his advice for team leaders. He admonishes leaders of groups and teams not to fall of what he calls ‘the authority balance beam’ (1991, pg. 479). He believes that it is a difficult task to achieve a good balance of managerial and team authority. This means that it is not enough to merely decide where to split authority between the group and the management. Hackman suggests that it is equally important to look at the domain of authority.

“Our findings suggest that managers should be unapologetic about direction - the end states the team is to pursue (...) the things the team must always do or never do. At the same time, managers should assign to the team the full authority for the means by which it accomplished its work - and then do whatever they can to ensure that team members understand and accept their responsibility and accountability for deciding how they will execute the work.” (Hackman, 1991, pg. 479)

**Selection and Typologies**

Selection in small group research was not the main topic in small group research, but many typologies and inventories: styles of leadership, learning styles, team roles, cognitive styles, conflict styles, stem from that domain (Blake & Mouton, 1962; Kolb, 1984; Thomas, 1976).

Team literature finds selection of team members very important, but not necessarily on personality or behavioural styles. Katzenbach & Smith (1993) clearly state to select members on skills and skill potential but not on personality. For them technical and functional skills are important problem-solving skills and interpersonal skills. Other authors are quite explicit that style inventories like the one of Kolb (1984) are valuable selection tools (Amelsfoort, 1993). Hackman (1991) takes an in-between position and poses in his criteria for group compositions that the group should find the right balance in terms of heterogeneity. The members should not be so similar that there they do not learn much from each other, on the other hand the difference should not exceed their capacity to communicate or co-ordinate their actions. (Hackman, 1991). In practice many assessment centres offer team audits and inventories as a service to management (Belbin, 1981; Van Minden 1988).

Inventories measure preferences which are neither good nor bad but appropriate or less appropriate in different situations. (Team building) inventories are very popular in the business world as they can be applied easy and fast and usually have a high face validity. Sometimes the models are used as a sole instrument of team building without understanding that the building and development of a group is not the same as the assessment of it according to defined models or typologies. From knowing each other’s style to working effectively together might be a long path still to go. Yet the inventories can be helpful in going that path. Three currently used inventories for team building and (group) assessment are shortly described below.

Groups Dynamics in Small Groups and Teams 79
“Learning Style Inventory: Kolb

The model behind this inventory is based on theories of Piaget, Jung and Dewey. The four learning styles of Kolb (Kolb, 1984) are by now almost classic and are often used to give people insight in their ways of working. The four styles adaptor (doer), diverger (dreamer), assimilator (thinker) and converger (experimenter) are in principle present in each person, but people have different profiles. Newer research has claimed that the styles might change with the situation.

Team Roles: Belbin

Belbin’s eight team roles (Belbin, 1981) necessary for group functioning, capture the activities that have to be performed in a task group. Everyone has certain preferences in taking the role of: chairman, shaper, plant, monitor evaluator, company worker, resource investigator, teamworker or completer finisher. Usually people have three main roles in their profile. Note, that the names of the types do not always accord with their literal meaning.

Kirtom’s Adaptor Innovator Instrument: KAI

Highly cross validated in numerous research this inventory deals with creative styles of problem solving. Kirtom (Kirtom, 1987) describes two different problem solving styles on the extremes of the Gaussian normal curve. Both styles solve problems, both styles are creative but in a different way. The adaptor works toward his solution from within the paradigm, the innovator finds the solution by breaking and reframing the paradigm.” (adapted from Hohn, 1996, pg.154)

Concluding, some theorists state, that it is of no use to measure personality and team role variables beforehand in a new team to get a better 'fit', better dynamics and better creativity. The team creates its own way through the interaction of task, approach and people and many characteristics come out and/or are developed while working. Other theorists claim that ‘designing the team on the drawing board’ (Belbin 1981) can have its benefits. All team literature agrees, that whatever one does with the personality factors, teams should be selected on task and skill variables.

**Group/Team Boundaries and Context**

If not directed well, group processes more often go wrong than right. Ancona and Caldwell in a longitudinal study found that this does not only go for the group dynamics in the group but also for the behaviour the team shows toward its environment. The group process has an external component. That is team members and the team leader also interact with outsiders, seeking information and resources, interpreting signals and moulding external opinions.

In their research Ancona and Caldwell (1993) describe a wide range of activities that groups use to carry out their complex tasks and they identified three general modes of interacting with the organisational environment and surroundings. The *scouting mode*: seeking information from as many sides as possible and adding to the expertise of the group. The *ambassadorial mode*: activities in this mode provide access to the power structure of the organisation. Resources are secured and the team is protected from excessive outside pressure and interference. Finally the *task co-ordinator mode* encompasses activities that manage horizontal dependence with other units through co-ordination, negotiation and feedback.
Ancona and Caldwell reported two main findings

"Some teams specialised in one particular activity, e.g. ambassadorial and technical scouting teams; others showed relatively low scores on all activity sets e.g. isolationist teams; and still other were more like generalists; combining ambassadorial and task-coordinator activity, e.g. comprehensives. (....) The external strategies show different relationships to performance. While both ambassadorial and comprehensive strategies are related to achieving budgets and schedules in the short term (time 1) only the comprehensive strategy is positively related to performance over time (innovation, time 2). Both the technical-scouting teams and the isolationist teams have poor performance over time."

(Ancona & Caldwell, 1992; pg. 658-659)

In an earlier article Ancona (1990) has suggested that the team leader also plays a large role in determining the team's external strategy. She wondered how leaders would choose to direct their team. It would be also interesting to identify which tasks are mainly done by the leader and which tasks are done by the team members in the different activities that teams engage in with the outside world. In the above report of Ancona and Caldwell this differentiation is not yet made as such.

4.4.2 Comparison of Theoretical Orientations

In this section the topics for innovative teams are presented in table 5.2. This overview is presented with references to the paragraphs. In these paragraphs the conclusions on the question posed at the beginning of this chapter will be summarised.

Small Group versus Team Controversy

In this literature survey a distinction is made between the literature on small (work) groups and the explicit team literature. The question was whether there are contrasts and differences in the views found in the books and articles.

The development of thoughts about groups originated from the beginning of the century; after the second world war the full acknowledgement and sponsoring of small groups research began. Many new theories and research on groups and group dynamics come forth by the end of the 1950's till the late 1970's. Consolidation sets in and readers and surveys are published. A surge of interest in groups/teams starts halfway the 1980's based on the questions organisations pose for higher flexibility and management of complex tasks to which teams are an answer. Yet instead of building forth on the existing literature on small groups there seems to have been a split between the further development of work groups and what is by now called teams in the management literature. This new body of books about teams takes a different view on the subject and starts from performance, organisational advice, best practice examples and applicable checklists for the manager and team leader.
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<th>Stages in Group / Team development</th>
<th>Leadership of Small Groups Teams</th>
<th>Context and Boundaries of Groups / Teams</th>
<th>Selection and Typologies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lewin’s Group Dynamics and NTL</td>
<td>yes, quite elaborate; model of Gibb among others sec. 4.2.1, 4.3.1</td>
<td>many models; most known Tuckman sec. 4.2.1, 4.3.2</td>
<td>yes, many theories originated there, styles sec. 4.2.4, 4.3.3</td>
<td>implicit, T-group failed in transfer learning sec. 4.2.1</td>
</tr>
<tr>
<td>Symbolic theories frames from therapy</td>
<td>important; but seen differently in developm. terms sec. 4.2.2</td>
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<td>implicit self-knowledge important sec. 4.2.2</td>
<td>implicit if any based on family systems, sec. 4.2.2</td>
</tr>
<tr>
<td>Tavistock, socio-technical systems</td>
<td>taken from Psychoanalysis (Bion) sec. 4.2.2, 4.2.3</td>
<td>taken from Psychoanalysis (Bion) sec. 4.2.2, 4.2.3</td>
<td>theories used from small group research sec. 4.2.3, 4.2.4</td>
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<tr>
<td>Social research on Small Work Group Psychology</td>
<td>Investigations elaborate from NTL, influence on group res. sec. 4.2.4</td>
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Table 4.3.: Overview of the different theories dealing with selected topics for innovative teams

The question at the beginning of this chapter was posed whether the theories and findings of small group research and social psychology provide answers to issues on the relational-process level of teams and their development. Judging from the team literature this does not put a high emphasis on most of the findings from social science. Judging from the viewpoint of the social sciences (sec. 4.1), as in their view small work groups and teams are identical, it is evident that in their view teams benefit from the social science domain. At this point, it can be concluded that social science literature and team literature differ on many points. They forgo and miss out on the challenge of benefiting from their complementarity. I propose that both domains could and should make use of each others findings. Thinking from a social science point of view, it should be the social scientists who should, with their vocation in mind, make a first step.
Bridge to the next chapter

The next chapter will start with the first theoretical survey investigating the contribution of the field of creativity and environmental restraints and stimulants as to concepts and ideas that can be related to the relational process level of teams.
5 Creative Climate

5.1 Introduction
5.1.1 Creativity and Innovation
5.1.2 Definitions of Creativity
5.1.3 Innovation and Creativity
5.2 Creative Climate in Organisations
5.2.1 Research on Work Environments;
         van Gundy’s Summary of Climate Factors
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5.2.3 Creative Climate in Work Environments; Amabile and Gryskiewicz
5.3 Creative Climate in Small Groups and Teams
5.3.1 A Climate for Creative Sessions
5.3.2 The Team Climate Inventory
5.3.3 Creative Climate and Leadership
5.4 Synthesis
5.4.1 Comparison of Climate Inventories
5.4.2 Topics for Innovative Teams; Comparison of Theoretical Orientations

The chapter Creative Climate concentrates on the relatively new domain of creativity and innovation with recent research and theories about creative climate. First summaries of selected theories are given, creative climate is placed in the context of creativity and innovation. Then theories and the subjects are viewed from organisational and small group perspective. The chapter ends with a synthesis of these themes and a comparison of the theories and topics.
5.1 Introduction

Does creative climate in groups imply by the very metaphor of climate that it manifests itself like the weather? That is like one of these ever chaotic systems that stay unpredictable (certainly in Holland) within their given constraints? Creative climate is a metaphor for the social components of the environment, the social ‘atmosphere’ to stay in the image. The assumption is indeed that some ‘social climates’ are better surroundings for the successful generation of creativity and innovation than others including their ‘weather conditions’.

This chapter explores the background of this assumption and the possible contribution of models on creative climate for the relational-process level of successful, innovative teams. After an introduction into the many definitions of creativity a short elucidation of the four P’s of creativity theories (Rhodes, 1961) will be given as a classification tool. Creative climate will then be delineated and placed within the domain of creativity theories. The connection between creativity and innovation is subsequently clarified from different viewpoints.

Creative climate for teams with an innovative task is the central theme in this literature study. Research on creative climate in organisations and on social climate in small groups are focal points, followed by best practices to create a climate in creative sessions, and research on the leadership and facilitation needed to attain it. The chapter will continue with a discussion of the different inventories on climate. Subsequently the account of the identified topics for innovative teams will be discussed.

5.1.1 Creativity and Innovation

Creativity has been the realm of divinity for a long time in history. Creative genius was a god given present to the creative person and not subject to investigation. In the renaissance and later in the romantic movement divinity was replaced by ‘nature’, but still creativity was considered to be inborn and not something to be learned or studied. So creativity is a young field of research starting out at the end of the 19th century. In a way William James (1890) is a forerunner on the investigation of creativity. This is even more true of Wallas (1926), who coined the creative sequence, ‘preparation, incubation, illumination, verification’ based on his study of creative people. A true milestone was placed in 1950 when J.P. Guilford addressed the American Psychological Association on this issue and qualified creativity to be an object of psychological investigation. From that moment on a bulk of research started in the domain of gifted children and its correlating concept of effective human intelligence (Gardner, 1983; Guilford, 1950, 1987; Simonton, 1990; Sternberg, 1985). Tests of creativity were generated parallel to an enormous amount of intelligence and personality measures (Kitton, 1976; Torrance, 1959) and the study of famous creative individuals and ‘how they did it’ and what kind of special qualities they had (Csikszentmihalyi, 1965; Gardner, 1993; Getzels, Csikszentmihalyi, 1976). Gradually the method originally coined by Wallas became applied in creative thinking techniques (Gordon, 1961;
Osborn, 1963; Parnes, 1992) and applied in innovation in organisations (Rickards, 1990; Buijs, 1984). Conferences on creativity (Geschka, Moger & Rickards, 1994; Isaksen, Murdock, Firestien & Treffinger, 1993; Rickards, Colemont, Groholt, Parker & Smeekes, 1991; Taylor, 1972) were held, organisations emerged who fostered creativity and very sparsingly universities accept it as a qualified subject to be studied with examples like Buffalo State University, USA; Delft University of Technology, Netherlands; Manchester Business School, UK; Batelle Institute, Germany. Some authors observe that the divine part of creativity has been lost or has gone unnoticed (Barlow, 1989) as research focuses often solely on the measurable characteristics and trainable skills of creativity.

5.1.2 Definitions of Creativity

What are we talking about when we say 'creativity'? In his book 'Why Fly' of 1995 Torrance reviews the definitions of creativity of earlier articles. A few segments of the summarised viewpoints are given here to illustrate the discourse.

"Thurstone (1952) argued that an act is creative if the thinker reaches the solution in a sudden closure that necessarily implies some novelty for him or her. (...) Stein (1953) contrary to Thurstone insists that creativity must be defined in terms of the culture in which it appears. To him, 'novelty' or 'newness' means that the creative product did not exist previously in the same form. It may involve a reintegration of existing materials or knowledge, but it must contain new elements. Stein also believes that to be creative the novel work must be 'accepted as tenable or useful or satisfying by a group in time.'" (Torrance, 1995, pg. 66)

Welsch: on the basis of the survey of the literature proposes the following definition:

"Creativity is the process of generating unique products by transformation of existing products. These products, tangible and intangible must be unique only to the creator and must meet the criteria of purpose and the value established by the creator." (Welsh, 1971)

Personal creativity versus societal creativity is more often discussed (Boden, 1994) but it remains still an unresolved issue in the field. Other authors ask themselves the question what creativity is and how it happens? Again we draw from the summary of Torrance for some of the definitions.

"Anderson (1959) emphasises the search for the truth and living truthfully as part of his definition of creativity. (...) To Ferren (1953) the creative product must represent a successful step into the unknown. (...) Bartlett (1958) employs the term 'adventurous thinking', which he defines as 'getting away from the main track, breaking out of the mould, being open to experience, and permitting one thing to lead to another'. (...) Spearman (1930), for example, saw creative thinking basically as a process of seeing or creating relationships, with both conscious and subconscious processes operating. Ribot (1960) and others after him have emphasised the capacity of thinking by analogy as the essential, fundamental element of creative thinking" (Torrance, 1995, pg. 68).
In contrast with the authors in the above paragraph, who relate the definition of creativity to the truth and adventurous thinking, or to the creative process, Guilford was the expert in the mental abilities approach of creativity.

"Guilford (1950, 1959, 1960) has conceptualised creativity in terms of mental abilities involved in creative achievement. In his well-known structure of the intellect, he sees creative thinking as clearly involving what he categorises as divergent production. Included in the divergent thinking category are the factors of fluency, flexibility, originality and elaboration. He has concluded, however that creative thinking cannot be equated with divergent thinking. He believes that the redefinition abilities and sensitivity to problems are also important in creative thinking." (Torrance, 1995, pg. 69)

Quite justifiably creativity may be defined in many ways but the viewpoints are quite conflicting by times. In 1959 Taylor states that there are more than 100 definitions of creativity in the literature. Many (Taylor, 1972; Welsch, 1980) had hoped to reconcile the different viewpoints in this crowded and confused domain. But more than twenty years later Treffinger, Isaksen & Firestien still conclude: 'One of the major reasons for the complexity of the field of creativity research is the diversity of theoretical perspectives.' (Treffinger, Isaksen & Firestien, 1983)

In this confusion of theories there is one enlightening classification: in 1961 Rhodes fights his way through the semantic jungle of definitions and designs a grouping and taxonomy for the different theories. Using a method called prism analysis he defines four strands of theories, the 4 P's of creativity. They are circumscribed by his own words as follows:

"I observed that the definitions [of creativity] are not mutually exclusive. When analysed, as through a prism, the content of the definitions form four strands. Each strand has unique identity academically, but only in unity do the four strands operate functionally. (....)

Persons The term person as used here, covers information about personality, intellect, temperament, physique, traits, habits, attitudes, self-concept, value systems, defence mechanisms and behaviour. (....)

Process The term process applies to motivation, perception, learning, thinking and communication. Essential questions about process include: What are the stages of the thinking process? Are the processes identical for problem solving and for creative thinking? (....)

Press The term press refers to the relationship between the relationship between human beings and their environment. Creative production is the outcome of certain kinds of forces playing upon certain kinds of individuals as they grow and as they function. (....).

Products The word idea refers to a thought which has been communicated to other people in the form of words, paint, clay, metal, stone, fabric and other material. When we speak of an original idea, we imply a degree of newness in the concept. When an idea becomes embodied into tangible form it is called a product.” (Rhodes, 1961, pg. 307-309)
The four P’s are generally accepted as classification in authoritative writings (Buijs, 1993, 1996; Isaksen, 1987; Treffinger, Isaksen & Firestien, 1993;) and will be used as such in this research.

Torrance (1995) states that in real theories on creativity all issues should be dealt with. With the above in mind creative climate or press is thus part of a larger frame, but will be dealt with here exclusively within the scope of this investigation. Press, a short hand for environmental pressure (Rhodes, 1961, pg.308), is often envisaged as surrounding the other concepts. The term is used here interchangeably with (creative) climate. Figure 5.1. illustrates the relationships of press with the other domains in the four P’s.

Figure 5.1: the four P’s of Creativity

As far as creativity is concerned the definition of Amabile (1996) is used as source of inspiration and guideline in this research because the definition deals clearly with the product side of creativity.

“A product or response will be judged as creative to the extent that (a) it is a both novel and appropriate, useful, correct or valuable response to the task at hand, and (b) the task is heuristic rather than algorithmic.”

(Amabile, 1996, pg. 36, earlier 1988)

Within creativity research there is an increasing understanding that creativity has to be seen in context (Amabile, 1996). There are systemic and situational aspects involved in the environment of a creative person and a creative group. Csikszentmihaly states that next to a good internal process, values and skills, the outcome is always judged by the outside world within the given context (Csikszentmihalyi, 1988).
By considering the impact of social influences not only on the individual’s creative work but also on the ultimate acceptance and success of that creative work in the environment, creativity theorists have started to include innovation in their perspective.

5.1.3 Innovation and Creativity

Buijs refers to Nystrom when relating creativity to the process of innovation. ‘Creativity is seen as the cause and successful innovation is seen as the effect.’ (Buijs, 1984)

> "Simply defined it [innovation] means the introduction of something new. However, a number of semantic problems arise when using this simple work definition. When something new is introduced, some preliminary action is necessary to come up with the idea. This leads to the initial confusion between inventions (coming up with something new) and innovation (the successful introduction of the new idea)."

(Buijs, 1993, pg. 237)

Buijs speaks about innovation as a ‘Gestalt-switch’, a mental leap which helps to make the radical change in the mind that gives the new perspective.

West and Raff report many approaches and after screening and selecting the general elements in innovation they arrive at the following definition:

> "[Innovation is] the intentional introduction and application within a role, group or organisation of ideas, processes, products or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, the group, organisation or wider society."

(West & Raff, 1990, pg. 9)

This definition implies no absolute novelty of an idea, but it should be new to the relevant unit of adoption.

Tudor Rickards, after a careful analysis of the implicit and perhaps misleading assumptions in all definitions, discusses and challenges some of these assumptions and enriches the view on innovation considerably.

> "The implicit assumption in much of the literature suggests that innovation is a process which begins with a creative idea and ends when that idea is implemented. This separation of a ‘creative’ stage and a ‘non-creative’ implementation stage has had significant real-world consequences in the appropriation of creativity within a subset of individuals, within a subset of functional roles and activities, and within a poorly defined ‘front end’ of the innovation process. It alleviated to some individuals the status of ‘thinkers and creators’ while reducing the status of others to ‘pairs of hands’ or at best the inferior status implied in the terminology ‘support-staff’.

(Rickards, 1996, pg. 14)

As referred to in section 1.3.2. Rickards claims nothing less than that innovation should be understood as a ‘socially constructed reality.’ (1996, pg.19). In this vision creativity is a dynamic that should be found throughout the process of innovation. He calls it ‘a social problem-solving process of a non-routine kind’ (Rickards, 1996, pg. 15).
A provocative position is taken by De Bruyn (1997), one of the founders of the Centre for the Development of Creative Thinking, with his claim that 'the innovation process drives out the creativity' based on the assumption that innovation is a fully planned and rather mechanical process. He advocates the implementation of the creative attitude in the whole organisation and has designed the TIPCI model for this purpose. This stands for: Involving a Topmanager, making room for an Intermediate space to work in, using Project groups, working with Creativity techniques and using Idea management (De Bruyn, 1997, pg. 113). Although we do not share the idea of juxtapositioning creativity and innovation, the model is mentioned here because of its pragmatic value when introducing creativity in organisations and building a mind-set for the unfamiliar.

In fact what is intended with the TIPCI model comes close to the conditions for creativity dynamic and mental leaps (Holyoak & Thagard, 1995) that are associated by Rickards and Buijs to be necessary in the process of innovation.

Concluding it can be said that thoughts and definitions on creativity and innovation develop in the direction that it is not an 'either or' between creativity and innovation but a spectrum between the fuzzy-social to the project-technical. This is a line along which the innovation process moves on, no matter where it starts.

An interchange of creative and logical stages seem by now to be more generally accepted, certainly in the viewpoint of creativity theorists (Rickards, 1996).

This is most clearly illustrated by the development of the Creative Problem Solving Process as originally defined by Osborn-Parnes (1993). The model has developed into the six-stage model (see figure 5.2) and then into the 'ecological' model (see figure 5.3) of CPS in the Centre of Creative Studies in Buffalo State College (Isaksen & Dorval, 1993). In the figures below the last two models of Creative Problem Solving are quoted starting with the six stage model of Isaksen and Treffinger (1985).

Figure 5.2: Isaksen and Treffinger’s CPS six stage model (Isaksen & Treffinger, 1985, adapted from Parnes, 1992)
Based on empirical evidence, Isaksen and Dorval (1993) developed the CPS model further and added a focus on task appraisal to assist the problem solver or facilitator in determining the appropriate approach. The purpose of task appraisal is to examine the people, the situation and the desired outcomes of a task to determine whether or not CPS is the most appropriate process to apply. The change in their new model is from the strict linear approach as shown in figure 5.2. to what Isaksen & Dorval (1993) call the ecological model of creativity. This model emphasises that all elements of creative thinking are connected with each other and that no particular sequence or procedure has to be followed (figure 5.3). One could start the process from any angle as long as the task requires this. Isaksen & Dorval state about the new model:

"The ecological framework will allow for more effective inquiry into how the desired outcomes of the task, the orientation of the people involved, and the situational outlook of the context interact to effect the use of CPS."

(Isaksen & Dorval, 1993, pg .137)

Figure 5.3: Ecological CPS model of Isaksen & Dorval (1993)

**Topics for Innovative Teams**

The following concepts within creativity and innovation definitions are considered to be of interest for concepts on the relational-process level of innovative teams:

*Importance of Context for Creativity*: Context is important for creativity and defines the terms of the creative climate. This is important for innovative teams who do not work in a vacuum but in their own organisational and or political environment and context.

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Creativity within Innovation: Innovation and creativity are intertwined. The last is an integral part of the innovation process, this is generally accepted for the fuzzy front end of an innovative project, but ideas develop presently in the direction that creativity is needed overall in this process. Rickards (1996) calls the innovation process a social-problem solving process, Isaksen & Dorval (1993) changed the sequential Creative Problem Solving model to an ecological one, that makes the start of the creative process contingent upon the situation and task.

5.2 Creative Climate in Organisations

In this section research and the from there developed inventories on creative climate in organisation will be described. In contrast to the many empirical studies on the influence of educational environments (Isaksen, Murdock, Firestien & Treffinger, 1993; Torrance, 1995) not many climate studies in work environments are found (Amabile, 1996). At the end of the eighties Van Gundy in a summary of existing literature on creativity and innovation described ten climate factors (Van Gundy, 1987; sec. 5.2.1). Next to Van Gundy’s factors the results of two classical studies will be described. The climate research of Eckvall published in 1983 (sec. 5.2.2) and a critical incidents study of Amabile and Gryskiewicz published in 1987 (sec. 5.2.3). A rough comparison of the climate dimensions in these studies will be made at a later stage in this chapter and can be found in section 5.4.1.

5.2.1 Research on Work Environments; Van Gundy’s Summary of Climate Factors

Van Gundy undertakes to summarise the existing literature on creative climate in creativity and innovation. He follows Abbey and Dickson in his definition of climate as ‘a relative enduring quality of an organisation’s internal environment that results from the behaviour and policies of members of the organisation especially top management’ (Abbey & Dickson, 1983, pg. 352). From the found literature he identified ten interrelated climate factors which are summarised below.

1. Autonomy: Freedom and discretion to innovate, low levels of supervision
2. Performance Reward Dependency: Rewards are perceived as fair, appropriate and based on ability and past performance instead of luck or who you know. Motivation is more internally based instead of upon fear.
3. Risk Taking: The willingness to try new procedures and take risks, top management allows workers the opportunity to fail
4. Support for Creativity: The organisation's openness to ideas and its’ willingness to support change.
5. Tolerance of Difference: Tolerance of diversity will help increase the number of innovative proposals. It will also increase the conflict that often accompanies diversity
6. Personal Commitment: A high level of devotion to the job; going beyond routine responsibilities
7. Top Management Support: Support of top management is essential ingredient without which creative climate is unlikely to exist.

8. High responsibility for initiating ideas: A sense of responsibility employees have for idea initiation and initiation of innovation proposals.

9. Job Security: Perception of high job security and a sense of stability may increase motivation to suggest new ways of doing things.

10. Moderate degree of ambiguity: Perceived ambiguity about the job environment will create performance gaps that are motivating employees to innovate. But theories are not unanimous about this point. (adapted from Van Gundy, 1987, pg. 370)

In 1996 Amabile reports the results of several studies on these dimensions, which do suggest facilitative and inhibitory social-psychological effects of the work environment on creativity. The best atmospheres appear to be those with little extrinsic constraint, little interference with work, and little cause for concern with problems (such as unemployment) that are extrinsic to the research problems itself. Other researchers have discovered aspects of work environment that appear to affect creativity and innovation. Amabile reports finding of the positive impact of freedom or autonomy in different studies. (Amabile, 1996, pg. 210, 216).

5.2.2 The Climate Metaphor; Eckvall's Theory

The climate metaphor is developed by Eckvall who designed in 1980 an instrument for measuring organisational structure and climate for creativity and innovation later revised under the name Creative Climate Questionnaire (Eckvall, 1990). Eckvall describes climate in an ‘objectivistic’ sense as a characteristic of the organisation. It is an interplay between attitudes, feelings and behaviour independently observable from the perceptions and understandings of the members of the organisation.

Within this definition climate is not to be confused with organisational culture. Schein defines organisation culture on three levels: artefacts, values and norms and basic assumptions (Schein, 1992). Creative climate as introduced by Eckvall manifests itself on the level of ‘artefacts’ in terms of verbal and non-verbal, visual and audible behaviour patterns. According to Eckvall the organisational climate can enhance or restrain creativity and innovation in an organisation. In his instrument the Creative Climate Questionnaire (CCQ) he describes ten different dimensions received after an extensive factor-analytic study (Eckvall, 1996). They are summarised here with the original names of the factors and the typology of organisations as given by Eckvall:

1. Challenge: The amount of emotional involvement of the employees in their work and in organisational goals. High challenge in the organisation shows people who have fun and find importance in the organisation and invest a high amount of energy in their work. The other extreme, low challenge, shows a feeling of alienation and non-involvement, apathy and disinterest as much for the work as for the organisation.

2. Freedom: A high amount of freedom and discretion brings about a high amount of interaction and communication in the organisation. Employees discuss problems,
solutions, alternatives, are rich in initiative and dare to take decisions. Little freedom according to Eckvall involves a climate with passive people, rule bound and afraid to break any limits.

3. **Idea Support**: In a supportive climate, ideas and suggestions are welcomed and sustained by bosses and by colleagues. People listen and encourage initiatives and ideas as much as the possibility to try them out. With low supportive climate ‘no’ is the most heard word once a new idea is mentioned. Counter-arguments, fault findings and thresholds are the common ways to react to any new initiative.

4. **Trust/Openness**: This refers to emotional safety in the organisational relationships. When trust is high there is daring to voice ones thoughts and ideas without fear of laughter or jealousy. Communication is open and free. Once trust is missing people become distrustful and afraid to make costly mistakes. They also keep their best ideas to themselves for fear of exploitation or stealing.

5. **Dynamism/Liveliness**: In a highly eventful organisation new things happen and changes are a commodity. There is the kind of psychological turbulence that is dynamic, full of speed and movement. The opposite situation is described by Eckvall as slow movement with no surprises. No new projects, no change in plans to disturb the order of the day.

6. **Playfulness/Humour**: A relaxed atmosphere with jokes and laughter characterises the organisation that scores high on this dimension. The other extreme is a gloomy and serious atmosphere with a certain stiffness and gravity where jokes and laughter are seen as improper.

7. **Debates**: Differences in viewpoints, ideas; experience and knowledge are worded and talked through in organisations that score high on this dimension. Many voices are heard and people are eager to speak up. When debate is low or not tolerated according to Eckvall the organisation shows people that follow authoritarian patterns without questioning.

8. **Conflicts**: When there are many personal and emotional tensions, and groups and individuals dislike each other, Eckvall characterises the climate as having a high conflict level. Sometimes he speaks even of ‘warfare’. Then intrigue and plots are normal happenings in the organisation. In the opposite case people behave as mature individuals and groups that can handle emotional tensions and act with maturity and psychological insight.

9. **Risk Taking**: Organisations with an high tolerance of risk taking are fast in taking decisions, using opportunities and taking action. Concrete experiments are preferred over long and detailed research and analysis. The risk avoiding organisation on the other hand takes a prudent and hesitant stance. Employees stay ‘on the safe side’, sleep it over and cover themselves in many ways before taking decisions.

10. **Idea Time**: The amount of time people use and may use to work on new ideas and their implementation. In organisations that favour this dimension there are possibilities to try out new impulses and discuss suggestions that were not included in the original task. People tend to use these possibilities. In the opposite case every minute of work is specified and people have to work by the book. There is little possibility to step out of the pre-planned rules and procedures.

(adapted from Eckvall, 1996, pg. 107-108)
5.2.3 Creative Climate in Work Environments; Amabile and Gryskiewicz

Environmental conditions that affect creativity and innovation are important in effective practice. Amabile and Gryskiewicz (1988) investigated the impact of work environments on the creativity of adults at work and on the level of innovations produced by an organisation.

They interviewed a large number of scientists of a wide variety of corporations and developed a questionnaire based on the found factors. Their immediate goal was to identify major factors of environment and personality that affect creativity and or in R&D. A long term goal was to develop a method for assessing the work environment in R&D labs.

They found among others, the following major factors that affected creativity positively or negatively in research and development environments. The results are presented below rank-ordered by the percentage of R & D scientists who mentioned them in their event descriptions.

"Environmental Stimulants to Creativity"

1. **Freedom**: freedom in deciding what to do or how to accomplish the task; a sense of control over one’s own work and ideas.

2. **Good project Management**: a manager who serves as a good role model, is enthusiastic, has good communication skills, protects the project team from outside distractions and interference, matches tasks to workers’ skills and interests and sets a clear direction without managing too tightly.

3. **Sufficient Resources**: access to necessary resources, including facilities, equipment, information, funds, and people.

4. **Encouragement**: management enthusiasm for new ideas, creating an atmosphere free of threatening evaluation.

5. **Various Organisational Characteristics**: a mechanism for considering new ideas, a corporate climate marked by co-operation and collaboration across levels and divisions, and atmosphere where innovation is prized and failure is not fatal.

6. **Recognition**: a general sense that creative work will receive appropriate feedback, recognition and reward.

7. **Sufficient time**: time to think creatively about the problem, to explore different perspectives rather than having to impose an already -determined approach.

8. **Challenge**: a sense of challenge arising from the intriguing nature of the problem itself or its importance to the organisation (internalised by the individual as a personal sense of challenge.

9. **Pressure**: a sense of urgency that is internally generated from competition with outside organisations or from a general desire to accomplish something important.

**Environmental Obstacles to Creativity**

1. **Various Organisational Characteristics**: inappropriate reward systems in the organisation; excessive red tape, a corporate climate marked by a lack of co-operation across divisions and levels; little regard for innovation in general.

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2. **Constraint:** lack of freedom in deciding what to do or how to accomplish the task; a lack of a sense of control over one's own work and ideas.

3. **Organisational Disinterest:** a lack of organisational support, interest, or a lack of faith in a project; a perceived apathy toward any accomplishments coming from the project.

4. **Poor project Management:** a manager who is unable to set clear direction, who has poor technical or communication skills, who controls too tightly, or who allows distractions and fragmentation of the team’s efforts.

5. **Evaluation:** inappropriate or inequitable evaluation and feedback systems; unrealistic expectations; an environment focused on criticism and external evaluation.

6. **Insufficient Resources:** a lack of appropriate facilities, equipment, materials, funds or people.

7. **Time Pressure:** insufficient time to think creatively about the problem; too great a workload within a realistic time frame; high frequency of ‘fire fighting’.

8. **Overemphasis on the Status Quo:** reluctance of managers or co-workers to change their way of doing things; an unwillingness to take risks.

9. **Competition:** interpersonal or intergroup competition within the organisation fostering a self-defensive attitude.”

   (Amabile & Gryskiewicz, 1988; Amabile 1996, pg. 231-232)

In 1989 Amabile and Gryskiewicz developed an inventory a standardised, quantitative measurement instrument of work environment factors that might influence creativity positively or negatively, called “KEYS: Assessing the Climate for Creativity”. This scale was formerly called: the Work Environment Inventory’ [WEI] (Amabile & Gryskiewicz, 1989; Amabile, 1996, pg. 232).

**Topics for Innovative Teams**

The following topics within research on creative climate are considered to be of interest for concepts on the relational-process level of innovative teams:

**Are Climate Inventories for Organisations also valid for Teams?** All climate variables are of interest for teams of course, but as the inventories are designed more for organisations than for small groups it is interesting what is relevant for teams. One might say that the found characteristics of factors are not only of importance to the environment of teams but also to the internal climate of teams. All are on the level of Schein’s artefacts and fairly behavioural (Schein 1992).

**Common Dimensions and Differences between Inventories:** A comparison between the described dimensions of the different summaries and inventories on creative climate will be made in the discussion of this chapter in section 5.4.1 and presented in table 5.1.
5.3 Creative Climate in Small Groups and Teams

The foregoing paragraph was centred on creative climate in organisations, this paragraph will be focused on climate in creative small groups and teams. For small groups there has been considerable empirical research in educational settings and on conditions for creative climate facilitating a creative sessions (Isaksen & Treffinger, 1985; Osborn, 1963; Torrance, 1995). The main approach to obtain creative climate for idea generation in small groups will be described from several perspectives. The second issue of this section is the team climate inventory, an instrument developed (Anderson & West, 1996) to have a specific measure of team climate for innovation. The last part of this paragraph is dedicated to the relationship between the leader and creative climate.

5.3.1 A Climate for Creative Sessions

A selection of perspectives will be presented starting with the rules and conventions used in classical brainstorming and its derivatives. Synectics and the views of De Bono will be discussed.

Climate for a Brainstorm

The best known and most misunderstood method for creativity in groups is brainstorming; “a conference technique by which a group attempts to find a solution for a specific problem by amassing all the ideas spontaneously contributed by its members” (Webster International Dictionary, 1986). It was invented by Osborn as early as the 1930's, according to him 'for the sole purpose of producing checklists of ideas' (Osborn, 1963). In order to attain large numbers of ideas brainstorming is based on the principle: deferral of judgement that is the avoidance of premature criticism. Osborn is supposed to have said to his tumultuous advertising staff when meetings didn’t proceed too well ‘All ideas before the break, all criticism after the break’. In order to attain a large numbers of ideas - and thus having a greater chance of creating good ideas - the generation of ideas, divergence phase, and the evaluation of ideas, convergence phase, should be kept apart.

The reason that brainstorming is often used rather fruitlessly is that the rules for a generative climate for ideas are neither understood nor followed. Osborn gives the following four rules for brainstorming in the phase of idea-generation.

1. Criticism is ruled out: adverse judgement of ideas must be withheld until later.
2. Free-wheeling is welcomed. The wilder the idea the better; it is easier to tame down, than to think up.
3. Quantity is wanted. The greater the number of ideas the more the likelihood of useful ideas. In popular speech this rule of brainstorming is called: Quantity breeds quality.
4. Combination and improvement are sought. In addition to contributing ideas of their own, participants should suggest how ideas of others can be turned into better ideas; or how two or more ideas can be joined into still another idea.”

(Osborn, 1963, pg. 156)
The main principle of Osborn postponement of judgement creates thus far more ideas than needed, the use of distancing helps to find new views on the problems just as did hitchhiking on the ideas of others.

**Climate for Creative Techniques**

Many others walked in the footsteps of Osborn and built on his rules for brainstorm their own convention derivatives. CPS as described in section 5.1.2 leans heavily on the Osborn rules. Battelle; the innovative Forschungsgruppe Frankfurt, Germany; the Center for Creative Leadership in Greensboro, USA; TNO the Innovation Consulting Group Delft Netherlands; Delft University of Technology with research on design methods; the Manchester Business School, Creativity Research Unit; Center for Creative Studies in Buffalo, to name but a few, use the principles that were developed by Osborn.

**Research at IDEO**

‘Brainstorming’ is the most tested and verified but also the more criticised creativity method. Recent reviews conclude that ‘productivity loss’ is observed consistently in brainstorming groups with more than two members. This loss is due to group dynamic factors like social loafing, which refers to ‘the reduction of effort by individuals when they work in groups’ (Williams, Harkins & Latane, 1981). Nominal groups produce (groups ‘in name’, *nominal* only, as the members generate ideas without interaction), according to these researchers, many more ideas than brainstorming techniques and the like. (e.g. Mullen, Johnson & Salas, 1991; Stroebe & Diehl, 1994; Paulus, Brown & Ortega, 1996). These research results and interpretation are questioned by a very interesting, longitudinal field research of Sutton and Hagard (1996, pg. 685-718) who suggest a broader perspective for assessing brainstorming effectiveness than just the quantity of ideas.

They actually assessed the climate effects of the brainstorming sessions in a qualitative study at the American design consulting company IDEO (Palo Alto, California) and report six important results for this firm, its design engineers, and its clients. The brainstorms in IDEO are:

1. Supporting the organisational memory of design solutions;
2. Providing skill variety for designers;
3. Supporting an attitude of wisdom (acting with knowledge while doubting what one knows);
4. Creating a status auction (a competitions for status based on technical skills);
5. Impressing clients;
6. Providing income for the firm.” (Sutton & Hagard, 1996, pg. 685)
This is the only longitudinal study in this field we know of, done with co-workers of the same organisation over several years. The results of this research suggest that when brainstorming sessions are viewed in an organisational context and the ‘effectiveness at what’ and ‘for whom’ questions are asked, efficiency at idea generation deserves no special status as the sole effectiveness outcome.

The IDEO version of the brainstorming rules are displayed (either painted on the walls or on sheets of paper) in several locations in each room so that every participant can see them. These rules are: (1) defer judgement, (2) build on the ideas of others, (3) one conversation at a time, (4) stay focused on the topic, and (5) encourage wild ideas. (Sutton & Hagardon, 1996, pg. 694)

**Synectics**

Next to brainstorm, the other creativity flow mentioned here will be Synectics, as an example of a complicated technique which is very dependent on a good creative climate. The original Synectics technique was designed by Gordon (1961) and later developed into a shortened version by Prince (1970). Its main contribution is the direct stimulation of creativity by structuring the incubation of the participants. Metaphorical problem definitions and different kinds of analogies lure the participant away from the original problem and its context. The mind relaxes puts the problem out of the mind temporarily and comes into a free flow of association and ideas. Various uses of imagery and knowledge about other subjects are sources of inspiration. At the end of this distancing the facilitator asks for new ideas and solutions generated through a ‘force-to-fit’ from the found analogies and ideas to the original problem statement.

Synectic flows include using metaphorical images from another field to analyse the problem, imagining what it would feel like to be a physical object related to the problem, or imagining solutions that would be possible if physical laws could be suspended or new technologies applied. Synectics is used mainly for highly closed technical problems, where few new solutions are expected and a new vision on the problem might be already a breakthrough. The method is, compared with other creative techniques, one that distances itself far from the proposed problem to get very original breakthroughs.

In terms of creative climate it needs an experienced facilitator and an experienced group to postpone judgement for such a long time and hold the tension without loosening its concentration. Gordon and Prince promote Synectics as the technique to encourage creativity and overcome internal inhibitions that results from normal, rational ways of perceiving and thinking. It has proved its usefulness for very tight and closed technical problems (NASA labs) as its high divergence from the problem situation gives new outlooks and perspectives.

**The Thinkplace of Edward de Bono**

De Bono has made ample contributions to the field of creativity and creative thinking. In this paragraph we will restrict ourselves to the examination of his concept of the
Thinkplace and to the Six Thinking Hats as a tool for parallel thinking in a group. Both are seen as useful tools and encouragement for a creative climate.

In his book ‘Letters to Thinkers’, (1994) De Bono introduces a ‘thinkplace’ at the end of every chapter, a paragraph to think and ponder. This thinkplace has the same function as the tennis course or a swimming-pool: it is a formal place to practice a valued, pleasant activity. De Bono’s rules for the thinkplace are easy and might be regarded as a tool to create a personal creative climate.

“Be aware of patterns and find them, secondly observe and select observations. Don’t work to hard, don’t be disappointed if nothing shows up immediately. Note that the observation is directed at the finding of patterns not of faults or mistakes.”

(De Bono, 1994, pg. 27)

In group work de Bono has coined the term ‘Parallel Thinking’ (De Bono, 1995). It is applied in his method of the Six Thinking Hats that fosters a creative climate. These Six Thinking Hats are a tool during meetings to streamline the thinking of the group in order to achieve parallel thinking. The group is to use one ‘Thinking Hat’ at a time. The Black Hat for a critical viewpoint, the Yellow Hat for a sunny one, the White Hat for facts, the Blue Hat for a detached overview, the Red Hat for emotion and the Green Hat for creative ideas. De Bono as the advocate of parallel thinking teaches how to use this method and states:

“Parallel thinking means simply laying down ideas alongside each other. There is no clash, no dispute, no initial true/false judgement. There is instead the genuine exploration of the subject. It is a most constructive approach to allow the contradictory view to exist in parallel and then to design a way forward.”

(De Bono, 1995, pg. 97)

His view is pragmatic: use parallel thinking because it works so well for group dynamics and creative climate. The ego is moved into the challenge of giving a good performance under the designated hat instead of disputes, politics or power plays. There is time and space for creativity, for expression of feelings and searching for values. And according to De Bono the method gives an opportunity to switch off notoriously one-sided thinkers.

In concluding this section I would like to summarise some important findings Van Gundy (1987) gives after a research on the rules of Osborn for brainstorming but that can be extended also to the other selected techniques described. According to van Gundy the principle of deferred judgement, the first rule of Osborn is unchallenged.

But Van Gundy challenges the principle of 'quantity breeds quality'. Using this principle does not guarantee more pattern breaks nor a more original outcome. This is confirmed by the research of Barlow about breakthroughs in groups (Barlow, 1998). His finding is that when a shift in thinking level, an ‘Aha’ in a group takes place, the generated ideas will be more original. For example, the group makes a mental leap when they define their consultancy with too little internal cohesion as a pigeon-house, or when they break their own assumption that they have to see each other every week. From these new perspective new ideas for solutions can be generated for the consultancy.
I propose that the rule for idea generation: *quantity breeds quality* should be rewritten to *the quantity of mental leaps breeds the quality of ideas*, making it understood that the changes of perspective and vision enhance the chance to find creative options.

5.3.2 The Team Climate Inventory

Recently Work and Organisational Psychologists have become engaged in the debate of measuring collective beliefs and perceptions of groups and organisations. They also study cut-offs indicative of shared perceptions of groups and organisation climate and culture.

The Team Climate Inventory (TCI) was originally designed as a specific measure of team climate for innovation. It is based on the four factor model of West (1990) which poses hypotheses about the relationship between four climate factors in a team which were found in studies and work on group innovation. These four climate factors are:

A. **Vision and Shared Goals**: A vision is an idea about a valued result, a higher order goal, that has motivating power for the group. The concept of vision consists of value added to the objective. The clearer the vision, the more effectively it can support innovation as new ideas can be confronted with it. The more vision is negotiated and shared in the group, the more the members are committed to implement the innovation. It is also important that the vision is feasible. Otherwise no image of the steps to be taken can be envisaged.

B. **Participative Safety**: Membership and safety are seen as one concept, no interpersonal threat. This climate factor states that the more the members share information and are involved in decision making, the higher the chances for acceptance of the innovation will be. The quality of the participation is related to the relevance and the importance of the exchanged ideas for the group members. A feeling of security in the group climate probably enables the exploration of radical thoughts possible.

C. **Task Orientation and a Climate for Excellence**: Task orientation in a working group should be evident when care for excellence is equally high and in close connection with the shared vision and the result. Next to that, it is important to care for standards of quality, to tolerate diversity; to explore different opinions and to monitor each other’s performance. The appreciation of constructive challenge is important and there should be a tolerance of constructive controversy in decision making. This includes the encouragement of diversity of opinions and at the same time high quality of innovation guaranteed by a careful investigation of the given ideas.

D. **Group Norms and Support for Innovation**: This dimension holds expectation, consensus and practical support for innovation in groups. New ideas are clearly supported by the group either verbally or just by action and support in and outside of the meetings. The support can also have the form of co-operation when trying out or applying new ideas. Or it might require time and resource investment of members to implement the innovation. If a climate is supportive in this sense it also includes tolerance of mistakes made by the innovator. It is known that these will not be punished even if the innovation is not successful.
Concurring with the four factors the five subordinate scales of the TCI relate to them as follows:

1. Participative safety: how participative the team is in its decision making procedures and how psychologically safe team members feel it is to propose new and improved ways of doing things.

2. Support for innovation: the degree of practical support for innovation attempts contrasted against the rhetoric of professed support by senior management (many organisations have an abundance of the latter but a scarcity of the former!)

3. Vision: how clearly defined, shared, attainable, and valued are the team’s objectives and vision.

4. Task orientation: the commitment of the team to achieve the highest possible standards of task performance, including the use of constructive progress monitoring procedures.

5. Social desirability: a check scale which indicated excessive faking and impression management by respondents.” (Anderson & West, 1996, pg. 59)

5.3.3 Creative Climate and Leadership

In the various brainstorming procedures described in the literature it is of great importance for the success of brainstorming that someone acts as the leader, facilitator in the creativity vernacular, and directs the process (M. De Bruyn, 1994; Hohn, 1994; Osborn, 1963; Tassoul, 1998).

Managing for Creativity

Gibb is one of the few social scientists who in an early stage joined the exploration of the creative domain (Taylor, 1972). In 1972 he contributed to the creativity conference ‘Climate for Creativity’ as a researcher by applying his theory on trust formation (see sec. 4.4.1.; Gibb, 1964) to creativity and management/leadership. At the basis of Gibb’s theory lies the assumption that human beings are, under normal conditions of growth, creative. They have the capacity for novel and inventive solutions to problems and choices that confront them. But, says he, there are conditions:

“These, then are the organisational determinants of creativity.: trust, openness, self-determination, and interdependence. The blocks to the integration of productive creativity onto organisational activity are the converse of the above four factors: fear, restriction of communication, imposition, and control. Managers who (...) wished to optimise creativity would focus upon barrier removal: the reduction of the four restraining forces of the above. Creativity is there; it grows; it nurtures itself. One cannot produce creativity, only nurture it.” (Gibb, 1972, pg. 32)

A leader who certainly ‘walks his talk’ is David Kolb. Excerpts from a conversation with David Kolb on his class and the experiential learning cycle.

“You keep it [the process] alive by making space for life to go on. We don’t come in with the design and lay it on to everybody. We come in with the design and wait for the dynamic quality to come in and change the design and get ourselves in touch with that. Because for me when ‘the light goes on’ we’re in the dynamic mode and I can tell the difference.”

(Interview with David Kolb after a dynamic class he led, Hohn, 1992)
The Role of the Facilitator in a Study on Warm and Cold Climate

Factors of the WEI, Amabile and Gryskiewicz (see 5.2) were used in a study to explore these climate factors further in two equalised groups on a creativity session (Hohn & Verloop, 1994). With participants’ permission to a blind set-up, the researchers formed two creativity training groups and included deliberate stimulants for one, the ‘warm climate’ group and obstacles for the other, the ‘cold climate’ group.

Although this was not a fully formal experiment, there were expectations that the ‘cold’ and ‘warm’ external climate would have a negative and positive effect on the atmosphere of the groups and on the creative output. The researchers were amazed to find that at the end both groups had a good group climate and almost the same amount of ideas. In fact the ‘cold’ climate group had the more original idea but also had changed most. After analysis of the video-tapes a psycho-dynamic perspective offered a better explanation for this outcome than a static climate approach:

“A group in a ‘cold, negative’ environmental climate will be susceptible to project the ‘feeling of coldness’ coming from the environment onto the facilitator or leader of the group. Conversely the facilitator may be influenced negatively. In such a climate the facilitator can change the negative attitude of the group and provide opportunities for a better creative climate in the unit in spite of the cold surroundings.” (Hohn & Verloop, 1994, pg. 5)

The role of the facilitator appeared to be important as a change agent for the cold climate group. Although this was an exploratory activity indication for further research on climate and context direct to the role of the facilitator/leader of a group and the group dynamic process he is able to induce.

Exploring the relationship between Creative Climate and Leadership

Lauer, Isaksen and Dorval conducted in 1996 a focused research on the relationship between leadership and climate in organisational settings. Their own extension of the body of literature supports the belief that individual creativity, and it’s manifestation in group or organisational settings, is strongly influenced by the climate of the setting and the behaviours of the leaders.

Lauer, Isaksen & Dorval (1996) in their research use the model of Kouzes and Posner (1994), who believe that ‘leadership is an observable, learnable set of practices’. Based on the results of their survey work, Kouzes and Posner developed the Leadership Practices Inventory, called the LPI: Self-Observer. They found that more than 70% of the responses could be categorised within the following five relatively-distinct leadership practices.

1. Challenging the Process,
2. Inspiring a Shared Vision,
3. Enabling others to act,
4. Modelling the Way and
5. Encouraging the Heart.” (Lauer, Isaksen & Dorval, 1996, pg 10)
As a second inventory Lauer, Isaksen and Dorval made use of Eckval’s Climate Inventory (CCQ) the former inventory to the Creative Climate Questionnaire described in section 5.2.2. Eckvall had suggested that about 65% of the variance found in climate, was attributed to leadership. Lauer cum sui embarked further on this path. In their research they correlate the scores of CCQ (Climate Inventory, Eckvall, 1990) and LPI (Kouzes & Posner, 1994) in a small study of a manager and his small work group of 20 people. They found significant relationships between about a third of the dimensions. The strongest relationships occurred between the factors Enabling Others to Act and Encouraging the Heart of the LPI and the Challenge/Involvement and Idea Support dimensions of the CCQ. According to Lauer, Isaksen and Dorval, this suggests that as subordinates perceive more enabling and encouraging leadership behaviours in their leader, they also tend to see the climate as more supportive of their ideas and providing them with challenges that support creativity and innovation in their work place (Lauer, Isaksen & Dorval, 1996).

**Topics for Innovative Teams**

The following concepts within research on creative climate for small groups and leadership are considered to be of interest for concepts on the relational-process level of innovative teams:

*Conventions for Creativity:* The rule *postponement of judgement* has been found valid as a generative rule by innovative teams, as much as *hitch hiking* on each others ideas and free wheeling in order to distance oneself temporarily from the problem. The quantity breeds quality convention should be reframed as follows: the quantity of mental leaps breeds the quality of ideas.

*Creative Climate and Leadership:* Leadership should be clearly on the participative and supportive side of the continuum of Vroom and Yetton; Tannenbaum (figure 4.6) in the idea generating phase. In different models it is emphasised that encouragement and emotional support of the leader, Encouraging the heart, are important.

*Common Factors and Differences between Inventories:* To find out about the differences and similarities a comparison will be made between the different inventories in section 5.4.1. of this chapter.

### 5.4 Synthesis

This section begins with a comparison of the different inventories for Creative Climate and Group Climate presented in table 5.1. This results in the last topics for innovative teams found in this chapter.

Then a summary of the important findings will be given. The topics from the preceding sections will be compared on the perspective the different theories offer. In table 5.2 an overview is presented with a reference to the paragraphs where the description of the theories can be found.
5.4.1 Comparison of Climate Inventory Dimensions

In the sections 5.2.1 to 5.3 four different inventories for climate were introduced. Three of them pertained to creative climate in organisations, one of them was focussed on team climate in innovation. Figure 5.1 presents the four inventories described. This is done by matching the dimensions of the inventories as far as possible. For reasons of comparison the dimensions are placed in a different sequence in order to be matched across the inventories. There are two dimensions found that can be shared by all inventories shown in the non-shaded row I. Three dimensions are shared by the creative climate inventories, shown in the light shaded row II. Two dimensions that are shared by different inventories, half shaded in row III and various dimensions that are unique for every inventory, dark shaded in row IV. The numbers behind every dimension refer to the original sequencing of the particular inventory.

Although the results should be looked at with some caution as this is a rudimentary comparison with many an imprecision, the following observations and points of discussion are given in order of the rows in table 5.1:

I. Two dimensions are mentioned for all four inventories likewise as a clear good climate indicator. The first is on the dimension of acceptance and worded in the dimensions: tolerance of difference, recognition, trust/openness, participative safety.

The second refers to outside help for creativity or innovation and has likewise dimensions: support for creativity, various organisational supports, idea support, support for innovation.

II. Most on the foreground is, that the three creative climate inventories in contrast to the team climate inventory almost unanimously find three factors substantial. These are: Freedom, Challenge and a kind of Risk Taking and Urgency. None of these kind of factors are found in West’s inventory, neither in the main categories nor in their sub categories (sec. 5.3.2).

Although this is a rudimentary analysis the given indications are confirmed by research (Lauer, 1994) that freedom and a kind of urgency and challenge are possibly important discriminatory factors in defining the creative part of climate. It also reflects what Amabile summarises on personality factors: ‘Creativity relevant skills depend to some extent on personality characteristics related to independence, self-discipline, perseverance in the face of frustration, and a relative unconcern for social approval’ (Amabile, 1990, pg. 78)

III. In the third row task support activities described in the dimensions: top management support, project management and task orientation are shared by three inventories. Idea time or sufficient time is mentioned by two inventories. Top management support is not mentioned by Eckvall as such. The dimensions in row three are difficult to compare, but they have a management and resource quality.

IV. The other dimensions of the inventories vary considerably between the inventories can be seen.
## Comparison Creative Climate And Team Climate Inventories

<table>
<thead>
<tr>
<th>Creative Climate Inventories</th>
<th>Team Climate Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Van Gundy Literature Survey 1987</strong></td>
<td><strong>Amabile &amp; Gryskiewicz WEI, 1988</strong></td>
</tr>
<tr>
<td>I Tolerance of Difference (5)</td>
<td>Recognition (6)</td>
</tr>
<tr>
<td>Support for Creativity (4)</td>
<td>Var. Org.(support) Charact.(5)</td>
</tr>
<tr>
<td><strong>II</strong></td>
<td></td>
</tr>
<tr>
<td>Autonomy (1)</td>
<td>Freedom (1)</td>
</tr>
<tr>
<td>High responsib. initiating ideas</td>
<td>Challenge (8)</td>
</tr>
<tr>
<td>Risk Taking (3)</td>
<td>Internal Pressure / Urgency</td>
</tr>
<tr>
<td><strong>III</strong></td>
<td></td>
</tr>
<tr>
<td>Top Management Support (7)</td>
<td>Good project Management (2)</td>
</tr>
<tr>
<td>Sufficient time (7)</td>
<td></td>
</tr>
<tr>
<td><strong>IV</strong></td>
<td></td>
</tr>
<tr>
<td>Personal Commitment (6)</td>
<td></td>
</tr>
<tr>
<td>Job Security (9)</td>
<td></td>
</tr>
<tr>
<td>Per.Reward Depend/Harmonious</td>
<td></td>
</tr>
<tr>
<td>Moderate degree of ambiguity</td>
<td>Encouragement (4)</td>
</tr>
<tr>
<td>Sufficient Resources (3)</td>
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*Table 5.1: Inventories Creative Climate and Team Climate*
A general point to ponder is the question whether there is a tension between the social and the creative, where the creative climate inventories stress far more the autonomy, freedom and risk taking, while that team climate inventory coming from social research stresses more the social nature.

**Topics for Innovative Teams**

From this analysis two new topics for innovative teams are selected.

*Challenge and Risk Taking:* If innovative teams need a creative climate which is proposed here, they will need to foster but also to handle challenge and risk taking on their part.

*Freedom and Autonomy:* For innovative teams the freedom and autonomy of the person might be also transferred to the group and to the free room it has in the organisation.

**5.4.2 Topics for Innovative Teams; Comparison of Theoretical Orientations**

In table 5.2 an overview is presented with a reference to the paragraphs where the description of the theories can be found.

Each of the topics will be shortly discussed and this section ends by considering the novelty of the different topics for innovative teams.

**Creative Climate in Small Groups and Teams**

Except from West interest in the dynamics of small groups and teams is not very high in the creativity literature with one exception. In creative sessions and educational training settings the small group is the vehicle of transport for the creative thinking technique as much as for the training itself. In that sense there is much attentions for the climate in creative sessions. The conventions or rules used during the process of the creativity techniques have to guarantee that the climate of the sessions is supportive. A problem might be that there is no underlying theory of group dynamics and the climate is dependent in the use of rules, procedures and conventions. The change agent role of the facilitator is thus overlooked (sec. 5.3.3)

**Creative Climate in Context in Organisation**

Context is important for creativity and defines the terms of the creative climate. This is important for innovative teams who do not work in a vacuum but in their own organisational and or political environment and context. Are climate variables for organisations also for innovative teams? All climate variables are of interest for teams of course, but as the inventories are designed more for organisations than for small groups it is interesting what is relevant for teams. One might assume that the found characteristics of factors are of importance to the environment of teams but also to the internal climate of teams. All are on the level of Schein’s artefacts (1992) and fairly behavioural.
<table>
<thead>
<tr>
<th>Innovation</th>
<th>Climate in Small Groups and Teams</th>
<th>Creative Climate in Context of Organisations</th>
<th>Creative Climate and Leadership</th>
<th>Freedom, Autonomy and a metaphor of ‘Free Room’</th>
<th>Challenge and Risk Taking Conventions for Creativity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rickards Bijs West/Raff</td>
<td>facilit. of teams group climate inventory</td>
<td>sec.5.3.2</td>
<td>sec.5.1.2</td>
<td>sec.5.1.2, 5.</td>
<td>implicit</td>
</tr>
<tr>
<td>Creative Clima Amabile/ Gryskiewicz Eckval Van Gundy</td>
<td>implicit</td>
<td>different creative climate inventories</td>
<td>participative leadership see inventories</td>
<td>yes see inventories</td>
<td>implicit in different creative climate inventories</td>
</tr>
<tr>
<td>CPS</td>
<td>rules of Osborn, basis for most others</td>
<td>sec.5.3.1</td>
<td>sec. 5.1.2</td>
<td>sec.5.2, 5.2.1</td>
<td>implicit in facilitation</td>
</tr>
<tr>
<td>Creat. Sessions and Research</td>
<td>facilitation of creative sessions conventions for facilitation of creative sessions</td>
<td>sec. 5.3.1</td>
<td>sec. 5.1.2</td>
<td>sec.5.2, 5.2.1</td>
<td>implicit in facilitation</td>
</tr>
<tr>
<td>Torrance de Bono Gordon de Bruyn ea.</td>
<td>leadership from experiential group dynamic research</td>
<td>sec. 5.3.1</td>
<td>sec. 5.3.3</td>
<td>sec.5.3.1</td>
<td>implicit</td>
</tr>
<tr>
<td>Leadership Laurer ea. Kolb Gibb</td>
<td>leadership from experiential group dynamic research</td>
<td>sec. 5.3.3</td>
<td>sec. 5.3.3</td>
<td>mostly from group dynamics yes see research</td>
<td>implicit</td>
</tr>
</tbody>
</table>

Table 5.2: Overview of the Different Theories Dealing with Selected Topics for Innovative Teams

**Creative Climate and Leadership**

Leadership should be clearly on the supportive side of the continuum in the idea generating phase (Kouzes & Posner, 1984). In different models it is emphasised that encouragement and emotional support are important (sec. 5.3.3). Also the group dynamic skill and insight would be a valuable extra for a leader when facilitating a team in creative session.
Freedom, Autonomy and a Metaphor of ‘Free Room’

For innovative teams the freedom and autonomy of the person might be also transferred to the group and to the free room it has in the organisation. De Bono speaks of a ‘Thinkplace’ (De Bono, 1994), De Bruyn in his TIPCI model speaks of an intermediate space as free room to work in (De Bruyn, 1994) and both advocate a physical room in order to preserve a psychic space.

Challenge and Risk Taking, Conventions for Creativity

If innovative teams need a creative climate which is proposed here, they will need to foster but also to deal with challenge and risk taking on their part. Helpful for them are the use of the rules for brainstorming as developed by Osborn (Osborn, 1963, sec. 5.3.1) for creativity sessions. The rule of postponement of judgement can be used quite easily by innovative teams in a creative phase, as much as the rules of hitch hiking and free wheeling. The quantity breeds quality convention should in my opinion be changed to ‘quantity of the mental leaps (Aha’s) breeds quality’.

Novelty of the Topics for Innovative Teams

Creative climate in small groups and teams is an commodity in the domain of creative sessions but not known as much in project teams or work groups (chapter 4). New for creativity theories and also for teams is the present notion of seeing creative climate in context (Amabile, 1996; Csikszentmihalyi; 1988). It links up with the developments in the group dynamic field as is illustrated by the group climate inventory for climate in teams and innovation. Risk taking and challenge are seen as more important in the creativity literature and within the conventions for creativity they are protected. Creative Climate linked to Leadership advocates a supportive style of leadership throughout, which is not new in teams. The metaphor of ‘Free room’ is connected to freedom and autonomy not only of the person but also connected with the physical ‘free room’, like physical space and the resources of the team.

Bridge to the next chapter

The next chapter outlines the empirical research. The questionnaire inquires the perceptions leaders have of their team and leadership related to the relational process level of teams. The questions are based on the topics and frames from the literature chapters and on open items. The chapter describes the development of the questionnaire, proposition of hypotheses and expected outcomes, collection and analysis of data and the results.
6 Leadership and Team Development in Innovative Teams
A Questionnaire Study

6.1 Introduction
6.2 Explorative Propositions and Design of the Questionnaire
6.2.1 Explorations of Leaders' Perceptions
6.2.2 Design of the Questionnaire
6.2.3 Additional Statements
6.3 Selection of Respondents and Procedure
6.3.1 Sampling Method: Search of the Respondents
6.3.2 Criteria for Selection
6.3.3 Description of Professional Fields
6.3.4 Procedure
6.3.5 Analysis of Data
6.4 Results
6.4.1 Response and Description of the Professional Fields and Respondents
6.4.2 Results Content Analysis of Open Questions
6.4.3 Results Concerning Theoretical Expectations (Exploration 1 to 4)
6.4.4 Results of Differences between Leaders' Perceptions (Exploration 5 to 6)

In this chapter on the questionnaire study explorative statements based on the topics of the theoretical chapters and summarised in explorative propositions, is developed. These explorations investigate the perceptions of the leaders and their experience in relation to the themes for innovative teams generated in the theoretical chapters. Subsequently the design of the questionnaire is presented and sampling and procedure are described together with the statistical analysis of the data. Finally the results of a content analysis on open questions and the results of the explorations, proposed at the beginning of the chapter are presented.
6.1 Introduction

The questionnaire study is designed to explore the reflections of senior leaders related to the research question: 'What are the conditions a successful innovative team requires on the relational-process level and what is the kind of leadership that is needed in a successful innovative team?' This question is surveyed on a theoretical basis in the three previous chapters. The topics for innovative teams extracted from these chapter (sec. 3.4.2, 4.4.3, and 5.4.3) are at the basis of the questionnaire. The study is meant to elicit the knowledge, experience and perceptions of the practitioners in the field.

Main themes originating in the theoretical chapters, which were used to construct the questionnaire were: Playing and creativity, the role of basic trust in development and the theme of construction and destruction. Trust formation in small groups, group/team development, leadership of teams, group/team boundaries and context, freedom, autonomy and need for 'free room', creative climate and leadership.

The leaders' perceptions are assessed in two ways. Firstly their perceptions are compared to the expected outcomes as derived from theory. And secondly differences are investigated which stem from the leaders' differing professional fields and gender.

After the presentation of the explorative questions and statements, the design and development of the questionnaire is described. Then sampling descriptions, selection criteria and procedure are given followed by a paragraph on the analysis of the data and the response of the groups. The chapter concludes with the results of the explorative statements and questions posed in the questionnaire.

6.2 Explorative Propositions and Design of the Questionnaire

Instead of developing hypotheses, explorations are investigated. No hypothesis can be developed at this point as there is no clear underlying theoretical model about leadership of innovative teams on the relational-process level. The different theoretical theories that can be applied to this have been elaborated on in the theoretical chapters and in chapter two. In the conclusions of the three chapters I have made new combinations or generated new themes for the relational-process level of innovative teams (sect. 3.4, 4.4, and 5.4). In the following paragraphs, explorative statements and their origin in the theoretical chapters are described. They are summarised in Explorations, that is explorative propositions with one or more statements allocated to each of them. Because of the theoretical basis of the questionnaire the 'expected outcomes' as suggested by theory can be formulated for the statements of the questionnaire (see table 6.1). These expectations are tested and examined.

6.2.1 Explorations of Leaders' Perceptions

Explorative propositions (Explorations) deriving from the theoretical chapters were developed on the basis of the syntheses of the theoretical chapters. Different
statements are bundled into Exploration 1 to Exploration 4 (E1 to E4). Explorations 5 and 6 investigate differences between the perceptions of leaders; it is proposed that the differences occur between professional fields and between genders.

Playing and Trust

According to theory there is a clear relationship between the capacity to play and the development of basic trust in the individual child. This assumption can be traced back to a large extent to chapter three on playing in psychological development and the theories of Winnicott (1971) and Vygotsky (V.d. Veer & Valsiner, 1991). Both assert that playing has an important role in becoming and staying creative. By analogy, this idea is therefore transferred and extended onto successful innovative teams and their capacity to be creative.

Basic trust has been researched extensively in the labs of the National Training Laboratories, NTL, as described in chapter four. This work is largely based on Lewin’s laboratory approach (Lewin, 1947) and the human relations heritage (Gibb, 1964; Rogers, 1951). This stance is also firmly held by the psychoanalytic notions of Erikson (1981) and Winnicott (1971). Based on these theoretical ideas, the following two explorations were developed:

E 1.1. Playing has an important role for successful innovative teams.

E 1.2. Basic Trust (in oneself and others) is essential if the team wants to be successful.

The Social Process and Team Development in Innovative Teams

‘The social process needs time and attention’; any NTL (National Training Laboratory) trainer would agree with this statement (Benne & Lippitt, 1964) which was derived from this school of thought described in chapter 4.1.2. The reason to propose the following explorations is also due to the fact that most project management and team books do not deal extensively with the social process of the group. Originating in small group research and in the model of Gibb (1964) the second exploration is emphasised by an article by Buijs (1993) and later reformulated and firmly backed up by my discussions with a representative of innovation managers at Royal Dutch Telecom, R. Bleekrode in 1994.

Team development as defined by Tuckman (1965) was divided in five different phases and was described in chapter 4.4.1. A broader division is the often used by organisations and called the start-up phase (forming, storming, and norming) and the performing phase (performing and adjourning). Following Tuckman’s view in the start-up phases teams according are occupied mainly with what is called team building activities such as inclusion/exclusion and positioning in the group. In the performing phase all energy is focussed on getting the task done and performance would become optimal.

The following explorations are proposed:
E 2.1. Successful functioning of innovative teams implies that time must be spent on the developmental process of the group.

E 2.2. In the start-up phase the team members engage in activities like positioning and finding out whether they share the vision, whereas in the performance phase the team members are focused on effectiveness, they identify with the team and help each other.

Creative Climate and Tolerance

Research on creative climate (Amabile, Gryskiewicz, 1988; Eckvall, 1990) claims that tolerance and freedom are important conditions for an organisation if creativity and innovation are to blossom. The notion of space originates from the ‘intermediate area of experience’ of Winnicott (1971) and in my talks with Roger de Bruyn who holds that an ‘intermediate space’ is needed in an organisation for creativity to develop (de Bruyn, 1994). De Bono talks about a ‘thinkplace’, a special place reserved for thinking, observation, finding patterns, and lateral leaps/jumps to occur (De Bono, 1989).

Conflicts are related to the social constructivist views on implicit social contracts with the 'environment'. In the social constructivist view, socio-cognitive conflict, the internal tension that arises from a difference between viewpoint and observations, is recognised as an indispensable and positive force if it can be managed (Doise, 1985; Grossen, Perret-Clermont, 1994). The developmental theory of Erikson is based on the idea of balance between two extremes, holding that healthy development cannot take place if crisis is not allowed for. Crisis is defined as a decisive change in a meaningful period often accompanied by internal conflict (Erikson, 1968, 1980). The following two explorations are created:

E 3.1. To attain a creative climate, a team needs an atmosphere of tolerance and 'free room' in its environment.

E 3.2. Tolerance for destructive thoughts is an important prerequisite when working with innovative tasks.

Leadership Style and Role

The following exploration is derived from a combination of leadership theories on small groups (Fiedler, 1967; Hersey & Blanchard, 1982; Yukl, 1981) with research on leaders with creative tasks (Lauer, Isaksen & Dorval, 1996; Torrance, 1995). The observed trend indicates that the more complex the tasks, the more relationship oriented the leadership style should be. Creativity theory about the rules for creative sessions, combined with group dynamics, gives clear indications about adequate leadership styles for facilitators and leaders of creative sessions (Hohn, 1994; Lauer, 1994).

Ancona’s research (Ancona & Caldwell, 1992) on teams concerning the inside and the outside world, refers to the management of the boundary with the outside world. She identifies successful and unsuccessful behaviour. In the presented results (Ancona & Caldwell) it appears as if the team leader and team members perform the same activities. I will investigate this finding and propose the following explorative statements.
E 4.1. A leader of a successful, innovative team has a supportive leadership style in order to allow for and foster a creative climate.

E 4.2. Leaders and team members have different roles toward the outside world in reporting to hierarchy and sponsors, in absorption of pressure and in information exchange with the outside world.

Differences between Professions

Differences between professional tasks have an effect on the relational-process level. This assumption is theoretically backed up by McGrath (1991), Hackman (1977) and van Zanten (1996) who claim that groups should be differentiated by their distinct tasks.

Although the spectrum between routine through innovative tasks described by Wijnen does imply this (Wijnen, Renes & Storm, 1989; sec. 1.1.2.), there is no direct evidence of how to place the professions on such a continuum. Common sense would place project managers and artists on either extreme of this continuum. However, this is contradicted by voices like De Bono who questions the non-routine actions of artists (De Bono, 1992) and my own observations of the routine life of performing artists and the adventures of project management in construction sites. The following two explorative statements are proposed:

E 5.1. Leaders with different professions: facilitators, social scientists, innovation manager, artistic leaders and project managers, have differing perceptions of the social dynamics of teams, and therefore, have different opinions about all statements and questions of this inquiry.

E 5.2. The largest differences are expected between the perceptions of project managers and artistic leaders. The project managers are expected to voice more procedural, task oriented views than the artistic leaders.

Differences between Genders

For leaders of innovative teams, no specific theoretical model on differences between genders were found. Research indicates that male and female roles do differ in corporations and organisations (Erikson, 1981; Moss-Kanter, 1977, 1984; Tannen, 1991, 1994). Although in most organisations the distribution of men and women are usually skewed on management level in advantage of men, in this research it is attempted to let the voice of female leaders participate on a 50/50 basis. It is not clear whether these differences will manifest themselves in the leadership of innovative teams. The following explorations are therefore proposed.

E 6.1. Leaders with different gender have differing perceptions about the social dynamics of teams and therefore have different opinions about the statements and questions of this inquiry.

E 6.1. Leaders with different gender in all the professions: facilitators, social scientists, innovation managers, artistic leaders and project managers have differing perceptions
about the social dynamics of teams and therefore have different opinions about the statements and questions of this inquiry.

The statements that are allocated to the Explorations E1 to E4 are presented below. In the shaded columns is indicated from which theoretical chapters the different statements derive. The theoretical expectation going with every statement is shown in the last row.

**Statements of the Questionnaire in Order of Explorations**

<table>
<thead>
<tr>
<th>QUESTIONNAIRE STATEMENTS</th>
<th>Exploration 1.1 to 4.2</th>
</tr>
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<tbody>
<tr>
<td><strong>Statements</strong></td>
<td>Origin of Statements</td>
</tr>
<tr>
<td></td>
<td>Theoretical Expectation</td>
</tr>
<tr>
<td></td>
<td>Play</td>
</tr>
<tr>
<td><strong>E 1.1</strong></td>
<td></td>
</tr>
<tr>
<td>“Playing” can be observed in successful, creative and innovative teams. “Playing” in innovative teams can go from “playing” with space, rule and equipment up to “playing” with financial resources. This does not apply to “playing” with ideas and concepts. For the team “to play” implies to have fun together and to challenge one another.</td>
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<tr>
<td>When a leader cannot “play” and give room, the team cannot “play”. Even when the team cannot “play”, it can still be creative.</td>
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<tr>
<td><strong>E 1.2</strong></td>
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<tr>
<td>In the performance phase successful team members need to trust and mutually respect each other. To achieve this: a. Trust of team members in themselves is an absolute condition b. Belief in the competence and expertise of other team members and team leader is an absolute condition. c. Very high cohesion of the team is an absolute condition.</td>
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<tr>
<td><strong>E 2.1</strong></td>
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</tr>
<tr>
<td>Teams that do not make time for team development will not survive.</td>
<td></td>
</tr>
<tr>
<td>In many organisations time for team development is not budgeted. Teams usually make time by ‘hiding’ the social activities coming with team development in more technical project management activities or by ‘stealing’ the time from other activities</td>
<td></td>
</tr>
</tbody>
</table>

Questionnaire Study
<table>
<thead>
<tr>
<th>Statements</th>
<th>Exploration 1.1 to 4.2</th>
<th>Origin of Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whenever there is a change in membership during the performance phase, the group process ‘stops’ abruptly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E 2.2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the Start-up phase, consisting of forming, storming and norming activities, team members in a successful team are concerned with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. their position in the group</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>b. working on the task</td>
<td>disagree</td>
<td></td>
</tr>
<tr>
<td>c. whether they share the vision of the project</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>d. structure and planning of the project</td>
<td>disagree</td>
<td></td>
</tr>
<tr>
<td>In the performing phase of the team, team members in a successful team are concerned with:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. whether everybody shows up on appointments</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>f. whether they identify with the team</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>g. Performance concern: effective team</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>h. helping each other/constructive feedback</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td><strong>A team needs “free room” to work creatively on a task and to reach a successful outcome.</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Physical room of its own.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>b. Financial room, for instance a budget.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>c. ‘Own’ facilities and technological support</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>What kind of environmental conditions do you as a facilitator create in order to provide for a creative climate of a team?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Freedom to behave a bit arrogant; ‘elite team’</td>
<td>disagree</td>
<td></td>
</tr>
<tr>
<td>b. Tolerance from the organisation that quite often procedural rules will be disregarded.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>c. Access to more information and colleagues than normally would be allowed.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>d. Free allocation of time for team members.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td><strong>E 3.2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A creative team has more viability when destructive thoughts and words are allowed. For instance freedom to question existing paradigms or structures and freedom to question each others beliefs.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td><strong>E 4.1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>When there is no space for laughter in a team you will eventually leave the group.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>How do you as a leader act in order to allow mutual respect to develop in the start-up phase of a team?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. open and vulnerable</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>b. you make clear that you do not know everything</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>QUESTIONNAIARE STATEMENTS continued</td>
<td>Exploration 1.1 to 4.2</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>------------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Statements</strong></td>
<td><strong>Origin of Statements</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Theoretical Expectation</strong></td>
<td></td>
</tr>
<tr>
<td>c. FORCEFUL</td>
<td>disagree</td>
<td></td>
</tr>
<tr>
<td>d. OPINIONATED</td>
<td>disagree</td>
<td></td>
</tr>
<tr>
<td>e. you continually observe the well being of your team members.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>How do you get the optimal creative output out of your team in a creative phase?</td>
<td>disagree</td>
<td></td>
</tr>
<tr>
<td>a. you neutralise dominant ideas</td>
<td>disagree</td>
<td></td>
</tr>
<tr>
<td>b. you give clear favourite alternatives at the outset of the group discussion</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>c. you use the creativity in the team and stimulate high interaction an hitch hiking on ideas</td>
<td>disagree</td>
<td></td>
</tr>
<tr>
<td>d. you give input if team members cannot.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E 4.2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Which of the following actions to team members (not the leader) perform in order to enable team success?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. report the progress of the team to a higher organisational level</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>b. Absorb outside pressures for the team so it can work free of interference.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>c. Find out whether others in the organisation support or oppose the team’s activities.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>d. Keep news about the team secret from others in the organisation until the appropriate time is there.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>What kind of activities do you as a leader of an innovative team perform in order to enable long-term team success?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Report the progress of the team to a higher organisational level.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>b. Absorb outside pressure for the team so it can work free of interference.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>c. Find out whether others in the organisation support or oppose the teams activities.</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>d. Keep news about the team secret from others in the organisation until the appropriate time is there.</td>
<td>agree</td>
<td></td>
</tr>
</tbody>
</table>

Table 6.1.: Summary of statements of the Explorations 1 to 4
6.2.2 Design of the Questionnaire

The questionnaire was set up as an inquiry for senior leaders of small teams with innovative tasks, who belonged to five different professional fields.

In the following section the procedure of designing the statements of the questionnaire will be described and the choice of the open questions will be explained. Finally the structure of the questionnaire will be presented.

Choice of a Questionnaire

Referring also to chapter 2 on Methodology the reasons for choosing a questionnaire can be summarised in the following three main points.

First, the confrontation between the distilled themes from theory (diverging) and the experience from practice was best achieved by using a questionnaire (converging). The limiting effect using forced choice questions made it possible to also focus the question. The open questions were designed to give the leaders freedom to formulate their perceptions in their own words on critical issues.

Secondly, the comparison of professions and gender is facilitated when comparing the answers to the same questions by means of inferential statistics. The use of a questionnaire makes the taken steps more traceable, which is in line with the tradition of empirical research.

Third the respondents had time to think about the answers in their own time. Also could the time of the respondents be shortened by the use of a questionnaire and time and distance restraints were easier to bridge for researcher and respondent.

 Forced Choice Items and Open Questions

The topics were selected from literature and related issues from practice. The theoretical and practical questions were discussed with a group of practitioners and then with representatives of the professional fields before the final version was edited. None of the initial representatives were respondents in the final inquiry.

Validation of Forced Choice Items by Practitioners

The first set of questions and were looked at and discussed with 15 practitioners of different companies (Organisational Development Group, spring 1994). They were analysed on language, clearness and relevance to the topics and to the research question. Some items were subsequently dropped and all were reedited in the form of statements. After the draft version of the questionnaire was designed, eight interviews were held with representatives of four professions, one male and one female of each. The following questions were asked in order to check and validate the list of statements:
1. Are the items easy to understand for a person in your profession?
2. Are the items stimulating to think about and to react to?
3. Are the items 'topical' and interesting in your professional opinion?
4. Are they true or false?
5. Are there any further questions of interest which should be asked within this context?

After rewriting the items, the questionnaire was finalised. Wherever applicable, the items were balanced on positive/negative statements. The different stages of the questionnaire validation is shown in figure 6.1.

Design of the first questions

First check of questions with practitioners
Draft version questionnaire: questions become statements

Validation of statements by female and male representatives of professional domains
Third and final version of the questionnaire

Figure 6.1.: Flow Chart of Design of Questionnaire

The questionnaires were identical for the five professional groups of respondents except for the address which was changed from facilitator, to manager etc. in accordance with the professions. However, two changes were made for the artistic leaders, which are explained below.

Based on the conversations with the representatives of artistic leaders, the term 'innovative' was replaced by 'creative', and the word 'organisation' was replaced by 'surroundings'.

The reason for the change from 'innovative teams' to 'creative teams' was, that the representatives of the artistic leaders were appalled by the world 'innovative', which to them sounded much too 'commercial' and 'belonged to the business world' (interview A. Wolzak, 1994; F. Abrahams, 1994). Observing that the definition as given in the criteria could be applied to the work of the artistic leaders this change was made in order to adjust to the context and language of this group. The word 'organisation' was changed to 'surroundings' because the artistic leaders worked on a project basis and not necessarily within an organisation used their 'surroundings' as sponsors. They would not consider questions with the word organisation as pertaining to their own situation (interview A. Wolzak; F. Abrahams, 1994) and thus would not answer the question.

A possible unwanted effect of this change might be that differences between the artistic leaders and the other groups might be due to this change in wording. This will be considered in the evaluation of the results.
**Choice of Open Questions**

One of the options in designing the questionnaire was to use open questions as well as forced choice items. Four open questions were devised with the first two covering issues of creative problem solving (Isaksen, 1985; sec. 5.1.2). The question on inspiration captures the climate of divergence needed in the creative process, the question on control intends to deal with the convergence needed in the creative process (Biondi, 1972). The other two open questions are associated with the output of the innovative teams and deal with the conditions at the beginning of a project which have influenced the later success or failure of the project. The open questions are stated as follows:

1. *How does a team stay inspired?* (item 6)
2. *What is minimally necessary to lead an innovative team, from the viewpoint of control?* (item 16)
3. *What are the conditions/reasons in the start-up phase that have lead to success of the innovative team?* (item S)
4. *What are the conditions/reasons in the start-up phase that have lead to failure of the innovative team?* (item F)

At the beginning of the questionnaire and as a warm-up an open question was posed asking to describe characteristics of a team from their own experience as a leader of teams.

**6.2.3 Additional Items**

A number of items on selection of team members, celebration of results and leadership did not lead to separate explorations, but were included in the questionnaire as separate items as they were expected to lead to interesting and relevant data. In the following is explained what theoretical background they have.

The selection topic is of current interest in practice because of the surge in using more teams for problem solving and innovation. Also in the field of teams audits and team development, selection issues are of importance and often inventories are used to assess the teams (sec. 4.4.1; Belbin, 1981; Katzenbach & Smith, 1993; Kolb, 1984).

The ritual of celebration comes from the developmental psychology of playing and the notion of crisis as a turning point (Erikson, 1968; Winnicott, 1971), but also from the background of group development, where the passages of time often are ritualised by celebration.

The additional statements on leadership come from different sources (Ancona & Caldwell, 1993; Allen, Katz, Grady & Slavin, 1988; Hackman, 1991). They are based on issues described in the group dynamic chapter (sect. 4.4.1) and on feedback from representative practitioners.
<table>
<thead>
<tr>
<th>Additional Statements in Key Words</th>
<th>Origin of Statements</th>
<th>Theoretical Expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection team: test personality</td>
<td>Play</td>
<td>Gr.</td>
</tr>
<tr>
<td>Selection team: consider commitment</td>
<td>L&amp;D</td>
<td>Dyn.</td>
</tr>
<tr>
<td>Selection team: consider creative expertise</td>
<td>disagree</td>
<td></td>
</tr>
<tr>
<td>Teams celebrate their successes</td>
<td></td>
<td>agree</td>
</tr>
<tr>
<td>Teams celebrate their failures</td>
<td>agree</td>
<td></td>
</tr>
<tr>
<td>Team members ‘talk up’ the team to outsiders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaders acquire resources for the team</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaders procure things which the teams needs from others.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leaders ‘sell’ the vision to the outside organisation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader political bridge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader information bridge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader has process overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader has content overview</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader establishes clear objectives</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leader establishes exact methods</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6.2.: Summary of Additional Statements

Lastly, the age and expertise defined as years of experience, are examined on an explorative basis.

6.3 Selection of Respondents and Procedure

This section describes the sampling, criteria and professional fields that respondents are sought in.

6.3.1 Sampling Method: Search of the Respondents

The respondents were selected through what is called the ‘snowball method’ (Babbie, 1975, pg. 203; Gilbert, 1994, pg. 73) as there was no adequate list which could be used as a sampling frame for the groups sought after. The respondents were identified by asking significant key persons to find people who would qualify for the criteria explained in the next section. The method involves for instance asking a human resource manager in a large multinational to search an innovative leader who might be willing to be a respondent, or asking a director of a well known theatre for artistic leaders who fit the criteria. This led to a list of 106 invited leaders, 75 of whom ultimately responded.
6.3.2 Criteria for Selection

The criteria for all respondents are the following:

*Senior leadership:* Leadership is defined according to Yukl's summary (1994, see also sec. 4.3.1) 'Leadership (...) involves a social influence process whereby intentional influence is exerted by one person over other people in an attempt to structure the activities and relationships in groups or organisations.' (Yukl, 1994, pg. 14). All leaders have a formal responsibility to guide and manage a team within a particular task domain and profession. The term 'senior leader' is used for all respondents and is defined as having a minimum of four years of experience in leading groups. The senior leaders all had international experience, by having done projects abroad and sometimes lived in another country. As English was the common language the questionnaires was written in English for all professional fields.

*Gender:* Research indicates that male and female roles do differ in corporations and organisations (Moss-Kanter, 1977, 1984; Tannen, 1986, 1990). Research on leadership however (Dobbins & Platz, 1986; Stratham, 1987; sec. 4.3.1) reports that there are no differences in effectiveness found, but that there might be differences in leadership style. Although in most organisations the distribution of men and women are usually skewed on management level in advantage of men, in this research it is attempted to let the voice of female leaders participate on an equal basis in order to investigate possible gender differences. An equal number of men and women in each profession were sought after.

*Teams:* Teams are defined as small work groups ranging from 3 to 12 members with a shared task (Van Zanten, 1998; Hare, Blumberg, Davies & Kent, 1994; sec. 4.1.1).

*Time-bound tasks:* The teams are defined as being time-bound in their tasks, meaning that the projects have a predetermined beginning and end. The team members were selected especially for these tasks and the teams adjourned after the task was completed.

*Innovative Projects:* A search in literature dealing with innovation reveals that definitions of innovation are abound (see section 5.1). As referred to earlier Rickards (1996) has restated the role of creativity in the management of innovation as 'a social problem-solving process of a non-routine kind.' (Rickards, 1996, pg. 15). West and Farr have suggested that a core concept of innovation is 'the intentional introduction and application within a role, group, or organisation of ideas, processes, products or procedures, new to the relevant unit of adaptation, designed to significantly benefit the individual, group or organisation.' (West & Farr, 1990, pg. 9). The innovative task has also been defined as a task with few or no known algorithms to reach the outcome (Amabile, 1992). As the definitions can be fitted together, they are used as selection criteria.

6.3.3 Description of Professional Fields

Senior team leaders in five different professionals fields were asked to participate in the questionnaire study. The professional fields are chosen on basis of a broad view of
innovative management shown in the spectrum from routine to innovative tasks as defined by Wijnen, Renes & Storm (1989, pg. 22; sec. 1.2.2). In this spectrum (see figure 6.2), Wijnen, Renes & Storm define routine work as highly efficient, with clear procedures and decision paths and with no unknown or new tasks. Project management is seen as effective and task oriented with new elements and aspects, which have to be considered. The other extreme Wijnen, Renes & Storm (1989) mention is improvisation which means that one must be flexible when working with new situations and aspects that arise in non-routine tasks. Using Schön’s wording a ‘unique, non-routine task’ (1982) is seen here as the last part of the continuum.

![Spectrum Adapted from Wijnen (Wijnen, Renes & Storm, 1989, pg. 24)](image)

Figure 6.2: Spectrum Adapted from Wijnen (Wijnen, Renes & Storm, 1989, pg. 24)

Shown on a continuum from routine to innovative, the professional leaders work in the non-routine domains. Three professional fields facilitators, innovative managers and project managers are directly related to innovation in business, the artistic leaders are chosen as a contrast group but also work within the defined spectrum. The social scientists were asked for their professional knowledge about the social domains and also act a theoretical contrast group.

In the beginning four professional fields were chosen to participate in the interviews but when the first interviews had been sent out a fifth group of technical project managers was added to include a group, that would be halfway through the continuum between routine tasks and innovative tasks. I felt that the spectrum of innovative tasks would be more complete with this fifth group. The reason for this addition was that during the literature study I became convinced that technical project managers were often asked for implementation of innovation and that a group of technical project managers should be included in the defined spectrum.

The professional fields I am interested in are the following: The sequence in which the professionals are presented throughout the thesis is based on the history of data collection.

1. **Facilitators/Consultants**
   Process consultants, facilitators of creativity sessions, leaders of ‘search conferences’; senior facilitators of innovative group sessions in business.

2. **Social Scientists**
   Researchers, professors, including lecturers, senior social scientists who are experts in the field of leadership, psychological development and/or group processes.

Questionnaire Study
3. **Innovation Managers**

Leaders of R&D teams in organisations such as for instance the NAT lab, managers of innovation projects; senior managers who lead innovative teams in business.

4. **Artistic Leaders**

Choreographers, directors of theatre plays, visual arts team leaders; senior artistic leaders who work with artistic groups in producing artistic performances or products.

5. **Technical Project Managers**

Project engineers, architects of large building sites, such as bridges for Public Works, senior project managers who lead project groups in construction building.

6.3.4 **Procedure**

The questionnaire was sent to the respondents with an introductory letter. In the questionnaire it was stipulated that all statements and questions were to be answered in relation to their own experience in working with their teams.

They were asked to complete the questionnaire. After completion a phone call was made during which respondent and interviewer went through the interview again with the interviewer having a second questionnaire which she completed as a double check. This double procedure was used to give the respondent a possibility to give contextual meaning to their answers. The phone call was formal and was confined to the text of the questionnaire. The two lists of data that were generated were compared and in case of differences between the responses the original response of the respondent was chosen.

6.3.5 **Analysis of Data**

The data collected through the questionnaire are, in statistical terms, of two different classes. Nominal data: “yes or no” in the forced choice items, “stated or not stated” in the open questions after the content analysis was done. Quasi-metric data: “four point scale”: ‘do not agree at all’ to ‘strongly agree’ in the forced choice items. The reason to opt for a four point scale instead of a five point scale was to oblige the respondents to take a clear stand in their answers. The methods used are summarised below, and for further description of statistical analyses used in this questionnaire study, consult Appendix C.

**Analysis of Forced Choice Items**

To sustain or deny the expected outcome, which is in turn used to reject or sustain the exploration, the cumulative percentage agreement of the respondents is used. The Kruskal Wallis rank test is applied to analyse differences between professions and differences between genders for every profession. To calculate p values between gender, the Wilcoxon test is applied. For nominal data the same analyses were performed with the Fisher Exact test, and p-values were calculated using the Monte
Carlo significance if cell numbers were too small. A correlation coefficient was used for all professions on gender, age and years of experience.

**Additional Statistics**

As a supplementary analysis various multivariate techniques were applied.

**Content Analysis of Open Questions**

To order the respondents’ answers to the open questions, an adaptation of Content Analysis (Berelson, 1954, Kasserjan, 1977) was used. The following steps were taken to analyse the results of each open question by a content analysis procedure performed by three independent judges for each question.

After considering all the respondents statements separately, the researcher assigned all statements to maximally nine clusters for each question. Then the statements were randomised and offered to three independent judges, who sorted the random statements into the given clusters individually. For the choice of the judges’ placement of the statements in clusters the inter-reliability score $K$, kappa (Siegel & Castellan, 1988, pg. 284) was calculated and a dendrogram was printed. Statement placements that had no consensus were discussed by the judges in a joint session in order to reach consensus as to which cluster the statement should belong. Again an interreliability score was calculated with a threshold of $K \geq .85$. If a minimal score of $K \geq .85$ could not be reached, the clusters for this question were discarded. In that case the researcher had to begin the procedure for that question again, after a rigorous analysis of the discarded clusters shown in the dendrogram.

After the content analysis was completed the clusters were included in the data of forced choice items and were treated in the statistical analysis as nominal data for the open questions.

<table>
<thead>
<tr>
<th>Readers Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>The questionnaire as sent can be found in Appendix A.</td>
</tr>
<tr>
<td>In Appendix B.2 the abbreviated list of all questionnaire items including the clusters derived from the open questions can be found together with the statistical results.</td>
</tr>
<tr>
<td>Appendix B.3 to B.6 describe the results of the forced-choice items and visualise significant results pertaining to Exploration 5 and Exploration 6 in graphics.</td>
</tr>
<tr>
<td>Appendix C presents an overview of the statistical analyses made.</td>
</tr>
</tbody>
</table>

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6.4 Results

The following section summarises the response to the questionnaire and presents a compilation of the characteristics of the different professional leaders found (see for criteria sec. 6.2.3). The results are described as they relate to each of the explorations that were proposed.

6.4.1 Response and Description of the Professional Fields and Respondents

The respondents were interviewed between June 1994 and September 1995. 75 team leaders of the 106 initially invited leaders responded (71%). 75% of the respondents are working in the Netherlands, the others are from Belgium, Sweden, Germany, UK and USA.

Total number of questionnaires sent: 106
Total response: 75

<table>
<thead>
<tr>
<th></th>
<th>facilitator sent</th>
<th>facilitator resp</th>
<th>soc.scientist sent</th>
<th>soc.scientist resp</th>
<th>innov. man. sent</th>
<th>innov. man. resp</th>
<th>artistic leader sent</th>
<th>artistic leader resp</th>
<th>project manager sent</th>
<th>project manager resp</th>
</tr>
</thead>
<tbody>
<tr>
<td>male</td>
<td>10</td>
<td>7</td>
<td>12</td>
<td>5</td>
<td>15</td>
<td>11</td>
<td>12</td>
<td>5</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>female</td>
<td>12</td>
<td>11</td>
<td>9</td>
<td>5</td>
<td>7</td>
<td>7</td>
<td>10</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>total</td>
<td>22</td>
<td>18</td>
<td>21</td>
<td>10</td>
<td>22</td>
<td>18</td>
<td>22</td>
<td>10</td>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

*Table 6.3: Response to Questionnaire*

Response and Missing Data

The questionnaire was completed with 75 respondents. With 65 a double check phone call was made. 22 respondents filled in the questionnaire and sent it without a follow-up by phone. With three artistic leaders interviews were held as they were not willing to fill in a questionnaire. The statements and open questions were read aloud and the answers were written down by the interviewer.

Of the original 66 forced choice statements 60 could be maintained. Four statements were cancelled due to missing data (category “don’t know”). The threshold for missing data was 15% or more of the respondents with no answer. Two statements had to be discarded because of unclear meaning, which was reported during the verbal interviews. The discarded items are listed below.

The following items were discarded due to missing data:

Part of statement 11D: Activities of a leader to enable long-term team success: Procure things which the team needs from other groups or individuals in the company, was discarded due to missing data for the analysis of Gender per Professions.
All of statement 12C: *What kind of environmental conditions do you as a leader create in order to provide of a creative climate of a team: access to more information and colleagues than normally would be allowed* were discarded due to missing data.

All of statement 14D: *When selecting a new innovative team it is of utmost importance to consider the position of the candidate in the organisation,* was cancelled due to missing data.

All of statement 14E: *When selecting a new innovative team it is of utmost importance: to consider the costs of the candidate,* was cancelled due to missing data.

Statements 15A and 15B: *How much time do you as a leader use a participating and coaching leadership style and how much time an instructing and delegating leadership style?* were discarded due to unclear content. Two issues were posed at the same time. This led to confusion of the issue and invalid answers.

The first open question of the questionnaire was not analysed for this thesis because the answers were very diversified and went beyond the scope of the research question.

**Description of Professional Fields and Examples of the Respondents**

The description of the found professional fields below is divided in a general section considering the selection criteria the professional field adhered to and in a section describing two leaders of each professional field as examples in order to give an impression of the selected leaders. Specific details have been omitted in order to warrant anonymity.

1. **Facilitators/Consultants**

Facilitators are consultants of various innovation processes, mostly in organisational settings of change and development or product development. Projects are distinct and usually fairly short ranging from creativity sessions to sessions of socio-technique and social engineering. Facilitators/consultants are not the internal boss of the project, but lead the project on a contract basis. They are usually academically trained professionals in one of the social sciences and work from their own small company or from a unit of a larger consultancy.

**Description of two Respondents**

This Facilitator and consultant is a lady of about 40 years of age and works in a larger consultancy. She does a variety of tasks from strategic consulting up to helping companies with creativity sessions for new product design with special techniques. She has 20 years of experience in leading groups and an educational background in one of the Social Sciences.

This male Facilitator has about 20 years of experience in working with and leading groups. He is aged about 45, has his own company, and regularly works as a change agent. One of his major projects was a socio-technical change process in a factory. Main countries of work for him are U.K. and the Netherlands. He associates often with others and likes to organise conferences for practitioners.
2. **Social Scientists**

Social Scientists work for diverse universities or research institutes. Their research is on issues of social psychology and the like, varying from group dynamics, development, group processes to networking.

They have and generate knowledge on social processes. All have a PhD or have a chair in one of the social sciences with sometimes sparingly some consultancy appointments next to that. All have publications on their name and some are quite well known.

**Description of two Respondents**

*This female Social Scientist has done her doctorate in the university where she works. She is about 35 years old and has next to her lectures at the university also much experience in leading groups. The research is mainly in the field of group processes and related social issues. She publishes regularly and presents at conferences in and out of the country.*

*This Social Scientist is a man halfway his forties who has more than 20 years of experience in his field. He works often with groups, students as well as managers in practice and he has been involved in major social research on groups and on creativity. After several internationally known articles in diverse academic journals he just finished a larger book. By times he also works as a consultant.*

3. **Innovation Managers**

Innovation Managers lead projects in IT companies, electronics companies, chemical plants or other technical companies or have innovation projects in management and administration connected with new research. Most of them work within large companies on projects. This means that they often have to choose from the people available within the company. Mostly technical background, engineers of technology, engineers in product development (Delft University of Technology or equivalent), sometimes medical or chemical background.

**Description of two Respondents**

*This female Innovation Manager works in a large IT company her main task being the introduction of administrative process innovation. She managed the set up of a new business unit within this large organisation and designed with her staff several new processes in logistic and in procedures. She is about 40 years old and has 10 years of experience in leading project groups. Her educational background is a masters in business administration.*

*This male Innovation Manager is a chemical scientist and manager in an R & D unit of a major multinational with a highly innovative task. The length of his projects run from half a year up to two years till finish. His experience in leading project teams with various subjects up to 8 years. He is about 38 years old and has a PhD in Chemistry.*
4. Artistic Leaders

Artistic leaders work in theatres or other public places for performance creating their own productions or products for the media. Their projects consist of producing theatre play, a dance performance with their team or artistic products. Funding is done by sponsors on a one to one basis and the team members are chosen from the artists labour market. As a educational background they have a degree of an artistic academy for instance dance, theatre, music or liberal arts. They work on project basis and often loose their income with the end of the project.

Description of two Respondents

This female Artistic Leader is artistic director of a well known dance company. She brings about new productions and has to look for sponsors every year. She has danced in several well know companies and has as degree from a dance academy. By now, having her own group she has build up an experience of working with dance groups and creating dance productions for 5 years. She is about 35 years old.

This male Artistic Leader is about 55 years old. He has had a theatre of his own with his own small company. When money ran out the building was taken by the city and he had to recede to working on project basis. He has 22 years of experience in leading groups and now works again on a project basis on theatrical productions in diverse settings with different groups.

5. Technical Project Managers

Project Managers work in engineering consultancies, construction industries, architect agencies and consultancies. Their projects are amongst others large building sites, from building bridges to the construction of large public buildings. Teams are usually interdisciplinary often coming from different companies. All work on project and profit basis for their company. Engineers have usually a technical background, often Delft University of Technology or likewise.

Description of two Respondents

This Technical Project Leader is engaged as an engineer in the construction bureau of a large public company. He is about 30 years old and has got his master at the Delft University of Technology. In projects he is a leading engineer and responsible for designing and supervising bridge building. His experience in leading teams amounts to five years.

This Technical Project Leader works world-wide in projects for a large construction and building company. He is in his mid thirties and responsible for operations construction in projects of large building sites like hospitals, libraries and offices. His experience in leading projects groups and teams amounts to eight years of experience.

Questionnaire Study 129
6.4.2 Results Content Analysis of Open Questions

The following paragraphs describe the results of the content analysis of the four open questions. The profile of each question is presented below with a short description of its clusters in italic script. These clusters are presented in order of their 'popularity' with the respondents.

Result Content Analysis for the Open Question: How does a team stay inspired?

Good Group Dynamics is described by the respondents by words like honesty, ethics, sharing, good communication and cohesion. Supportive Leadership, leading with care for, motivating the team and good leader feedback, followed. Freedom for members to pursue their own ideas and initiatives was in third position. Success, Vision captured by words like belief, perspective and faith, Goals came next, followed by Play/Fun which was described with words like going out, diverging from the task. Finally the questions were answered by responses that were clustered in External Feedback: communications with sponsors, clients and the outside world and Structure: information, project management.

The content analysis yielded nine clusters in the responses to this question. The% indicates the percentage of respondents who have given statements in the corresponding cluster.

<table>
<thead>
<tr>
<th>Cluster</th>
<th>Percentage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Dynamics</td>
<td>49%</td>
<td>help, sharing, honesty, ethics, involvement, cohesion, communication, internal feedback</td>
</tr>
<tr>
<td>Leadership</td>
<td>36%</td>
<td>facilitation, responsibility leader motivating team, care, development team members, leader feedback</td>
</tr>
<tr>
<td>Freedom</td>
<td>27%</td>
<td>own ideas team members, new elements, diversity, flexibility, external input, individual initiatives of team members</td>
</tr>
<tr>
<td>Success</td>
<td>27%</td>
<td>results, output, (special) achievement, progress, advantage</td>
</tr>
<tr>
<td>Goals</td>
<td>25%</td>
<td>challenge clear target, remain on task, shared objective, knowing where to go</td>
</tr>
<tr>
<td>Vision</td>
<td>25%</td>
<td>belief, meaning, faith, passion for task, perspective, seeing usefulness, mission</td>
</tr>
<tr>
<td>Play/Fun</td>
<td>24%</td>
<td>fun, humour, divergence of task, celebrating, going out</td>
</tr>
<tr>
<td>External Feedback</td>
<td>17%</td>
<td>outside world, organisation, contact, sponsors, contact clients, (positive) reactions</td>
</tr>
<tr>
<td>Structure</td>
<td>16%</td>
<td>information, project management, quality management, handling, politics, handling time pressure</td>
</tr>
</tbody>
</table>
Result Content Analysis for the Open Question: What is minimally necessary to lead an innovative team from the viewpoint of control?

Again good Group Dynamics, described by words like trust, mutual respect, group norms was mentioned most often. Supportive Leadership was again in second place described by a serving and supporting style with an ability for conflict management. This cluster was followed by Team Structure stated with words like clear responsibility, right expertise, clear standards of work. Next was the cluster Monitoring, meaning evaluating, holding audits, reviews and making adjustments with Planning following. Goals was mentioned after that and the last clusters for the Control questions were Success/Results and Surroundings.

The content analysis yielded eight clusters in the responses an answer to this question.

- **Group Dynamics:** 39% trust, openness, good atmosphere, group norms, cohesiveness, mutual respect
- **Leadership:** 35% serve and support, style of leadership, authority, position, crisis management
- **Team Structure:** 27% clear, defined tasks, responsibilities of team members, clear standards of work, right expertise, competency
- **Monitoring:** 27% evaluation, audits, review meetings, time management, information management, fine tuning, adjusting
- **Planning:** 23% milestones, planning material resources, budgets, time plan, deliverables, agreements on planning
- **Goals:** 17% clear aims, right direction, expectations, shared view, visions mission
- **Surroundings:** 13% support from top, project fit with company and culture, politics, outside world, external support
- **Success:** 12% results, output, success, progress, achieve objectives

Result Content Analysis for the Open Question: What are the conditions/reasons in the start-up phase that have led to success of the innovative team?

Motivation was the strongest condition mentioned for Success with statements such as commitment, belief, passion, involvement and a positive outlook under stress. Then the cluster Group Dynamics came in with trust, openness, humour, good atmosphere and good communication. Almost as important was the cluster Goals: clear targets and project results and a shared vision. Selection: right person in right place came next with Team Structure: clear standards of work, material conditions, clear task responsibilities came after that. The last clusters that described the reasons for Success were Surroundings, Leadership and Success/Results. The content analysis yielded eight clusters in the responses to this question.
Motivation: 49% commitment to goal, to group, passion, involvement, belief, interest in work, urgency, positive outlook under stress.

Group Dynamics: 39% trust, openness, humour, good atmosphere, informal, happiness, good communication

Goals: 35% clear target, clear definition, project result, shared vision, challenge, meaningful task.

Selection: 27% right person in right place, expertise, team composition, selecting own team.

Team Structure: 23% information, clear standards of work, material conditions, insight in project, clear task responsibilities.

Surroundings: 16% organisational culture, project fit with company and customers, support from top, favourable politics

Leadership: 12% facilitation, use of creative techniques, set an example, support team members

Success/Results: 7% experience of success, results, achieve objectives, competitive advantage.

Result Content Analysis for the Open Questions: What are the conditions/reasons in the start-up phase that have led to failure of the innovative team?

Unclear Goals, described by words like unclear direction, no shared vision and wrong expectations, was the strongest cluster in the answers to this question. Poor Group Dynamics was mentioned as a second reason described as no trust, no collaboration, poor communication and poorly handled conflicts. Unfit Team Structure with no clear task or responsibility and the wrong person in the wrong place came next. Unfavourable Surroundings were seen as rather important: no support from the top, poor project fit with company and unfavourable politics. Little Motivation was followed by Lack of or Wrong Resources, with too little/too much time and not enough budget. The final clusters mentioned were Little Freedom and Poor Leadership. The content analysis yielded eight clusters in the responses to this question.

Unclear Goals: 43% unclear objectives, no shared vision, unclear direction, wrong expectations, unclear or poor vision and mission

Poor Group Dynamics: 41% no trust, no sharing, no collaboration, poor communication, no respect, poorly handled conflicts and conflicts of interest

Unfit Team Structure: 33% no clear task or responsibility, wrong person in wrong place, inadequate team composition, inadequate membership changes, wrong or no competence, not the right expertise

Unfavourable Resources: 25% no support from the top, poor project fit with
Surroundings: company and culture, unfavourable politics, wrong things happening in the external world

Little Motivation: 21% no commitment to goal, no involvement, no interest in work, no belief, no enthusiasm, no meaning, no feeling of being appreciated

Lack of or wrong resources: 19% lack of needed information, too little or too much time, not enough budget and material rewards, missing or wrong material

Little Freedom: 16% no individual initiatives, no influence of ideas of team members, no flexibility, no imagination, no creative approach

Poor Leadership: 16% poor facilitation, no setting of example, no support for team, no authority or acceptance of leadership, little maturity of the leader

The outcome of the open questions will be taken into consideration when reporting on the results of the explorations. The open questions will also be discussed separately in the following chapter.

6.4.3. Results Concerning Theoretical Expectations (Explorations 1 to 4)

The following criteria were used to keep the explorative statement or not. The criteria are set analogous to a voting schema of a minimum of two third majority. If 70% or more of the respondents agree with the theoretical expectation, the explorative proposition is considered to have general agreement and relevance for further theory development. If 30% or less of the respondents agree with the statement the exploration will have to be considered in the light of the content of the statement and reviewed. Results in-between 30% to 70% agreement will be considered inconclusive and discussed and decided upon according to their content.

If the results for an exploration show mixed results, i.e. some responses do not agree with the explorative proposition and others are inconclusive, this will be examined on basis of content and taken into consideration in the final decision. The findings from the open items will be interpreted as supportive, neutral or non-supportive to the exploration.
## RESULTS AND EXPLORATIONS

### E1.1

<table>
<thead>
<tr>
<th>Statement</th>
<th>Theoretical Expectation</th>
<th>Cumul % agree</th>
<th># theor. expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>08 A Successful teams ‘play’</td>
<td>agree</td>
<td>94.5 %</td>
<td></td>
</tr>
<tr>
<td>08 B ‘Play ‘with rules and finance</td>
<td>agree</td>
<td>76.8 %</td>
<td></td>
</tr>
<tr>
<td>08 C Don’t ‘play’ with ideas</td>
<td>disagree</td>
<td>11.9 %</td>
<td></td>
</tr>
<tr>
<td>08 D ‘Playing’ implies challenge others</td>
<td>agree</td>
<td>89.2 %</td>
<td></td>
</tr>
<tr>
<td>17 A Leader cannot play, team cannot</td>
<td>agree</td>
<td>87.3 %</td>
<td></td>
</tr>
<tr>
<td>17 B Without play team still creative</td>
<td>disagree</td>
<td>47.8 %</td>
<td></td>
</tr>
</tbody>
</table>

### E1.2

<table>
<thead>
<tr>
<th>Statement</th>
<th>Theoretical Expectation</th>
<th>Cumul % agree</th>
<th># theor. expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>07 A Trust: cond. trust in themselves</td>
<td>agree</td>
<td>78.4 %</td>
<td></td>
</tr>
<tr>
<td>07 B Trust: cond. competence l. + t.</td>
<td>agree</td>
<td>90.5 %</td>
<td></td>
</tr>
<tr>
<td>07 C Trust: condition high cohesion</td>
<td>disagree</td>
<td>60.0 %</td>
<td></td>
</tr>
</tbody>
</table>

### E2.1

<table>
<thead>
<tr>
<th>Statement</th>
<th>Theoretical Expectation</th>
<th>Cumul % agree</th>
<th># theor. expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>02 A No time team developm. no survival</td>
<td>agree</td>
<td>79.7 %</td>
<td></td>
</tr>
<tr>
<td>02 B Make time by stealing it</td>
<td>agree</td>
<td>76.3 %</td>
<td></td>
</tr>
<tr>
<td>05 Member change, process stops</td>
<td>agree</td>
<td>40.5 %</td>
<td></td>
</tr>
</tbody>
</table>

### E2.2

<table>
<thead>
<tr>
<th>Statement</th>
<th>Theoretical Expectation</th>
<th>Cumul % agree</th>
<th># theor. expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 A Start concern: position in group</td>
<td>agree</td>
<td>72.6 %</td>
<td></td>
</tr>
<tr>
<td>04 B Start concern: work on task</td>
<td>disagree</td>
<td>78.4 %</td>
<td></td>
</tr>
<tr>
<td>04 C Start concern: share vision</td>
<td>agree</td>
<td>89.2 %</td>
<td></td>
</tr>
<tr>
<td>04 D Start concern: planning</td>
<td>disagree</td>
<td>77.0 %</td>
<td></td>
</tr>
<tr>
<td>04 E Perform.concern: keep appointments</td>
<td>agree</td>
<td>63.5 %</td>
<td></td>
</tr>
<tr>
<td>04 F Perform. concern: ident with team</td>
<td>agree</td>
<td>82.2 %</td>
<td></td>
</tr>
<tr>
<td>04 G Perform.concern: effective team</td>
<td>agree</td>
<td>91.8 %</td>
<td></td>
</tr>
<tr>
<td>04 H Perform.concern : constructive feedback</td>
<td>agree</td>
<td>87.8 %</td>
<td></td>
</tr>
</tbody>
</table>

### E3.1

<table>
<thead>
<tr>
<th>Statement</th>
<th>Theoretical Expectation</th>
<th>Cumul % agree</th>
<th># theor. expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>03 A Need ‘free room’: physical</td>
<td>agree</td>
<td>63.5 %</td>
<td></td>
</tr>
<tr>
<td>03 B Need ‘free room’: financial</td>
<td>agree</td>
<td>81.1 %</td>
<td></td>
</tr>
<tr>
<td>03 C Need ‘free room’: facilities</td>
<td>agree</td>
<td>71.7 %</td>
<td></td>
</tr>
<tr>
<td>12 A Cond.creat. clim: “Elite” team</td>
<td>disagree</td>
<td>31.4 %</td>
<td></td>
</tr>
<tr>
<td>12 B Cond. cr. clim.: tolerance organisat.</td>
<td>agree</td>
<td>71.4 %</td>
<td></td>
</tr>
<tr>
<td>12 C Cond. creat. clim.: access informat.</td>
<td>agree</td>
<td>Cancelled</td>
<td></td>
</tr>
<tr>
<td>12 D Cond. cr. clim: free allocation time</td>
<td>agree</td>
<td>58.2 %</td>
<td></td>
</tr>
</tbody>
</table>

### E3.2

<table>
<thead>
<tr>
<th>Statement</th>
<th>Theoretical Expectation</th>
<th>Cumul % agree</th>
<th># theor. expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>09 Destructive thoughts are allowed</td>
<td>agree</td>
<td>94.5 %</td>
<td></td>
</tr>
</tbody>
</table>

### E4.1

<table>
<thead>
<tr>
<th>Statement</th>
<th>Theoretical Expectation</th>
<th>Cumul % agree</th>
<th># theor. expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>08 A No laughter, you as leader leave</td>
<td>agree</td>
<td>67.1 %</td>
<td></td>
</tr>
<tr>
<td>18 A Leader at start: open , vulnerable</td>
<td>agree</td>
<td>88.7 %</td>
<td></td>
</tr>
<tr>
<td>18 B L at start: don’t kn. everything</td>
<td>agree</td>
<td>94.4 %</td>
<td></td>
</tr>
<tr>
<td>18 C Leader at start: forceful</td>
<td>disagree</td>
<td>34.7 %</td>
<td></td>
</tr>
<tr>
<td>18 D Leader at start: opinionated</td>
<td>disagree</td>
<td>43.8 %</td>
<td></td>
</tr>
<tr>
<td>18 E L. at start: observe well being team</td>
<td>agree</td>
<td>81.1 %</td>
<td></td>
</tr>
<tr>
<td>19 A Creat. output: neutralize dominance</td>
<td>disagree</td>
<td>50.7 %</td>
<td></td>
</tr>
<tr>
<td>19 B Creative output: give own ideas</td>
<td>disagree</td>
<td>33.8 %</td>
<td></td>
</tr>
<tr>
<td>19 C Creat. output: stimulate interaction</td>
<td>agree</td>
<td>98.7 %</td>
<td></td>
</tr>
<tr>
<td>19 D Creat. outp.: give input when tm. not</td>
<td>disagree</td>
<td>87.3 %</td>
<td></td>
</tr>
</tbody>
</table>
As stated before (sec. 6.2.1) for exploration 4.2, we are interested in the difference between the behaviour of leaders and of team members seen from the perspective of the leaders. A difference of 30% or more between the team actions and the leader actions should be found otherwise the explorative proposition cannot be held.

<table>
<thead>
<tr>
<th>QUESTIONNAIRE</th>
<th>Results and Explorations</th>
</tr>
</thead>
<tbody>
<tr>
<td>N = 75</td>
<td>Statements in key words</td>
</tr>
<tr>
<td></td>
<td>Theoretical Expectation</td>
</tr>
<tr>
<td></td>
<td>Cumul % agree</td>
</tr>
<tr>
<td>E 4.2</td>
<td></td>
</tr>
<tr>
<td>01 A</td>
<td>Actions team: report progress</td>
</tr>
<tr>
<td>01 B</td>
<td>Actions team: absorb pressure</td>
</tr>
<tr>
<td>01 D</td>
<td>Actions team: find out support</td>
</tr>
<tr>
<td>01 E</td>
<td>Actions team: keep news secret</td>
</tr>
<tr>
<td>11 A</td>
<td>Action leader: report progress</td>
</tr>
<tr>
<td>11 B</td>
<td>Action leader: absorb pressure</td>
</tr>
<tr>
<td>11 F</td>
<td>Action leader: find out support</td>
</tr>
<tr>
<td>11 G</td>
<td>Action leader: keep news secret</td>
</tr>
</tbody>
</table>

Table 6.4.: Summary of Response Compared to Theoretical Expectation of Statements

Playing and Trust

E 1.1 Playing has an important role in successful, innovative teams.

Results from the items 8 and 17 which refer to this exploration are agreed to overall. Most extreme agreement was found in the first statement 8.A: ‘Successful teams play’ which almost reaches unanimity with 94% agreement. The result of statement 17B: ‘When the team cannot play it can still be creative’ was inconclusive with 51% of the leaders stating that the team can only be creative if it can play.

From the open questions, the clusters play/fun and freedom which were found in the answers to the question about Inspiration and little freedom, which was found in the answers to the question on Failure come close to this item.

In conclusion, five statements support the exploration, one is inconclusive but in favour of the theoretical expectation. Based on these results the exploration is maintained. Results will be further discussed in the following chapter.

E 1.2 Basic Trust (in oneself and others) is essential if the team wants to be successful.

The statements from item 7 allocated to this exploration are agreed to overall. The statement 7B: ‘Belief in the competence and expertise of other team members and the team leader’ is strongly agreed to with 91%. Statement 7C: ‘Very high cohesion of the team is an absolute condition in the performance phase for successful team member in order to trust and respect each other.’ is agreed by 60% of the respondents.

The cluster Group Dynamics which appears in the responses to all of the open questions comes nearest to this explorations with words like ‘trust, honesty, ethics’
and 'no trust, no respect'. As this cluster is also one of the most frequently occurring, the reflections of the leaders give a great support to this exploration.

In conclusion, two statements out of three support the exploration. One item is inconclusive and in contrast with theoretical expectations. Based on these results the exploration is maintained. The inconclusive item will be discussed in the following chapter.

The Social Process and Team Development in Innovative Teams

E 2.1 Successful functioning of innovative teams implies that time must be spent on the developmental process of the group.

The statements from item 2 are in overall agreement with this exploration.

The statement from item 5 is not agreed to overall. Item 5, ‘Whenever there is a change in membership during the performing phase of the project, the group process ‘stops’ abruptly.’ is agreed to by only 41% of the respondents. The importance of membership change being such a strong disturbance was often disagreed with. In the interviews respondents said that this was too circumstantial. They responded that if a leader was leaving, this might be the case, however this would not be true for many team members.

In the open questions, the cluster Group Dynamics, which occurs in the answers to all of the open questions, comes closest to this explorations by containing words like ‘trust, communication, good atmosphere, involvement, group norms’ and ‘no trust, no communication, no collaboration’. The perceptions of the leaders strongly support this exploration with Group Dynamics coming about as first or second cluster for all of the open questions. The cluster Leadership, which was also found in all of the open questions, partially supports this exploration with the occurrence of ‘development of team members and facilitation’ and with ‘poor facilitation’ in the open question on Failure.

In conclusion, based on these results, the explorative proposition is maintained. The results of item 5 will be further examined in the Discussion Chapter.

E 2.2 In the start-up phase the team members engage in activities like positioning and vision sharing and not in task activities, whereas in the performance phase the team members are focused on the effectiveness of the team, their identification with the group and constructive feedback.

The statements from item 4 which test this exploration are agreed to except for the following.

Statement 4B ‘In the start-up phase team members in a successful team are concerned with working on the task’ should be disagreed to according to theoretical expectations, but is agreed to with 78%. Contrary to theoretical expectations statement 4D ‘In the start-up phase team members in a successful team are concerned with structure and planning of the project’ the item is agreed to with 77%.

136
As for the performance phase of the team the following results were found. Statement 4E ‘In the performing phase, team members in a successful team are concerned with whether everybody shows up on appointments’ is inconclusive with 64% agreement.

In conclusion for the start-up phase the two statements are agreed to and two statements are answered contrary to theoretical expectation. For the performing phase one statement is inconclusive but in favour of theoretical expectation, the others are in support of the exploration. Based on these results the explorative proposition can be partly maintained but it should be marked that in the start-up phase the team is concerned with task activities. This will be elaborated on in the Discussion Chapter.

**Creative Climate and Tolerance**

*E 3.1 To attain a creative climate a team needs an atmosphere of tolerance and ‘free room’ in its environment.*

The statements from the item 3 and item 12 which test to this exploration are generally agreed with except for the following statements.

Statement 3A ‘A team needs a physical room’ is inconclusive with an agreement of 64%. The statement 12A: An environmental condition a leader creates in order to provide for a creative climate is, to give the team ‘freedom to behave a bit arrogant: Elite team’, must be inverted. Thus 69% agree that the team should not behave ‘a bit arrogant’. Statement 12D: ‘For a creative climate, a team needs free allocation of time’ is inconclusive with 58% agreement.

The exploration is slightly supported by the cluster *Freedom* in the open question Inspiration, by the cluster *Surroundings* of the open question about Control and the open question Success and by the clusters *Unfavourable Surroundings* and *Wrong Resources* of the open question on Failure.

In conclusion, three statements support the exploration. Three other statements are inconclusive but are slightly in favour of the exploration. Based on these results, the exploration is maintained. The results will be discussed further in the following chapter.

*E 3.2 Tolerance for destructive thoughts is an important prerequisite when working with innovative tasks.*

The statement of questionnaire item 9, which is refers to this exploration is agreed to almost unanimously with 95% agreement to item 9 ‘A creative team has more viability when destructive thoughts and words are allowed.’

This exploration is somewhat indirectly referred to in the cluster *Group Dynamics* with the word ‘honesty’, which occurs in the first three open questions, and in *Poor Group Dynamics* with ‘poorly handled conflicts, conflicts of interest’ in the open question on Failure. In conclusion, the exploration can be maintained.
Leadership Style and Role

E 4.1 A leader of a successful, innovative team has a supportive leadership style in order to allow for and foster a creative climate.

Statements referring to this exploration from the items 18E, 19C and 19D are agreed to in five statements and inconclusive in four others.

The statement 18C: ‘Leader at start is forceful’ must be reversed; 65% agree that this is not the case; so this result is inconclusive. This also goes for statement 18D: ‘Leader at start is opinionated’ must also be inverted, then 46% of the respondents find that this is not the case. ‘In order to attain creative output you neutralise dominant ideas’ statement 19A must be reversed. Counter to expectation there was 51% agreement with the above statement. Statement 19B: ‘You give clear favourite alternatives’ has a disagreement of 66%, which was in accord with the expected outcome, but inconclusive for the exploration. Statement 19C: ‘You stimulate interaction and hitchhiking on ideas’ is agreed to by 99% of the respondents and Statement 19D: ‘You give input when the team cannot’ is agreed to by 87% contradicting the expected outcome. Statement 8E: ‘When there is no laughter you as a leader will eventually leave’ is inconclusive with 67% agreement.

From the cluster Leadership there is support for this exploration. As leadership occurs in all of the open questions, and is found two times on the first place and two times on the third, this cluster is seen as important. It is described with words like ‘motivating team, care, responsibility, serve and support, crisis management’, in the open question on Failure the words ‘poor facilitation, no setting of example, no support of team’ occur and thus favourably support the exploration.

In conclusion, five statements support the exploration, two statements are inconclusive but tend to reject the exploration, three other statements are inconclusive but are slightly in favour of the exploration. Based on these results, the exploration is maintained but needs to be reviewed. The rejected and inconclusive statements will be elaborated on in the following chapter.

E 4.2 Leaders and team members have different roles toward the outside world in reporting to hierarchy and sponsors, in absorption of pressure and in information exchange with the outside world.

For this exploration, leaders were asked about behaviour of leaders and team members and their answers to either one were compared.

On the statement ‘report the progress to the next higher level’, the team members were not to perform this action with only 38% agreement in statement 1A while the leader was to perform this task, 86% agreement with statement 11A This results in a difference of 48%. Also in the items ‘absorbing pressure’, the team does not perform this action (47% agreement with statement 1B), while the leader does perform this task (86% agreement with statement 11B). This shows a difference of 39%.

The statements, ‘find out about support in the organisation’ only show a difference of 10%, 71% agreement with statement 1D referring to team involvement, and 81%
agreement with statement 11F referring to leader involvement. This was also found for the statement ‘keep news secret’ with only a 4% difference. For the team, 53% agreement was found with statement 1E and for the leader 57% agreement was found with statement 11G.

The comparison of four statements support the exploration, while the comparison of four other statements do not support the exploration. Based on these results, the outcome is inconclusive and the exploration must be reviewed. This result will be considered further in the Discussion chapter.

### 6.4.4 Results of Differences between Leaders’ Perceptions (Exploration 5 to 6)

The following section described the results as they relate to the explorations five and six that were proposed in paragraph 6.1.2. In Table 6.4 an overview is given of all statistical results on the explorations and on the explorative issues of differences between age and between experience.

In order to test the explorations 5.1, 5.2, 6.1 and 6.2 all responses are analysed on differences between the professional fields. For the exploration on the difference between professions and/or gender a minimum of 30% difference is set as necessary to sustain the exploration. If this threshold is not reached the exploration will be reviewed on basis of the content of its statements. All significant differences between the professions and between the genders are visualised in charts in Appendixes B3 and B4.

<table>
<thead>
<tr>
<th>Questionnaire Forced Choice Items</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Item</td>
<td>Content Statements</td>
</tr>
<tr>
<td>N = 75</td>
<td>in key words</td>
</tr>
<tr>
<td>01 A</td>
<td>Actions team: report progress</td>
</tr>
<tr>
<td>01 B</td>
<td>Actions team: absorb pressure</td>
</tr>
<tr>
<td>01 C</td>
<td>Actions team: talk up outsider</td>
</tr>
<tr>
<td>01 D</td>
<td>Actions team: find out support</td>
</tr>
<tr>
<td>01 E</td>
<td>Actions team: keep news secret</td>
</tr>
<tr>
<td>02 A</td>
<td>No time team dev. no survival</td>
</tr>
<tr>
<td>02 B</td>
<td>Make time by stealing it</td>
</tr>
<tr>
<td>03 A</td>
<td>Need ‘free room’: physical</td>
</tr>
<tr>
<td>03 B</td>
<td>Need ‘free room’: financial</td>
</tr>
<tr>
<td>03 C</td>
<td>Need ‘free room’: facilities</td>
</tr>
<tr>
<td>04 A</td>
<td>Start concern: position in group</td>
</tr>
<tr>
<td>04 B</td>
<td>Start concern: work on task</td>
</tr>
<tr>
<td>04 C</td>
<td>Start concern: share vision</td>
</tr>
<tr>
<td>04 D</td>
<td>Start concern: planning</td>
</tr>
<tr>
<td>04 E</td>
<td>Perform concern: keep appoint.</td>
</tr>
<tr>
<td>04 F</td>
<td>Perform concern: ident w team</td>
</tr>
<tr>
<td>04 G</td>
<td>Perform concern: effectiv. team</td>
</tr>
<tr>
<td>04 H</td>
<td>Perf. concern: constr. feedback</td>
</tr>
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</table>

Questionnaire Study
<table>
<thead>
<tr>
<th>All Item</th>
<th>Content Statements</th>
<th>Results</th>
<th>continued</th>
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<tr>
<td></td>
<td><strong>Difference in key words</strong></td>
<td><strong>Signif.</strong></td>
<td>α = 0.1</td>
</tr>
<tr>
<td>N = 75</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>05</td>
<td>Member change, process stops</td>
<td></td>
<td></td>
</tr>
<tr>
<td>07 A</td>
<td>trust: cond. tr. in themselves</td>
<td>.096</td>
<td></td>
</tr>
<tr>
<td>07 B</td>
<td>trust: cond. competence l. t.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>07 C</td>
<td>trust: condition high cohesen</td>
<td>.063</td>
<td>rs = .23</td>
</tr>
<tr>
<td>08 A</td>
<td>Successful teams 'play'</td>
<td>.012</td>
<td>rs = .22</td>
</tr>
<tr>
<td>08 B</td>
<td>'play' with rules and finance</td>
<td>.026</td>
<td></td>
</tr>
<tr>
<td>08 C</td>
<td>don't 'play' with ideas</td>
<td>.034</td>
<td></td>
</tr>
<tr>
<td>08 D</td>
<td>'playing' implies challenge oth.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>08 E</td>
<td>no laughter, you as leader leave</td>
<td>.083</td>
<td>rs = .24</td>
</tr>
<tr>
<td>09</td>
<td>Destruct. thoughts are allowed</td>
<td></td>
<td>rs = .19</td>
</tr>
<tr>
<td>10 A</td>
<td>Celebrate successes</td>
<td></td>
<td>rs = .22</td>
</tr>
<tr>
<td>10 B</td>
<td>Celebrate failures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 A</td>
<td>Action leader: report progress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 B</td>
<td>Action leader: absorb pressure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11 C</td>
<td>Action leader: acquir. resources</td>
<td>.042</td>
<td>rs = .20</td>
</tr>
<tr>
<td>11 D</td>
<td>Action leader: proc. things</td>
<td>.057</td>
<td>miss.data</td>
</tr>
<tr>
<td>11 E</td>
<td>Action leader: 'sell' vision</td>
<td>.047</td>
<td>rs = .20</td>
</tr>
<tr>
<td>11 F</td>
<td>Action leader: find out support</td>
<td></td>
<td>rs = .24</td>
</tr>
<tr>
<td>11 G</td>
<td>Action leader: keep news secret</td>
<td>.024</td>
<td></td>
</tr>
<tr>
<td>12 A</td>
<td>Cond. creat. clim.: &quot;Elite&quot; team</td>
<td>.051</td>
<td>rs = .24</td>
</tr>
<tr>
<td>12 B</td>
<td>Cond. cr. clim.: tolerance org</td>
<td></td>
<td>rs = .18</td>
</tr>
<tr>
<td>12 C</td>
<td>Cond. creat. clim.: access inf.</td>
<td>cancelled</td>
<td></td>
</tr>
<tr>
<td>12 D</td>
<td>Cond. cr. clim: free alloc. time</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 A</td>
<td>Leader political bridge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13 B</td>
<td>Leader information bridge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 A</td>
<td>Selection team: test personality</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 B</td>
<td>Select. team: cons. commitm.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 C</td>
<td>Select. team: creative expertise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14 D</td>
<td>Select. team: position in organ.</td>
<td>cancelled</td>
<td></td>
</tr>
<tr>
<td>14 E</td>
<td>Select team: cons. cost candid.</td>
<td>cancelled</td>
<td></td>
</tr>
<tr>
<td>15 A</td>
<td>leadership style start-up phase</td>
<td>cancelled</td>
<td></td>
</tr>
<tr>
<td>15 B</td>
<td>leadership style perf. phase</td>
<td>cancelled</td>
<td></td>
</tr>
<tr>
<td>17 A</td>
<td>leader cannot play, team cannot</td>
<td>cancelled</td>
<td></td>
</tr>
<tr>
<td>17 B</td>
<td>without play team still creative</td>
<td>cancelled</td>
<td></td>
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### QUESTIONNAIRE Forced Choice Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Content Statements</th>
<th>Difference between Age</th>
<th>Years of Experience</th>
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<tr>
<td>N = 75 in key words</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>18 A</td>
<td>leader at start: open, vulnerable</td>
<td>0.036</td>
<td>rs = 0.24</td>
</tr>
<tr>
<td>18 B</td>
<td>leader at start: don’t kn. everything</td>
<td>rs = -0.26</td>
<td>rs = -0.21</td>
</tr>
<tr>
<td>18 C</td>
<td>leader at start: forceful</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 D</td>
<td>leader at start: opinionated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 E</td>
<td>1. at start: obs. wellbeing team</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 A</td>
<td>creat. output: neutralize domin.</td>
<td></td>
<td>rs = -0.20</td>
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<tr>
<td>19 B</td>
<td>creative output: give own ideas</td>
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<tr>
<td>19 C</td>
<td>creat. output: stim. interaction</td>
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<td>19 D</td>
<td>creat. outp.: g.input when t. not</td>
<td>rs = -0.21</td>
<td>rs = -0.18</td>
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<td>20 A</td>
<td>Leader has process overview</td>
<td>0.031</td>
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<td>20 B</td>
<td>Leader has content overview</td>
<td>rs = -0.34</td>
<td>rs = -0.23</td>
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<tr>
<td>20 C</td>
<td>Leader establ. clear objectives</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>20 D</td>
<td>Leader establ. exact methods</td>
<td>rs = -0.16</td>
<td></td>
</tr>
<tr>
<td>Nr statem.</td>
<td>60 (excl. miss data)</td>
<td>11 sign</td>
<td>8 sign</td>
</tr>
<tr>
<td>2 ≥ 25</td>
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<td>4 ≥ .25</td>
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### QUESTIONNAIRE Open Questions

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<th>Years of Experience</th>
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<tr>
<td>N = 75 in key words</td>
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<td></td>
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<tr>
<td>Open Qu.</td>
<td>How does a team stay inspired?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06 A</td>
<td>External Feedback</td>
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<tr>
<td>06 B</td>
<td>Freedom</td>
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<td>06 C</td>
<td>Goals</td>
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</tr>
<tr>
<td>06 D</td>
<td>Group Dynamics</td>
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<td></td>
</tr>
<tr>
<td>06 E</td>
<td>Leadership</td>
<td>0.063</td>
<td></td>
</tr>
<tr>
<td>06 F</td>
<td>Play / Fun</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06 G</td>
<td>Success / Results</td>
<td>0.012</td>
<td>0.009</td>
</tr>
<tr>
<td>06 H</td>
<td>Structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>06 I</td>
<td>Vision</td>
<td>rs = 0.24</td>
<td>rs = 0.25</td>
</tr>
<tr>
<td>Open Qu.</td>
<td>lead from viewpoint of control</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 A</td>
<td>Goals</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 B</td>
<td>Group Dynamics</td>
<td>0.012</td>
<td>C = 0.24</td>
</tr>
<tr>
<td>16 C</td>
<td>Leadership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 D</td>
<td>Monitoring</td>
<td></td>
<td></td>
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Questionnaire Study 141
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<thead>
<tr>
<th>N = 75</th>
<th>All Item</th>
<th>Content Statements</th>
<th>Difference between Profession</th>
<th>Difference between Gender per Prof.</th>
<th>Difference between Genders</th>
<th>Age</th>
<th>Years of Experience</th>
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<td>16 E</td>
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<td>16 F</td>
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</tr>
<tr>
<td>16 G</td>
<td>Surroundings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>rs = .16</td>
</tr>
<tr>
<td>16 H</td>
<td>Team Structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>rs = - .16</td>
</tr>
</tbody>
</table>

Open Qu. | Conditions for Success

| 5 A   | Goals     | .070     | .002     | rs = -.24 |
| 5 B   | Group Dynamics |     |          |           |
| 5 C   | Leadership |          |          |           |
| 5 D   | Motivation | .017     |          | rs = .26  |
| 5 E   | Selection  |          |          | rs = - .21|
| 5 F   | Success    |          |          |           |
| 5 G   | Surroundings |        |          |           |
| 5 H   | Team Structure |    |          |           |

Open Qu. | Conditions for Failure

| 5 A   | Little Freedom |           | rs = .15  |
| 5 B   | Poor Group Dynamics |        |           |
| 5 C   | Poor Leadership |          |           |
| 5 D   | Little Motivation |        | rs = -.17 |
| 5 E   | Unclear Goals  |          |           |
| 5 F   | Unfavourable Surroundings | .974 |           |
| 5 G   | Unfavourable Team Structure | | C = .31   |
| 5 H   | Lack of or wrong Resources |     | rs = -.16 |

Nr clusters | 33
5 sign. | 3 sign. | 1 ≥ .25 | 1 ≥ .25

Table 6.5. Statistical Results of all Items

Results on Differences between Professional Fields (Exploration 5)

For the forced choice questionnaire items, 49 statements, 82%, show no significant difference between the professional fields and 11 statements, 18%, show significant differences between professional fields.

When open questions are taken into consideration, this rises to 93 potential differences between professional groups. 77 statements and clusters, 83%, show no significant difference while 16 statements and clusters, 17%, show a significant difference between the professional groups.
**Number of Statements that Yield Significant Differences between Professions**

For every one of the 16 statements that show significant differences between the groups, the potential difference can be minimally one between two professions, and maximally 10 between all professional groups. In the table below, the number of differences between the professional fields is summarised for all statements and clusters. As 16 significant differences were found, the number of times one group can maximally differ from another is 16.

As table 6.6. illustrates, Social Scientists differed 8 times from Facilitators in their responses to the statements, Innovation Managers differed 4 times from Facilitators, Innovation managers differed from Social Scientists 2 times and so forth.

<table>
<thead>
<tr>
<th></th>
<th>Facilitator</th>
<th>Social Scientist</th>
<th>In. Manager</th>
<th>Artistic Leader</th>
<th>Project Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>8 x</td>
<td>2 x</td>
<td>6 x</td>
<td>3 x</td>
<td>4 x</td>
</tr>
</tbody>
</table>

**Table 6.6: Summary of Significant Differences between Professions**

The highest number of differences (11) is found between the Facilitators and the Project Managers. The lowest number of differences (2) is found between the Social Scientists and Innovation Managers.

In relation to all the other professional groups combined, Project Managers differ with the others 29 times. Facilitators differ 26 times, Social Scientists differ 23 times, Artistic Leaders and Innovation Managers differ 16 times from all other professional fields.

**Differences between Professions**

*E 5.1 Leaders with different professions: facilitators, social scientists, innovation manager, artistic leaders and project managers, have differing perceptions of the social dynamics of teams, and therefore, have different opinions about all statements and questions of this inquiry.*

As was described above, 83% of the 93 questionnaire statements show no significant difference between the professional fields, which means that only 17% of the statements and questions show significant differences in the responses given by the professional groups.

It is important to see, which items in content have difference, and as a sample we will take a significance of \( p = .05 \), where is showed that 8 statements significant out of 60 and 5 clusters significant out of 33 clusters of the open questions. These nine significant statements and clusters are summarised below.
20C You as a leader have to establish and maintain clear project objectives.

sign. .0002 All groups differ significantly from the Project Managers (0% disagreement 95% agreement) and from each other with two exceptions. The Artistic Leaders with the Facilitators who disagree most on this statement (17% and 44% disagreement) and the Innovation Managers with the Social Scientists (12% and 10% disagreement).

8A "Playing" can be observed in successful, innovative teams.

sign. .012 Project Managers disagree most of all professions with this statement (14% disagreement). Their opinion differs significantly from all other groups (Facilitators and Innovation Managers; 6%, Social Scientists and Artistic Leaders no disagreement).

Open Question 6G How does a team stay inspired?

cluster Success/Results: results, output, (special achievement, advantage)

sign. .012 Artistic Leaders and Social Scientists mention statements from this cluster significantly less (not stated) than Innovation Managers (45% stated) and Project Managers (42% stated).

Open Question SD Conditions/reasons that have led to success

cluster Motivation: commitment to goal, commitment to group, passion, involvement, belief, interest in work, urgency, positive outlook under stress.

sign. .026 Artistic Leaders mention statements from this cluster significantly more often (90% stated) than Social Scientists (30% stated) Project Managers (31% stated) and Innovation Managers (44% stated). Facilitators mentions items from this cluster significantly more often (61% stated) than Project Managers (31% stated).

8B "Playing" in innovative teams can go from "playing" with space, rules equipment up to "playing" with financial resources.

sign. .026 Social Scientists disagree most with this statement (50% disagreement). they differ significantly from Facilitators (0% disagreement), Artistic Leaders differ significantly (20% disagreement), Project Managers disagree (25% disagreement) significantly from Facilitators (0% disagreement).

20B One of the most important assets of leadership is that the leader has content overview over the total project.

sign. .031 Facilitators disagree significantly more (67% disagreement) than all the other leaders with this statement.

4F In the performing phase of a team, members in a successful team are concerned with: whether they identify with the team.

sign. .032 Project Managers differ significantly in their opinion on this statement (31% disagreement) with innovative managers (no disagreement) and Facilitators (17% disagreement).
20D You as a leader have to establish and maintain exact methods for working, precise structure and planning.

sign. .035 Project Managers agree most on this statement (61% agreement) and differ significantly from Social Scientists (11% agreement), Facilitators and Innovation Managers (28% agreement). Social Scientists differ significantly from Artistic Leaders (40% agreement).

Open Question FF Conditions / reasons that have led to failure.

cluster Unfavourable Surroundings: no support from top, poor project fit with company and culture, unfavourable politics, wrong things happening in external world.

sign. .041 Project Managers mention statements from this cluster significantly less often (5% stated) than Innovation Managers (44% stated) and Facilitators (28% stated).

11C What kind of activities do you as a leader of an innovative team perform in order to enable long-term team success? Acquire resources for the team.

sign. .042 Significant differences are found between Innovation Managers (78% high agreement) and Facilitators (28% disagreement), Artistic Leaders (38% high agreement) and Project Managers (37% high agreement). Social Scientists (80% high agreement) differ significantly from Project Managers (37% high agreement), Artistic Leaders (38% high agreement) and Facilitators (28% disagreement).

11E What kind of activities do you as a leader of an innovative team perform in order to enable long-term team success? 'Sell' the vision/path the group has to follow to the outside organisation.

sign. .047 Social Scientists differ significantly from all other groups in agreeing more highly with the statement (90% high agreement) than the other professions.

In conclusion, items of difference are found in the domain of task and control: clear objectives, success, content view, in the domain of inspiration and personal involvement: playing, playing with rules, motivation, identification and in the external domain: unfavourable surroundings and selling the vision. Based on these results, the explorative proposition needs to be reviewed.

E 5.2 The largest differences are expected between the perceptions of project managers and artistic leaders. The project managers are expected to voice more procedural, task oriented views than the artistic leaders.

This proves to be not the case as far as figures are concerned, as is again shown in table 6.2. The largest contrast between the professional groups, 17%, was found between Facilitators and Project Managers. They differed significantly 11 times. The Artistic Leaders and Project Managers actually have one of the least differences as they differed in opinion only 4 times.
But it is still important to look at the content of the four items in which Project Manager and Artistic Leaders and Project Managers differ. This time we set the level of significance at alpha p = 0,10

20C (sign 0.0062) You as a leader have to establish and maintain clear project objectives.

<table>
<thead>
<tr>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>0.005</th>
<th>0.046</th>
<th>0.337</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Managers</td>
<td>Artistic Leaders</td>
<td>0.162</td>
<td>0.085</td>
<td>0.013</td>
</tr>
<tr>
<td>Project Managers</td>
<td></td>
<td>0.0001</td>
<td>0.051</td>
<td>0.061</td>
</tr>
</tbody>
</table>

Table 6.7: p values Wilcoxon test

All groups differ significantly from the Project Managers (0% disagreement 95% agreement) and from each other with two exceptions. The Artistic Leaders with the Facilitators who disagree most on this statement (17% and 44% disagreement) and the Innovation Managers with the Social Scientists (12% and 10% disagreement).

8A (sign 0.012) "Playing" can be observed in successful, creative/innovative teams.

<table>
<thead>
<tr>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>0.614</th>
<th>0.193</th>
<th>0.531</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Managers</td>
<td>Artistic Leaders</td>
<td>0.840</td>
<td>0.520</td>
<td>0.188</td>
</tr>
<tr>
<td>Project Managers</td>
<td></td>
<td>0.003</td>
<td>0.026</td>
<td>0.055</td>
</tr>
</tbody>
</table>

Table 6.8: p values Wilcoxon test

Project Managers disagree most of all professions with this statement (14% disagreement). Their opinion differs significantly from all other groups (Facilitators and Innovation Manager; 6%, Social Scientists and Artistic Leaders no disagreement).

Open Question 6G (sign 0.012) How does a team stay inspired?

cluster Success/Results: results, output, (special achievement, advantage)

<table>
<thead>
<tr>
<th>Facilitator</th>
<th>Social Scientist</th>
<th>0.149</th>
<th>0.014</th>
</tr>
</thead>
<tbody>
<tr>
<td>In Manager</td>
<td>Artistic Leader</td>
<td>0.149</td>
<td>xxx</td>
</tr>
<tr>
<td>Project Manager</td>
<td></td>
<td>0.174</td>
<td>0.018</td>
</tr>
</tbody>
</table>

Table 6.9: p values Fisher

146
Artistic Leaders and Social Scientists mention statements from this cluster significantly less (not stated) than Innovation Managers (45% stated) and Project Managers (42% stated).

Open Question SD (sign .026) Conditions/reasons that have led to success. Cluster Motivation: commitment to goal, commitment to group, passion, involvement, belief, interest in work, urgency, positive outlook under stress.

<table>
<thead>
<tr>
<th>Facilitator</th>
<th>Social Scientist</th>
<th>In Manager</th>
<th>Artistic Leader</th>
<th>Project Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.118</td>
<td>0.253</td>
<td>0.116</td>
<td><strong>0.010</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td><strong>0.022</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>0.004</strong></td>
<td>0.368</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.636</td>
<td>0.320</td>
</tr>
</tbody>
</table>

Table 6.10: p values Fishe

Artistic Leaders mentions statements from this cluster significantly more often (90% stated) than Social Scientists (30% stated) Project Managers (31% stated) and Innovation Managers (44% stated). Facilitators mentions items from this cluster significantly more often (61% stated) than Project Managers (31% stated).

8E (sign .083) When there is no space for laughter in a team you [as a leader] will eventually leave the group.

<table>
<thead>
<tr>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>In Managers</th>
<th>Artistic Leaders</th>
<th>Project Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.551</td>
<td>0.687</td>
<td>0.551</td>
<td><strong>0.010</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.307</td>
<td>1.000</td>
<td><strong>0.019</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>0.307</td>
<td>0.125</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>0.019</strong></td>
<td><strong>0.019</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6.11: p values Wilcoxon

Project Managers disagree most with this statement (61%) they differ significantly from Artistic Leaders (10% disagreement), Social Scientists (10% disagreement) and Facilitators (30% disagreement).

On the one hand largest differences do not occur between Project managers and Artistic Leaders but between Project Managers and Facilitators. On the other hand differences between Project Managers and Artistic Leaders are on task oriented views favoured by the first. In conclusion, based on these results, the explorative proposition has to be adjusted.
Results on Differences between Genders (Exploration 6)

Differences between genders for all Respondents

To find out about differences between Genders for all professions a correlation was done with all between items and gender. The results had to cross a threshold of $r_s = .25$ for further discussion. Gender differences for all respondents with a correlation $r_s \geq .25$ could be identified 1 time, out of 93 clusters and statements.

Differences between genders within Professions

Significant differences in their responses to the questionnaire statements between gender within each professional field were found 11 times, 12%, out of 93 potential differences.

<table>
<thead>
<tr>
<th></th>
<th>1 x</th>
<th>3 x</th>
<th>5 x</th>
<th>2 x</th>
<th>--</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilitator</td>
<td>Social Scientist</td>
<td>In Manager</td>
<td>Artistic Leader</td>
<td>Project Manager</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 6.3: Summary of Significant Differences between Genders within Professions*

Differences between Genders

E 6.1 Leaders with different gender have differing perceptions about the social dynamics of teams and therefore have different opinions about the statements and questions of this inquiry.

Gender differences for all respondents with a correlation higher than .25 could be identified only 1 time out of 93 items.

Open Question FG (C = .31) Conditions/reasons that have led to failure.

- **Unfit Team Structure**: no clear task or responsibility, wrong person in the wrong place, inadequate team composition, inadequate membership changes, wrong or no competence, not the right expertise.

  sign .007 Male leaders give more statements in this cluster than female leaders.

In conclusion, on the basis of the above results, this exploration cannot be kept.

E 6.2 Leaders with different gender in all the professions: facilitators, social scientists, innovation managers, artistic leaders and project managers have differing perceptions about the social dynamics of teams and therefore have different opinions about the statements and questions of this inquiry.

In 88% of the 93 items show no significant difference between the professional groups, which means that only 12% of the items show significant differences in the responses given by the professional groups. The content of the items and the differences in gender are listed below.
Open Question 6G How does a team stay inspired?

Cluster **Success/Results**: results, output, (special achievement, advantage)

Sign .0009 The female Innovation Managers mention statements from this cluster significantly more often than male Innovation Managers.

For all other professions no significant differences between genders are found.

Open Question SB Conditions/reasons that have led to success.

Cluster **Group Dynamics**: trust, openness, humour, good atmosphere, informal, happiness, good communication

Sign .002 Female Social Scientists mention statements from this cluster significantly more often than male Social Scientists.

For all other professions no significant differences between genders are found.

Open Question 16.B What is minimally necessary to lead an innovative team from the viewpoint of control?

Cluster **Group Dynamics**: trust, openness, good atmosphere, group norms, cohesiveness, mutual respect

Sign .012 Female Artistic Leaders mention statements from this cluster significantly more often than male Artistic Leaders.

For all other professions no significant differences between genders are found.

11.D What kind of activities do you as a leader of an innovative team perform in order to enable long-term team success? Procure things which the team needs from other groups or individuals in the company.

Sign .023 Male Innovation Managers men agree significantly more than female Innovation Managers on this item.

For all other professions no significant differences between genders are found.

8.C “Playing” can be observed in successful, creative and innovative teams. This does not apply to “playing” with ideas and concepts.

Sign .034 Male Innovation Managers disagree significantly more than female Innovation Managers on this item.

For all other professions no significant differences between genders are found.

18.B How do you as a leader act in order to allow mutual respect to develop in the start-up phase of a team. You make it clear that you do not know everything.

Sign .036 Female Artistic Leaders agree more highly than male Artistic Leaders with this item.

For all other professions no significant differences between genders are found.

3.A A team needs 'free room' to work creatively on a task and to reach a successful outcome. Physical room of its own.

Sign .04 Male Innovation Managers agree significantly more than female Innovation Managers with this statement.

For the other professions no significant differences between genders are found.
Only very few differences can be reported between genders within the professional fields. The ones that occur are between male and female Innovation Managers (4), Artistic Leaders (2) and Social Scientists (1). No differences between the sexes were found for Innovation Managers. In conclusion, based on these results, the explorative proposition is not maintained.

**Results on Age and Years of Experience for all Professional Groups**

**Significant Differences in Age, and Years of Experience for all Professional Groups**

To explore the potential differences between Age for all professional groups (recorded in three intervals) and Expertise; years of experience (recorded in five intervals) the significance was calculated. Besides being significant, items had to cross a threshold of correlation $r_s \geq .25$.

Age differences for all respondents with a correlation $r_s \geq .25$ could be identified 3 times out of 93 clusters and statements.

Expertise differences for all respondents with a correlation $r_s \geq .25$ could be identified 5 times out of 93 clusters and statements.

**Results Additional Statistical Analyses**

A supplementary statistical analysis was performed on the ordinal data in order to complement the analysis to investigate possible options which might lead to new outlooks. A minimal amount of items (3) were found which could be collapsed with Cronbach Alpha. As the questionnaire was originally designed to foster diversity and difference between items than in the direction of convergence, no high expectations were held toward extensive statistical analyses. A decision was taken to discontinue further multivariate analyses of the data based on the assumption that further interesting results were unlikely to be found.

**Outcome Additional Statements**

In the additional statements four statements were not in accordance with theoretical expectations.

Statement 14A 'When selecting a new innovative team it is of utmost importance to test personality characteristics of the candidates' was inconclusive with 52% agreement. Statement 14C 'When selecting an innovative team it is of utmost importance to consider the creative expertise of the candidates' was contrary to expectations agreed to with 83%. Statement 10B 'Teams celebrate failures' was contrary to expectations inconclusive with an agreement of 46%. Finally statement 20B. 'One of the most important assets of leadership is that the leader has content overview over the total project' was contrary to expectations and inconclusive with 64% agreement.
<table>
<thead>
<tr>
<th>Additional Statements in key words</th>
<th>Theoretical Expectation</th>
<th>Cumul % agree theor expectation</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 A Selection team: test personality</td>
<td>disagree</td>
<td>52.3 %</td>
</tr>
<tr>
<td>14 B Selection team: consider commitment</td>
<td>agree</td>
<td>93.9 %</td>
</tr>
<tr>
<td>14 C Selection team: creative expertise</td>
<td>disagree</td>
<td>83.1 %</td>
</tr>
<tr>
<td>10 A Teams celebrate successes</td>
<td>agree</td>
<td>93.3 %</td>
</tr>
<tr>
<td>10 B Teams celebrate failures</td>
<td>agree</td>
<td>45.6 %</td>
</tr>
<tr>
<td>01 C Team members ‘talk up’ to outsiders</td>
<td>agree</td>
<td>66.2 %</td>
</tr>
<tr>
<td>11 C Leaders acquire resources for team</td>
<td>agree</td>
<td>93.2 %</td>
</tr>
<tr>
<td>11 D Leaders procure things for team</td>
<td>agree</td>
<td>87.5 %</td>
</tr>
<tr>
<td>11 E Leader ‘sell’ vision to organisation</td>
<td>agree</td>
<td>84.7 %</td>
</tr>
<tr>
<td>13 A Leader political bridge</td>
<td>agree</td>
<td>64.8 %</td>
</tr>
<tr>
<td>13 B Leader information bridge</td>
<td>disagree</td>
<td>31.0 %</td>
</tr>
<tr>
<td>20 A Leader has process overview</td>
<td>agree</td>
<td>97.3 %</td>
</tr>
<tr>
<td>20 B Leader has content overview</td>
<td>disagree</td>
<td>64.0 %</td>
</tr>
<tr>
<td>20 C Leader establishes clear objectives</td>
<td>agree</td>
<td>86.5 %</td>
</tr>
<tr>
<td>20 D Leader establishes exact methods</td>
<td>disagree</td>
<td>36.5 %</td>
</tr>
</tbody>
</table>

Table 6.12: Results Additional Statements

These results will be further considered in the following chapter.

Bridge to the next chapter

In this chapter a presentation was given of the respondents, explorations, development of the questionnaire, the collection and analysis of data, and finally of the results.

So what does this mean in relation to current theory and practice? This will be dealt with in the next chapter a discussion of results of the literature survey and of the questionnaire study. A comparison between the findings of the theoretical chapters is made and interpretations and speculations on the reasons of these results of the questionnaire are elaborated.
The discussion of the findings concentrates on the main results from the theoretical survey and questionnaire study. The syntheses of the literature chapters are discussed and compared with each other. The implications of the outcome of the explorations and further analysis of the questionnaire study are discussed.
7.1 Introduction

It is important to stress the discursive nature of this research which has come forth from differing sources. On the one hand, part of the data came from a literature survey, which we consider to be a 'conversation' (albeit one-sided) with the authors of the books and articles who have crystallised their knowledge in writing. On the other hand, data was collected through the 'formal dialogue' with experienced practitioners in the questionnaire study. Therefore, the results derived from the literature survey will be given the same weight as the outcome of the questionnaire study.

Critical questions are: How do the differing fields of the theoretical chapters compare to each other in relation to the proposed topics for innovative teams? (see chapters 3-5) How do the findings of the questionnaire relate to theoretical expectations and what interpretations can be given to the outcomes? (see chapter 6) In this chapter the findings are viewed in the light of their contribution to these research issues.

7.2 Connections and Contrasts in Theoretical Contributions

It is reasonable to assume that the theoretical domains discussed in the chapters 3-5 show an overlap or are connected. Sometimes this is because of shared origins or commonalities, sometimes because of parallel interests between the domains. But often the domains do not meet at all.

In this section connections, similarities and differences are explored between the theoretical chapters based on the selected topics of interest for innovative teams. The common topics of the theoretical chapters are combined in the most meaningful pairs and their main aspects are identified. The unique topic of playing that could not be combined with any other topic of the theories is presented in the final section. In conclusion some applicational answers from theory to the research questions are summarised.

7.2.1 Relationships and Similarities between Topics from Theory

In table 7.1 the connections between the relevant topics of the three theoretical chapters are presented. The choice of possible combinations is based on common features and on the potential for new aspects for innovative teams.

Every combination depicted in table 7.1. is described in a small section. We will compare the perspectives of the domains, identify the existing and new connections and search for the applicational value of this combination for innovative teams.
Role of Basic Trust and Trust Formation in Small Groups

In this section the topic role of basic trust from Chapter 'Playing in Learning and Development' (3) and the topic trust formation in the small group from the group dynamic chapter (4) are compared and connected to each other.

For the psychoanalytic theorists (sec. 3.3) trust is the basis for any development. Basic Trust grows from the first life stage and is a building block for all the following (Erikson, 1981). In the theory of Winnicott (1971), the concept of playing is directly linked to a ‘good enough’ development of trust. Without trust and what Winnicott calls the ‘capacity to be alone’ (sec. 3.3.2) no maturation or development will occur. The developmental theorists who focus on learning and cognitive development (Perret-Clermont, Perret & Bell, 1991; Piaget, 1951; Vygotsky, 1934) find that trust and a safe environment are a necessary condition for development.

In group dynamics (sec. 4.2) trust formation has an important role as a basis for the development of the group, communication and conflict-resolution. The trust formation topic of small groups comes directly from the theory of Gibb (1964), where ‘acceptance of self’ is the first and most important dimension of any group formation. The theory of Groupthink (Janis, 1982) has given us the dark side of too much cohesion and unqualified trust (in the leader). The connection with the outside world and thus ‘reality testing’ through interaction with the outside world can be lost and the group may be heading for disaster.

It is not new to make connections between developmental psychology and group dynamics. In organisation theory it is almost common practice (Kets de Vries, 1980) to borrow from the domain of psychotherapy to explain phenomena in working practice. The same is true of the analogy between being a parent and being a leader of a group. In a way the leader can be seen as a parent of a group or team. Just as for children the parent figure, the leader is the guardian of the ‘play and work space’.

Table 7.1: Combinations of Selected Topics of the Theoretical Chapters
The application value of basic trust and trust formation to group development is high. However it is not possible for the leader to prescribe trust. When trust is ordered instead of won, the team is pushed into a spontaneity paradox. The trustworthiness of the leader and the norms he/she establishes and maintains in the team are a crucial factor.

**Stages of Individual Development and Stages of Group and Team Development**

In this section the topic *stages of development* from the Chapter ‘Playing in Learning and Development’ and the topic *stages of group and team development* from the group dynamic chapter are compared and related to each other.

One characteristic that the stage models of psychological development (sect. 3.2, sect. 4) have in common is the following: with successful development of the person or the group, more complexity (cognitive and emotional) and more difficult tasks can be handled. Another shared characteristic is that if a developmental stage does not take place, the gains are lost. The stage must be ‘repeated’, otherwise a missing link remains (E. Erikson, 1982; Piaget, 1951; Tuckman, 1965). For instance, a child that has not successfully passed the school stage (Erikson, 1982, table 3.1), could have an inferiority complex for years until the person finally conquers this and regains the competence stemming founded in this stage in life. A group that fails to develop their norms of loyalty could experience break-ups, caused perhaps by members having other priorities in the performing phase. Until the stage of ‘norming’ is completed successfully, the unestablished norm will be a ‘hiccup’ in the group process. There is a certain iterative movement in the stages, which makes it very difficult to discern exactly where they begin and end. It is possible that people can be at different levels of development, be it cognitive, emotional or in terms of wisdom (J. Erikson, 1988).

The combination of development theories of an individual with development theories of a group is not very common. Yet in management theories many organisation metaphors (Morgan, 1986) such as the ‘learning organisation’ use this combination implicitly. Thus it is not unknown, but in the group dynamic models which we have chosen for this thesis, none of the theorists made this connection. Gibb based his model *Climate for Trust Formation* on extensive observational research (Gibb, 1964) while Tuckman used a summary of theories more than a connection with developmental psychology (Tuckman, 1965). For the theories of psychological development no connection with group dynamic theories is known.

What is the application value of the developmental concept for innovative teams? It is used in team literature (Scholtes, 1993). In theoretical discourse, one important thing the phase models have in common is, that they are disputed. This is true for Piaget (Communications, Conference Neuchatel, 1996) as much as for Tuckman (Mc Grath, 1991). Both parties are accused that there is not enough pragmatic evidence, that stages of development exist. Whatever the outcome of the dispute is, of key importance is, that from the developmental and from the group dynamic fields, it is advocated that timing and sequencing are crucial to the successful development of an individual or a group. Whatever the accuracy of the sequence might be, every individual, as well as
every group, must grapple with issues concerning trust, authority, norms, goals and
decision making. For teams, the more the leader and the team are able to handle these
issues, the better their performance climate will be.

**Context and Boundaries of Groups, Creative Climate in the Context of Organisations**

From the Chapter ‘Group Dynamics in Small Groups and Teams’ the topic context and
boundaries of groups and teams is compared and related to the topic creative climate in
context of organisations from the Chapter ‘Creative Climate’.

It is a cybernetic legacy to describe systems, like groups, within a larger context rather
than separately. In group dynamics, the system theorists (Bateson, 1972; Trist, 1981)
consider groups as part of larger systems. They work with them in the context of the
whole organisation. In the same line d’Ancona (1992) concludes that project teams
must manage their actions concerning their relationship with their organisation. The
interaction with this larger system determines the viability of the team and its output.

In the creativity domain (Amabile, 1996; Torrance, 1995), it is currently emphasised
that context, the environment (or press as it is called there, sect. 5.1.1), is something to
be aware of in a creative process. The system model of Csikszentmihalyi (1990b)
states that the world around us shapes our perceptions and that we must take this into
account. ‘A group needs to have values, skills and qualities in order to call a made
product creative and ‘persuade’ the outside world so that this will be perceived as being
creative.’ (Csikszentmihalyi, 1990b).

The novelty of this combination, system boundaries and creative climate, is rather
trendy. System thinking in the social and organisational domain (Senge, 1990),
creativity and innovation are the current buzz words in the management world and in
theoretical disputes. This growing connection is illustrated by the 1996 volume
‘Innovation in Organisations’ of the European Journal of Work and Organisational
Psychology, which included many creativity experts (West, 1996). By now the topic
creative climate in small groups could have as easily been discussed in terms of group
dynamics as in terms of creative climate.

The applicational value of context and situational approaches is considered to be high.
However the topics are more complex than might be assumed at first sight. Cybernetics
and systems theory are underlying notions in the models on context and boundaries.
One must be aware of misunderstanding between cybernetics and social science (see
sec. 4.2). Yet with clear definitions, the findings from small group research and from
creative climate/context research could be credibly and with added value combined
usefully for innovative teams. There is much to be explored and it seems worthwhile to
make further connections to socio-technical theory, but always keep in mind to avoid
oversimplification and to choose the right level of complexity.
Leadership of Teams, Creative Climate and Leadership

In this section the topic *leadership of small groups and teams* from the group dynamic chapter and the topic *creative climate and leadership* from Chapter ‘Creative Climate’ are compared and related to each other.

It is obvious that there is a relationship between leadership theories since they share the same origin. But do they follow the same path? Yukl states that in most leadership definitions it is assumed ‘that leadership involves a social influence process whereby intentional influence is exerted by one person over other people in an attempt to structure the activities and relationships.’ (Yukl, 1998, pg. 14) In general research on the leadership of groups involved in creative and innovative tasks suggests a preference for a participative and supportive leadership style for complex teams (sec.4.4.1).

Leadership as described in creative climate theories confirms the supportive leadership stance. The leader himself may lead creative sessions and use the rules developed by Osborn (1963; sec. 5.3.1); that is why in a well conducted creativity session a smooth and well functioning group process is achieved. We observe that the rule *postponement of judgement* enhances acceptance of self and others allowing trust to develop. This illustrates the relationship between the rules as developed by Osborn (1963) and the model for trust development as described by Gibb (1964, sect. 4.4.1). Leaders of creative sessions could profit from this combination.

We can assume, that leadership has always been part of communities and their activities. The connection between leadership of small groups and creative climate is easily made. Yet creative sessions are unique and might need a special kind of leadership that combines group dynamic and social skills with creativity skills.

Application of leadership theories is much in demand, so theoretical findings are of use. Even the literature which advocates autonomous teams includes extensive elaboration on leadership and facilitation of teams (Amelsvoort, 1993; Syer & Cannolly, 1996; Shonk, 1997; sect. 4.3.2). Theorists found a supporting style of leadership as a pre-condition for successfully leading innovative teams (Lauer, Isaksen & Dorval, 1996). Understanding how to achieve a creative climate in co-operation with group dynamic skills is obligatory for facilitators and leaders of innovative teams.

Metaphors of ‘Intermediate Space’ and ‘Free Room’

The topic *metaphors of intermediate space* from Chapter ‘Playing in Learning and Development’ is compared with and related to the topic *freedom, autonomy and a metaphor of free room* from Chapter ‘Creative Climate’.

One of the most intriguing topics and one of the most elusive is the metaphor of ‘intermediate space’. The term ‘the intermediate area of experience’ was coined by the psychoanalyst Winnicott in his article on transitional phenomena (1971) and is the source of most of the metaphors of intermediate space. To Winnicott, the ‘intermediate area of experience’ means a mental space of the very small child which begins to become conscious about the world around it, but is not yet capable of handling such a dangerous environment. The infant creates a mental play area where transitional
objects, like a teddybear, 'live' and are used as a bridge between itself and the outside world. According to Winnicott, the 'intermediate area of experience' is needed for the development of creativity, and in adult life becomes the 'place' where cultural experience occurs (sec. 3.3.2). Although deeply grounded in the development of the very small child this intriguing metaphor seems to pop up in places as different as poetry, developmental psychology, organisational change and creativity (sec 3). Winnicott himself wrote that he was amazed how the theory of playing and transitional phenomena was welcomed in the world (of clinicians) with a mild caution of the ever prudent psychoanalyst whether this was not 'partly an escape' (Winnicott, 1989b). As the linguist Jeremy Bentham (1748-1832, Vroom & Draaisma, 1985) stated candidly 'all our psychological ideas are derived from physical ones, all our mental ideas from corporeal ones.' It is evident that in the creation of metaphors, man must consider the space time continuum in which he sees the world. So using the metaphor of a mental space is not that amazing. Peter Checkland, a systems expert, talks in his lectures (1981) about refurbishing one's 'mental rooms', an image most audiences understand immediately.

Freedom and autonomy is one of the distinguishing characteristics between a creative climate and a good group climate (Anderson & West, 1996; sec. 5.4). The dimension freedom and autonomy is mentioned in creative climate inventories by different theorists (Amabile & Gryskiewicz, 1988; Van Gundy, 1987; Eckvall, 1990) and refers to: 'freedom and discretion to innovate, a sense of control over one's work and ideas, low levels of supervision' (sec. 5). In the TIPCI model of de Bruyn (1994) the 'free room' can be a physical room, a financial room, a symbolic room, a mental space of trust or decision making, or some other symbolic manifestation that can be recognised as such.

However, the combination of the metaphors of 'intermediate space', freedom and autonomy, and 'free room' is not common. We are not used to speak of 'intermediate space' in the realm of innovative teams. The connection is made because in both conditions the individual needs freedom, develops new images and expands barriers.

The applicational value of this elusive metaphor is not self-evident. But if looked at in terms of today's virtual worlds, the idea of a virtual space in one's mind reserved for playing and creativity is perhaps less far fetched. The growth of virtual worlds might cause us to explore and protect our inner psychological space, especially the ones where existential values, appreciation for the arts and religion are located. The concept of intermediate space is far reaching, but also vague and mythical. Either 'intermediate space should be more clearly defined or in the spirit of Winnicott's paradox (sec. 3.3.2) it should be left alone. De Bono said 'leave some parts unanalysed, so that they can analyse the rest' (de Bono, 1984).

For teams, the concrete connection between the intermediate space with autonomy of the team members, physical room and resources come close to the conditions needed for this 'intermediate area of experience' and we believe they are of applicational value.
Destruction and Construction, Risk Taking within Safe Conventions

In this section the topic destruction and construction from Chapter ‘Playing in Learning and Development’ (3) and the topic challenge and risk taking and conventions for creativity from Chapter ‘Creative Climate’ (5) are compared and connected to each other.

Seen from the paradigm of intersubjectivity, in successful development of the individual there should be room for socio-cognitive conflict (sec. 3.2.4) as much as for intersubjectivity (sec. 3.2.4). This seems to be a contradiction, since conflict and destruction are usually not associated with the trustful environment and relationship that intersubjectivity implies. Grossen and Perret-Clermont (1994) solved this contradiction by focussing on the prevalence of intersubjectivity in the exchanges between intersubjectivity and the socio-cognitive conflict, which are both needed for development. If we draw the analogy between the developmental process of the individual and the developmental process of a team, we see the following. If the team is to survive the changes between the mentally destructive and the co-operative modes, it is necessary that trust prevails. It should be stressed here that socio-cognitive conflict refers to an internal conflict about incompatible beliefs or ideas. It is not the same as socio-emotional conflict with someone, although if not voiced and accepted the latter may evolve from it.

In creative sessions ‘risk taking within safe conventions’ makes it possible for the members to generate and explore new ideas. The rules of conventions originally developed by Osborn (sec. 5.3.1), which were adopted by many schools, provide the possibility in a creative session, to take steps that otherwise would be not tolerated. In the creative climate inventories (sec. 5.2), risk taking is defined as a the willingness to try out new procedures with top management and allowing for the worker to quickly use opportunities even if it leads to failure (Eckvall, 1990; Van Gundy, 1987).

We observed a correspondence to socio-cognitive conflict, which is described by Grossen and Perret-Clermont as occurring within a climate good enough to maintain contact between members. A similar situation happens in a creative climate where risk taking and personal challenge take place in a psychologically safe environment. Both models, the development through socio-cognitive conflict and the creative climate have this conflicting condition of a potentially dangerous situation occurring/taking place in a safe environment as a requirement needed for growth, development and creativity.

Towards applying these concepts, this is very interesting especially in terms of the environment/conditions a leader must create within and outside of himself to handle this contradiction. Maturity and self-knowledge might be qualities needed to perform this successfully. We believe this area should be explored further.

7.2.2 Unique Element of a Theoretical Perspective

As unique element from the theoretical chapters the topic Playing and creativity remains. The reviewed literature of developmental psychology (sec. 3.4) states that playing is necessary for the development of creativity in children. Some go further and
state that this development also should continue in adult life (Winnicott, 1971). In both the team building literature and in the social psychology and organisational behaviour literature ‘playing’ is absent in the vocabulary with few exceptions. One of them was Buijs stating in his thesis ‘Homo innovans is more homo ludens than homo economicus’ (Buijs, 1987). But most of the time creativity, inspiration, intuition and innovation are the words found in literature that come close to ‘playing’ (Hare, Blumberg, Davies & Kent, 1994; Robbins, 1993; Katz & Kahn, 1978; West, 1996). There are also the descriptions of a multitude of social skills that are deemed necessary to survive in the complex situations that work groups and teams function in. The applicational value of introducing ‘playing’ into the world of innovative teams seems rather pragmatic and obvious. It legitimises the things teams already do anyway. As such, it is a domain that should be explored further by those interested in innovative team behaviour and success of teams.

7.2.3 Contributions from Theory to the Research Question of this Thesis

Based on the above considerations the contribution from the theoretical chapters can now be applied to answering the diverse parts coming forth from the research question (sec. 1.1.2).

‘What is the optimal/necessary climate for learning and creativity in a team?’ This question is becoming clear as theorists are developing thoughts about creative climate and teams. A new development is the team climate model and inventory (Anderson & West, 1996), which focuses on the social climate of the innovative team (sec. 5.3.2). However, compared to the creative climate inventories for organisations, the specific factors that seem to stand out for fostering a creative climate are challenge, risk taking, freedom and autonomy (sec. 5.4). The knowledge about facilitation and leading creative sessions (sec. 5.3.1) can be of help to the leader of an innovative team.

‘How does a team manage its environment?’ Ancona & Caldwell (1988) found some specific answers to this in defining strategies that a project team should use (sec. 4.3). The creativity literature finds context and environment very important but has not developed any techniques or practices to chart the environment. Creative climate and the models behind the inventories come closest.

‘What kind of leadership do innovative teams need?’ Theory of small groups is full of nuances but has mostly evolved to contingency views (Forsyth, 1990; Fiedler, 1967; Hersey & Blanchard, 1982; Yukl, 1998) while creativity theories state that the leadership style should be participative and supportive (Lauer, Isaksen & Dorval, 1996).

Can the issues team leaders face be charted and possibly solved with the current group dynamic theories or is a new theory of team dynamics needed? From a theoretical viewpoint, there is no reason why leaders cannot use the theories developed in the 1960’s and 1970’s. However, they may be not fully appropriate in their original version, the language is dated and issues such as the authoritarian personality seem to have more historical value than a current appeal. The current handbooks on group
dynamics based on the heritage of these theories, are theoretically clear and well argued on new and old research but seem less useful to practitioners. This explains the existence of a large amount of team literature with best practice methods. The existence this a new body of literature also shows the new directions team literature is moving toward which seems to speak another tongue than the social sciences (sec. 4.3.4, fig. 4.3).

Understanding the importance of playing is a new theoretical approach to ideas about the relational-process level of a successful, innovative team. With these come the concepts of the development of trust and the intermediate space where play occurs. Whether this is a physical space or a mental representation, as the original meaning of the word implies, is seen differently in this world. My opinion is that a mental space, as much as a physical space, is needed. This mental space in important for this might be the necessary playing ground to make creativity possible.

7.3 Practical Findings versus Theoretical Expectations

The results of the explorations 1 to 4 will be discussed and related to theories in order to interpret and deepen the understanding of the results. If a exploration is rejected the arguments both for and against it both in practice and theory will be deliberated. It is important to keep in mind that the statements with which the theoretical expectations are tested, refer to the perceptions of the leaders, who reflect on their own experiences with successful, innovative teams.

7.3.1 Discussion of the Explorations 1 to 4

In this section the explorations and their outcome are literally stated. For each exploration a short theoretical background is given as well as comments on the outcome. For a full description of generation and results of the explorations see paragraph 6.1.2 and 6.5.

E 1.1 Playing has an important role in successful, innovative teams.

This exploration is maintained.

We can state more confidently now: Successful innovative teams play; they play with ideas, they play together and they often also play with rules, procedures and finance. The connection between playing and successful, innovative teams (sec. 6.2) is sustained by the agreement of the leaders.

E 1.2 Basic Trust (in oneself and others) is essential if the team wants to be successful.

The content of this exploration is maintained in spite of the inconclusive item on high cohesion (40% of the leaders were in accord with the theoretical expectation). The results are discussed below.

Discussion
The basic trust model is largely based on and the human relations heritage (Gibb, 1964; Rogers, 1951) fostered in the laboratory approach (Lewin, 1947). This approach is also firmly taken from the psychoanalytic perspective of Erikson (1981) and Winnicott (1971). Theory and practising leaders agree that basic trust in oneself and others is necessary for successful, innovative teams and leadership of innovative teams.

Very high cohesion (sec. 4.4.1) proved to be a more controversial issue. Social Scientists, presumably with knowledge of the theory of Janis, disagree with the statement that a team needs to be highly cohesive. Artists and project managers disagree for more than half with this statement, while 72% facilitators and innovation managers find high cohesion an absolute condition for trust and mutual respect. As the theory of Janis (1982) suggests, leaders are usually not very aware of the dangers of high cohesion. This is understandable, because the danger manifests itself in the special condition of a closed system, with no information coming in or out, where trust in the leader is untested and untestable, and where members are punished if they question these conditions. These are the phenomena that may lead to Groupthink, meaning ‘a deterioration of mental efficiency, reality testing and moral judgement that results from in-group pressures’ (Janis, 1972, pg. 9; sec. 4.4.1) This is usually least understood and perceived by the persons involved most in a system.

\[ E 2.1 \] Successful functioning of innovative teams implies that time must be spent on the developmental process of the group.

This exploration has been maintained but the inconclusive statements will be discussed below.

Time must be spent on the social process of the group even if it has to be ‘stolen from other activities of the team’. If this is not done, the group will not survive.

The exploration was also based on the fact that most project management and team books do not give much attention to the social process of the group. The idea that groups need time for their social process is strongly confirmed by the practising leaders.

A majority of the leaders disagreed that with membership change the group process would be discontinued or stopped entirely. In the interviews, respondents said that it was too circumstantial. It might be the case if the leader was leaving, but is less true for many of the team members.

This is contrary to the theory of Gibb, to research literature and to my own experience as a facilitator. According to Gibb’s model, Climate for trust formation, this exploration should be supported in all situations. Also the findings of Buijs point in this direction. (sec. 4.3.1; Buijs, 1993)

It could be, that the explanation of these two opposing research results lies in the way the questions were posed and the data collected. In the research of Buijs consultants were asked ‘what kind of disturbance was worst’ and they replied that they had the most trouble when membership changed because it caused the whole process to stop. This was membership change, which took unique experts out of a tightly knit group,
and thus disrupted the work. In the questionnaire for this thesis, a much broader statement was made which included any change in membership, also the alternations due to changes in the phase of a project.

One interpretation of this result could be that leaders only perceive 'hindrance' when the task performance is affected as was the case in the research of Buijs. Leaders may not be very aware of the social process/development which the team goes through. One other interpretation might be, that in the perception of leaders in many situations, in spite of what theory tells us, membership changes do not greatly 'hinder' the process.

E 2.2 In the start-up phase the team members engage in activities like positioning and finding out whether they share the vision, whereas in the performance phase the team members are focused on effectiveness, they identify with the team and help each other.

This exploration is due to change, all points were agreed to except two important ones in concerning the process orientation in the start-up phase. All leaders disagreed consistently with the statements that in the start-up phase team members are concerned with working on the task and with the structure and the planning of the project.

These two statement are in discord with developmental theories of small group development (i.e. Bennis & Shepart, 1956; Boyd 1991; Gibb, 1964; Stock & Thelen, 1958; Tuckman, 1965), who consistently state that in a group the first concerns of group members are to find out whether they belong to the this group, whether they feel psychologically safe and how influence is balanced in the group. Only when these conditions are fulfilled working on the task becomes a concern and will be profitable. Team leaders strongly and univocally disagree with this view (78% and 77%) and place the task activities in the start-up phase. In their perceptions task activities at the start are as important as the social issues of team building. The exploration should be changed to a more balanced focus of the two dimensions.

E 3.1 To attain a creative climate a team needs an atmosphere of tolerance and 'free room' in its environment.

The explorative proposition is maintained.

Research on creative climate which states that tolerance and freedom are important conditions in an organisation if creativity and innovation are to bloom is supported by the leaders. Also the notions of organisational room: physical, financial and in resources, are confirmed by the perceptions of the practitioners.

It is interesting to note, that the statements 'free allocation of time' and 'arrogance of the team' and the freedom to behave as 'elite' were not agreed to by the leaders. On the contrary, in the verbal interviews leaders, leaders added quite candidly, that any kind of arrogance could ruin the relationship with customers and with the internal organisation and would thus threaten vital aspects of the project.
E 3.2 Tolerance for destructive thoughts is an important prerequisite when working with innovative tasks.

The statement of this exploration is maintained.
Conflicts are related to the social constructionist views on implicit social contracts with the 'environment'. In the social constructionist view socio-cognitive conflict is recognised as an indispensable and positive force if it can be handled in a psychologically safe environment (Doise, 1985; Grossen & Perret-Clermont, 1994). This is supported by the practical experience of the leaders. Tolerance of destructive thoughts is an important requirement when working with innovative tasks and was a condition highly accepted as is shown by the agreement score of 95%. This is interesting in view of the theory of socio-cognitive conflict and intersubjectivity.

E 4.1 A leader of a successful, innovative team has a supportive leadership style in order to allow for and foster a creative climate.

The content of this exploration is maintained.
The perceived trend is, that the more complex the task of the team is, the more relationship oriented the leadership style should be. The pointers/indications given by social and creativity theory about adequate leadership style are supported by the views research and of the practising leaders. A leader of a successful innovative team has a supportive leadership style in order to foster a creative climate. The exploration was maintained as far as the behavioural aspects is concerned, but is inconclusive as to the style of the leader.

E 4.2 Leaders and team members have different roles toward the outside world in reporting to hierarchy and sponsors, in absorption of pressure and in information exchange with the outside world.

The results of this exploration are inconclusive, the respondents agree with some but not all of the statements. However, the perceptions of the leaders suggest that 'reporting the progress' and 'absorbing the pressure' are seen as the leaders' responsibility, which indicates a difference in the way leaders look at the roles of groups members and themselves, although group members can fulfil quite a few of these 'outside' roles.

Ancona's research (Ancona & Caldwell; 1992) on teams about the inside and the outside environment refers to the management of the boundary with the outside world. She identifies successful and unsuccessful behaviour. In the research it seems as if teamleader and team members share the same activities. This was disputed in the exploration.

The results give a double picture. On the one hand leaders and team members have different roles toward the outside world in reporting to hierarchy/sponsors, absorption of pressure, information exchange with the outside world. On the other hand information exchange, keeping things secret, and informing others is done by the leader and the team members alike.
This is interpreted within the facilitating leadership style used. Leader share responsibility with team members in their informational task to the outside world. But the tasks they often keep to themselves are the ones that deal with accountability and with protection. Reporting progress toward the sponsor and protecting the team from outside pressure.

7.3.2 Discussion of Results Additional Statements

The results of the additional statements that are contrary to theoretical expectations are summarised below and will be interpreted at the end of this section.

When selecting team members, leaders are concerned with selecting on personality characteristics and on creative expertise. This issue is in contract to the belief, that for team selection only functional expertise is a criterion, but that leaders also look at the person they can choose and the creative skills a person has. In fact leaders with fewer degrees of freedom in their choice complained because they could not have influence on these criteria.

Teams seldom celebrate their failures. About 54% of the leaders stated that they did not ‘celebrate’ or give special attention to failures. There was no significant difference found between the different groups. Explanations given where, that companies or oneself did not want to be distracted the negative mage a failure would have. On the other hand, the leaders who ‘celebrated’ failures had many different ways of doing so. From having a tough feedback session to drinking away one’s sad feelings together.

One of the most important new assets is that the leader needs to have content overview. The Facilitators are the professional field who differ in this view from the other leaders.

*Interpretation*

The pattern coming up in these outcomes is an emphasis on task orientation and process orientation. This practical stance is in contrast with differences between the social science viewpoint on group processes and the task oriented viewpoint of the team literature. In the perspective of the questionnaire, a majority of the leaders state that task orientation is in practice combined with a high attention for group dynamic processes.

7.4 Discussion of the Explorations 5 to 6

In the following paragraphs the similarities and differences between the professions are discussed. shared perspectives of the leaders and the different profiles that came forth with 17% between the professional groups.

As both the explorations 5 and 6 about differences between the professions and differences between genders could not be maintained it is necessary to take a closer look and discuss the reason for these results.
7.4.1 Interpretation on the Shared Perceptions

On all of the following statements there is no significant difference found between the different professions or the gender between professions. Leaders agree for 70% or more with the theoretically derived statements.

In spite of limitations of this explorative research, 75 senior leaders gave evidence of agreement on statements concerning leadership and group process, for over 83% of the items without significant differences in their views.

If theorists proclaim that different tasks mean different process and handling of the task (Hackman, 1987; McGrath, 1981; Wijnen, Renes & Storm, 1989), how can we explain that the questionnaire shows so little differences between the perceptions of the leaders of different professions?

Looking at the profiles of the groups of professional fields different explanations are proposed as interpretation.

1 There is tacit knowledge to be found in the actions of practitoning leaders and senior managers (Baumard, 1999; Turner, 1994). According to Gergen (1997) once theory is written and published it starts to be part of our cultural thinking. So how does this fit with the controversies between theory and practice? One explanation that should be taken into consideration along with the above is the design of the questionnaire. Although most of the questions can be traced back to theory they have been given to representatives of the practitioners group beforehand with the question to make the item ‘understandable’ to their own group. See the development of the questionnaire (sec. 6.2.2). With the change in wording and language the statements gained in meaning within the professional group. So the language barriers between the theoretical statements and the language of practical group leaders were lowered by the preceding dialogue with the representatives of the groups.

2 Innovation is the common denominator which could override the differences between the leaders. The innovative task requires leadership on the relational-process level which is perceived to be general/shared by the leaders in spite of their differences in field-expertise and content of the task.

3 As always flaws and limitations of the research should be considered. Three limitations are noted:

Did I take the ‘wrong’ theory? Theory is diversified and in the social field usually has not one but many answers. The ‘wrong’ theories might have been selected in the sense that these theories do not discriminate enough to find many significant differences between the leaders or between the sexes.

Are there limitation is the research approach? There might be statistical limitations: cells (minimum of 5 per cel) were not large enough to make differences visible even though they exist. With low numbers in the cells missing data have a large influence on the outcome. However, this alone does not explain the findings. Following the first limitation in the selection of theory, the questions might have been too wide as to detect very specific differences. But the lack of differences on the level detected are undisputed.
Where the wrong groups invited? Maybe that was the case, maybe the contrast between the professional domains was too small. Looking at the spectrum of Wijnen, Renes & Storm (1989, fig. 6.1), the domain of routine tasks was excluded. Leaders were too much on the innovative side and that might have been an overriding factor of the other differences. A small indication in this direction is, that the differences between project managers and the other groups is highest on issues concerning task performance, laughter, clear goals, content overview and exact methods. It might be possible that in a study with leaders of teams with routine tasks, the difference might be stronger.

4 Group dynamics are a universal characteristic of a team and are more important than domain differences between the professions. The perceptions of leaders are alike. Because they all have to deal with the complex process of leading a team through a innovative task, they perceive the relational process in the same way even if their professional fields differ. Trust development and tolerance for destructive thoughts as an example of good group dynamics could be a basic property and quality of an innovative team next to their professional expertise.

### 7.4.2 Differences in the Leaders’ Perceptions

In the following paragraph the profiles of each profession and their differences will be described.

The ‘way things turned out’ during the data collection of the research is considered to be relevant information in terms of context and meaning of the results and is included in the discussion.

First, the response of the professional field is depicted (A), followed by some distinctive answers, that are representative for this profession (B), after which the gender differences within that profession are described (C). Every profile description ends with an interpretation of the found differences (D).

#### Profile of Facilitators

**A Response**

Facilitators were quick in their response. Some of the respondents rethought the questions and had very enlightening comments. At times, some were not willing or able to answer clearly because they had so many different situations from which to draw their experience. Some positive reactions and compliments were given, since the questions caused the facilitators to do some reflective thinking which had led them to new insights. The interview questions were understood and fit this group well, although sometimes the questions were found to have too few degrees of freedom and too little diversity.

**B Profile (8 extreme points from 34 options)**

Facilitators are the group that agrees most with the statement that “playing in innovative teams occurs with rules, with equipment and even with financial resources”.

Discussion
This is also the profession that finds high cohesion within the group most important. They want most of all groups extra access to information. As leaders they perceive the procurement of resources to be least important compared to the other professions. They do not ‘sell the vision’ and they do not find it an important asset for a facilitator to have content overview. (Appendix B.3)

Facilitators differ 26 times with the other professions.

C Gender Differences (Appendix B.4)

The only difference found between the genders is that male Facilitators agree more than female Facilitators with the statement ‘when there is no space for laughter in a team, you (as a leader) will eventually leave the group’.

D Interpretation

Most of the results can be linked to the profession of facilitator. Consultants/facilitators might be used to ‘playing’ more than managers or social scientists, as they are often invited to assist in ‘breaking patterns’ and finding new solutions/directions.

Other statements can also be labelled job specific such as the need to have more access to information for the team. This is often needed in other professions but facilitators/consultants are the ones who can make this kind of demand. On the other hand, they have no hierarchical power and often cannot procure resources for the team, as they are leaders without a budget. As their expertise is linked to process expertise it is not really astonishing that they do not find content overview an indispensable asset.

It is important to note, that the facilitators differ in their views on leading a team most of all groups with project managers. Yet, it is likely these to groups might have to work together on projects. This difference in view can have a positive side; consultants have a different view on the world and are thus good ‘pattern-breakers’ for questions of the project-managers. But the difference could also be a core of conflict and troubling, since both have to bridge a communication barrier.

Profile of Innovation Managers

A Response

Innovation Managers were quick in their response and often apologised for not having reacted within a week. They were short and clear in their responses and very businesslike and most of them were interested in the outcome of the questionnaire. The interview questions fit this profession very well. They could identify with the questions and understood them rather easily.

B Profile (3 extreme points from 34 options)

Most interesting is that this group, out of five professions did not profile itself in any extreme way, except for three out of the 34 options, which makes the Innovation managers the profession most in the middle. They are concerned with a high identification with the team in the start-up phase. (Appendix B.3)
Innovation Managers find the cluster *Success/Results* important as a means to keep the team inspired and find the cluster *Unfavourable Surroundings* an important condition for failure of an innovative team. (Appendix B.3)

Innovation Managers differ 16 times with the other professions.

C Gender Differences (Appendix B.4)

Male Innovation Managers agree significantly more than female Innovation Managers with the statement: “a team needs ‘free room’ to work creatively on a task and to reach a successful outcome.” The male Innovation Managers also agree significantly more than female Innovation Managers with the statement “In the performance phase members of a successful team need to trust and mutually respect each other. Team member’s trust in themselves is an absolute condition.”

Male Innovation Managers agree significantly more than female Innovation Managers that “playing” can be observed in successful, creative and innovative teams. They disagree significantly more than female Innovation Managers with the statement that teams do not “play” with ideas and concepts.

Male Innovation Managers agree significantly more than the female Innovation Managers that a leader of an innovative team procures things that the team needs from other groups or individuals in the company in order to enable long-term team success.

D Interpretation

The middle position of this profession could be explained by the work situation of innovation managers who are employed by their organisation and do not work on a contract basis. Working within an organisation often with the same people might explain the need for high identification with the team, needing success and results to keep members inspired and being troubled by unfavourable surroundings (such as higher management) as a reason for project failure. This can be seen as job related, although there might be other reasons.

It is interesting to note that in the gender differences, the male Innovation Managers seem to be more helpful in procuring, playing and playing with ideas, and finding trust more important than the more stern female Innovation Managers in this profession. It seems as if common stereotypes are turned around and a move toward tough female Innovation Managers. On the other hand it should be noted that these differences concern only 6% of the answers.

Profile of Artistic Leaders

A Response

Responses were very low. Artistic leaders live another kind of life than the one you fill in questionnaires. Often the questionnaire disappeared straight into the waste basket and secretaries could be very direct as they fended off an intruding researcher to protect the time of their valuable art directors. With reactions close to zero something else had to be tried. In a second try to reach this profession an interview of an hour was offered. Reactions were mostly negative again but now at least there was a reaction. In
the third and last try personal interviews were held with the questionnaire in hand. This finally succeeded. The written interview questions did not fit this group well. However, once the questions were read to the respondents in an interview with personal contact sitting face to face, there were no more problems and the interviews went smoothly. Some respondents commented that this was another world and that researchers want to know strange things.

B Profile (11 extreme points from 34 options)

In comparison with the other four professions, the artistic leaders agree the most with the occurrence of playing in innovative teams, they acquire resources for the group, they agree that a leader has content overview and will leave the group eventually when there is no room for laughter. Least of all the professions, do they sell the vision to the outside world. They think least of all that the leader has to establish and maintain clear project objectives. (Appendix B.3)

For the open questions they do not state the cluster Success/Results as a means to inspire the team. On the other hand for the most important conditions to achieve success they give statements of the cluster Motivation followed by statements of cluster Group Dynamics. (Appendix B.3)

Artistic Leaders differ 16 times with the other professions.

C Gender Differences (Appendix B.4)

Male Artistic Leaders agree more than female Artistic Leaders with the statement “in order to provide for a creative climate, the team needs freedom to behave a bit arrogant; ‘elite team’.”

Female Artistic Leaders agree more highly than male Artistic Leaders with the statement that: “you make it clear that you do not know everything in order to allow mutual respect to develop in the start-up phase of a team.”

D. Interpretation

Looking at the statements, the artists seem extreme which just might be their stereotypical description. Playing is important for their teams, since they will leave the group if there is not enough laughter. They have no clear project objectives. (Intrinsic) motivation and good group dynamics are the most important reason for success. Success and results are not mentioned when wanting to inspire a team and artistic leaders do not “sell the vision” to the outside world.

For them leadership means having content overview and procuring things for the team. Male Artistic Leaders are more elitist than female Artistic Leaders, while female Artistic Leaders are more likely to claim not to know everything.

It is interesting to note that artistic leaders have on the one hand a lack of procedures but on the other they value content overview as much as process overview. Another interesting point is that artistic leaders and project managers have many things in common.
Profile of Project Managers

A Response

The Project Managers were very quick in their response. The interviews could be held without problems within a short time and the written responses were sent soon after. Phone interviews were efficient, short and to the point and questions were easily understood and filled in quickly, precisely and without questioning. The questionnaire fit this group well and was answered without problems.

B Profile (nine extreme points from 34 options)

Of all the professions the Project Managers find that the leader must “sell the vision” to the outside world. They find it important for the leader to have content overview of the project, and to establish and maintain clear project objectives as much as exact methods for working, precise structures and planning. Project Managers agree least of all with the need to identify with the team in the performance phase and least that playing can be observed in innovative groups. They find least of all the other groups that the leader has to provide access to extra information. Least of all the professions will they leave a team when there is no space for laughter. (Appendix B.3)

They also mention the cluster Unfavourable Surroundings as a condition leading to failure least of all the professions. (Appendix B.3)

They differ 29 times with the other professions.

C Gender Differences

There are no Gender Differences as the respondent were all male.

D Interpretation

All of the above can be immediately related to the job description and stereotypical image of the project manager. Big boss, knows and organises everything.

They are not so much in favour of playing (but remember, this is true only for 14% of the project managers). They are very efficient and they do not need identification with the team in the performance phase. 61% of the Project Managers will stay even if laughter has ‘left’ the group and go on till the bitter end.

It is interesting to note that there were no women found within the time constraints of this study, which reflects the scarcity of women in this professional field.

Profile of Social Scientists

A. Response (Appendix D)

Social Scientists showed a rather low response with very diversified reactions to the questionnaire. The non-response was interesting but also troubling. Some social scientists refused to fill in the questionnaire, because of competition with their own research. One bluntly refused to respond as he did not believe in the use of questionnaires. Some well known social scientists didn't react at all while others said they were not specialised enough in this field. Finally, as the required number of responses seemed impossible to get, the author found out that personal recommendations were one of the ways to get answers in this political minefield. During the interviews some

Discussion
very interesting conversations and replies came about, but often the social scientist objected to the concepts that were used ('why do you use this .... theory, read mine'). Some found the questions to be not specific enough and they were thought to be too practical. The questionnaire did not quite fit many respondents of this profession as the questions were not posed rigorously enough for them.

B. Profile (11 extreme points from 34 options)

Of all professions the Social Scientists find it most important to acquire resources and for the team and to "sell the vision" to the outside world.

They, most of all groups, agree that they will leave eventually if there is no room for laughter. They agree least in the importance if the team members identifying with the team in the start-up phase, nor do they agree that it is an absolute condition to have high cohesion in the performance phase. They, least of all professions, agree to exact methods, precise structure and planning in an innovative team and they also agree least that playing can go from playing with space, rules and equipment, up to playing with financial resources. (Appendix B.3)

They do not mentions the cluster Success/Results as an important ingredient for inspiration and they least of all professions mentions statements from the cluster Motivation as a condition for success. (Appendix B.3)

Social Scientists differ 23 times with the other professions.

C. Gender Differences (Appendix B.4)

Female Social Scientists agree more than male Social Scientists that "playing" can be observed in successful, creative and innovative teams.

Female Social Scientists agree significantly more than male Social Scientists with the statement: "When there is no space for laughter in a team you [as a leader] will eventually leave the group."

D. Interpretation

Most astonishing is the double image the profession seems to project. A possible explanation lies in the double task this professional field was asked to perform by the researcher. The Social Scientists were asked to respond using their theoretical expertise but once the questions were practical, they could only use their own leadership experience.

This might explain why, on the one hand, the answers are extremely lenient (no exact methods for working or planning; the leader leaves when there is no room for laughter, very high cohesion is not necessary) and yet, on the other hand, they seem in contrast also very confined (it is important to acquire resources, no playing with space, rules and finance is found, it is important to sell the vision, motivation is mentioned least as reason for success).

An interesting point to notice on gender is that the female Social Scientists 'play' more and seem to have more need of humour in this professional group.

On the whole, it should be noted that the differences between these professional leaders and the other do not exceed 18% of all the statements and questions answered.
7.4.3 Differences in Age and Years of Experience for all Respondents

For all respondents only a few indications are found for differences on the characteristics in age and years of experience. But the majority, more than 90%, do not indicate any difference at all. The differences found are summarised below.

Age
The three relations found between different ages and answers to the questionnaire statements are:

The younger leaders are more likely to state that they act ‘opinionated’ in order to allow mutual respect to develop in the start-up phase of a team. The younger leaders also find it more important than the older ones to establish and maintain clear project objectives as a leader.

The older leaders state more often that the cluster, Motivation, is a condition to attain Success.

Years of Experience
The five relations found between different years of experience and answers to the questionnaire items are:

The more experienced the leaders, the more they find that members of a successful team are concerned with ‘their position in the group’ in the start-up phase of a team. They also agree more than their less experienced colleagues with the statement that members of a successful team are concerned about ‘the structure and planning of the project’ in the start-up phase of a team. The more experienced the leaders, the more they agree with the statement that members of a successful team are concerned with ‘whether everybody shows up on appointments’ in the performance phase of a team. And they also agree more with the statement that members of a successful team are concerned with ‘whether they identify with the team’ in the performance phase of a team.

The less experienced the leaders, the more they mention the cluster Selection as a condition to attain success.

Interpretation and Points of Interest
It is interesting to note that the differences of the characteristic Years of Experience are all found in the section group development of the questionnaire. The more experienced leaders, the more their views concurred with group dynamic theory (Tuckman, 1965). This is in accord with the findings Wijnen, Renes and Storm (1989, pg. 43) report on the differences between inexperienced and experienced project leaders from very diversified organisations. Differences pertained to giving more importance to project philosophy, social and personal understanding and much less to controlling and external structuring once project leaders became more experienced.
7.5 New Perspectives: Exploring the Results of the Open Questions

The discussion on the results of the questionnaire study is divided into two sections. First, implications of the findings of the open questions are deliberated after and then two new perspectives are developed/explored/discussed.

New perspectives from practice are to be expected from the open questions since they gave latitude to generate new views. The four open questions generated different answers from the respondents. For each question clusters were created, each included the specific answers of the question that fit the cluster (sec. 6.4.1).

Some of the clusters of different questions are similar to each other. They are compared in the following section. The unique clusters of each question will be summarised first.

7.5.1 Exclusive Clusters of the Open Questions

In all open Questions the clusters *Group Dynamics, Leadership* and *Goals* were defined as being important, containing concepts from the responses of the leaders. Other clusters were exclusive to the profiles of the questions and are listed and discussed below.

*Unique Clusters for the Question on Inspiration and the Question on Control*

Unique clusters for the open question Inspiration (How do you keep a team inspired ?) are *Freedom, Vision* and *Play/Fun* and can be associated with divergence which is as expected. It is also interesting to note that *Freedom* is the opposite of too *Little Freedom* which is an exclusive factor for Failure. The appearance of both clusters confirms earlier research of creative climate, which found that freedom is one of the important qualities of an innovative environment (Amabile, 1996, sec 5.2.3).

The exclusive clusters for the open question Control (What is minimally necessary for control), *Monitoring* and *Planning*, refer more to maintenance tasks such as time planning, evaluation and fine tuning. This is not fully in agreement with the expected similarity/association with convergence. Convergence is usually characterised as a choosing and decision making process. However, this might be a valuable reminder of the importance of maintenance tasks in innovation which, in the author’s experience, tend to be neglected.

The open questions Inspiration and Control both generated clusters that deal with *Surroundings, Success* and *Structure*. Unique Clusters for the Question on Success and the Question on Failure

The open questions Success or Failure investigated the conditions for success or the conditions for failure from the perspective of the leaders. Unique clusters are cluster *Selection* in the question on Success and *Unfit Team Structure* in the question on Failure.
As well as Little Freedom, the other unique cluster of Failure is Lack of or Wrong Resources. It is worthwhile noticing that this cluster has a low weight/incidence. The leaders did not use the opportunity to ‘hide’ behind this external factor in their analysis of the reasons for team failure.

7.5.2. Comparison of Clusters

Comparison of three Clusters for all Open Questions

One finding that is worthwhile noticing, is that the clusters Goals, Group Dynamics and Leadership could be defined/created for all the open questions. As the content of the statements did not differ very much (see chapter 6.4.2) the author considered them to be compatible for comparison. In the following table and chart the four open questions are compared with each other for the clusters Goals, Group Dynamics and Leadership.

The data (table 7.3) describe all respondents without differentiation between the professions. The differentiation between the professional groups is presented in more detail in Appendix B.3.

Group Dynamics is Most Important in the Answer to All Open Questions

Looking at these results, this comparison shows the high importance of good Group Dynamics as defined in terms of trust and good communication. Leadership, with a facilitating leadership style, is stated to be an important determinant for inspiration and control while the clusters Clear Goals or Unclear Goals, in terms of clear direction or lack of clear direction are seen as an important determinant for team success or team failure.

The cluster Goals is seen as a more important determinant for success or failure than for inspiration and control. The cluster Group Dynamics is seen as important to very important in all answers and has the highest score in the open question Inspiration. Leadership is mentioned more often in the descriptions on Inspiration and Control than in the descriptions on the conditions for Success or Failure.

<table>
<thead>
<tr>
<th></th>
<th>Conditions for Inspiration</th>
<th>Conditions for Control</th>
<th>Conditions for Success</th>
<th>Conditions for Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group Dynamics</td>
<td>49%</td>
<td>39%</td>
<td>39%</td>
<td>41%</td>
</tr>
<tr>
<td>Leadership</td>
<td>36%</td>
<td>35%</td>
<td>12%</td>
<td>16%</td>
</tr>
<tr>
<td>Goals</td>
<td>25%</td>
<td>17%</td>
<td>35%</td>
<td>43%</td>
</tr>
</tbody>
</table>

Table 7.3.: Percentage of Respondents that Mentioned this Item
Noticeable, is the central position of the cluster *Group Dynamics* in all four open questions. This may also be indicative that from the perspective of maintenance of the innovative team, *Group Dynamics* and *Leadership* are seen as more important than *Goals*: While from the perspective of the questions Success or Failure, clear goals or the lack of them are seen as more important than Good Leadership or Poor Leadership. Next to good *Group Dynamics*, *Leadership* is seen as an important determinant for keeping a team inspired and staying in control. The *Leadership* mentioned in the statements of this cluster refers to a facilitating style with good communication skills. There seems to be a need for this supportive leadership in order to foster inspiration, creativity and in order to have minimal control in a team. An finally *Clear Goals* are more important when focusing on attaining success in the outside world.

### Comparison of Item Success and Item Failure on Five Clusters

It is interesting that some of the Success or Failure clusters seem to be similar presenting both the positive and negative sides of the same coin. In the following table (7.4) and figure (7.2) the results of the open questions on Success and on Failure are compared in terms of the clusters *Goals*, *Group Dynamics*, *Leadership*, *Surroundings* and *Motivation*. The other clusters of Success or Failure were not compared because of the incompatibility of their content (see Appendix B.3).
Table 7.4: Percentage of Respondents that Mentioned these Clusters

<table>
<thead>
<tr>
<th>Clear Goals</th>
<th>Success</th>
<th>Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good Group Dynamics</td>
<td>39%</td>
<td>41%</td>
</tr>
<tr>
<td>Good Leadership</td>
<td>12%</td>
<td>16%</td>
</tr>
<tr>
<td>Favourable Surroundings</td>
<td>16%</td>
<td>25%</td>
</tr>
<tr>
<td>High Motivation</td>
<td>49%</td>
<td>21%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Unclear Goals</th>
<th>Success</th>
<th>Failure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Group Dynamics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor Leadership</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unfavourable Surroundings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poor Motivation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 7.2: Comparison of Percentages of Responses for Open Questions Success and Failure

Figure 7.2. and table 7.4. describe all respondents without differentiation between professions.

Notable is the different appearance of the cluster Motivation, high or poor, for Success or Failure. As a condition for success almost half (49%) of the respondents gave answers fitting into this cluster, it was placed first within the eight clusters. As reasons for Failure 21% of the respondents gave answers in the cluster Little Motivation, which was placed in fifth place out of eight. Therefore Motivation is seen as a high determinant in achieving success, but little motivation is not seen as a high reason for Failure. This result may be ascribed partly to the artistic leaders, who found motivation a very important reason for success.

Motivation is the Key Difference between the Profile of Success of Failure

Intrinsic Motivation or commitment, high involvement and the capacity to go on when things get tough is one of the most important capabilities an innovative team needs, especially when creativity is needed to achieve success. Freedom for the growth of new
ideas and external input keep a team inspired, while planning and monitoring whether they are still on track are the minimal control conditions to balance the divergence. Selecting the right people for these functions is important before a group is formed and will lead, if applied well, to results and success.

7.5.3. Practical Indications for the Leadership of Innovative Teams

Based on the analysis of the open questions it is possible to give indications more useful for direct application to managers and leaders of teams. The open questions represent the most authentic and direct reaction of the leaders. They are highly applicable representing the state of the art but they do not have a claim on 'truth'. The indications are given in terms of 'do's and don'ts'. Reading these, some caution is needed, as the indications are coming from the perceptions of the interviewed team leaders. Moreover, the perceptions come from a selected professional fields and are not necessarily representative for all leaders of innovative teams. Yet, as a summary of how the interviewed senior leaders of innovative teams think, it is worthwhile to ponder on these points

How to Keep an Innovative Team Inspired

Foster good group dynamics, involvement and feedback. Give freedom to team members, encourage new elements and diversity and give team members opportunities to use external input. Give feedback about results and celebrate success. Develop a vision with the team that incorporates beliefs, perspectives, that allows passion for the task and meaning to become united in shared objectives.

Allow and encourage playing, fun and divergence. Maintain good contact with sponsors and clients. Manage (time) pressure and protect the team from outside pressure. In short, maintain a creative climate.

What is Minimally Needed to Control an Innovative Team

Foster good group dynamics and be a serving and supportive leader. When a crisis occurs, you must be in charge, take authority and manage it. Provide for clear and defined tasks, clear performance standards and select the right expertise for the group. Important are evaluation and review meetings, where it is possible to fine tune planning and time management is made feasible. When necessary for the task you together with the team will design mile stone plans from the budget phase to delivery. You and your team will agree on the direction to take and you will also provide for support from the top. Once success and progress are achieved you will share that with the team. In short, you take care of the maintenance of the group and provide guarantees for output.

Pitfalls to be Aware of

The most mentioned reasons for failure, are unclear goals and poor group dynamics. As far as selection of your group is concerned: Inadequate team composition, inadequate membership changes and no clear task responsibility of the members are also traps to be aware of. Watch out for unfavourable surroundings such as poor project fit with the company and unfavourable politics of people in power. Little motivation and
involvement, inflexible team members and lack of, or the wrong resources, are other reasons to abandon the project. Last but not least, look at your own leadership and assess whether you are setting the right example. Do you have enough maturity to lead this team and give the needed support and facilitation? If this is the case, but the group still does not accept you as a person or a leader, leave anyway.

Conditions for Success
The most important condition for success is motivation: that means a high commitment of the team members, belief, urgency and involvement in the task combined with this magic quality of a ‘positive outlook under stress’. Good group dynamics are a second important condition. Have clear goals, clear definitions of results and a shared vision on a meaningful task. Your discretion in selecting candidates is important, team composition needs to fit the task. Information, material resources and your insight about the project needs to be clear. There should be support from the top and favourable politics for your project, or in any case an organisational culture that will tolerate the actions needed to complete the project. In your leadership you need creativity and facilitation skills. Share all achieved results with the team and celebrate success, which will lead to new successes.

Bridge to the next chapter

In the next chapter conclusions are given with an epilogue of recommendations for further research and reflective observations.
8 Conclusions

8.1 The Paradox of the Innovative Team Process
8.2 Conditions for Innovative Teams on the Relational-Process Level
8.2.1 Keys to a Creative Climate in Innovative Teams
8.2.2 A Lead to Success in Innovative Teams
8.3 Leadership of Successful Innovative Teams
8.3.1 Shared Views on the Social Process of Innovative Teams
8.3.2 The Style of the Leader
8.3.3 Pivoting Modes of Leadership
8.4 Reflective Epilogue
8.4.1 Recommendations for Further Research
8.4.2 Recommendations for Practical Application and Training
8.4.3 Reflection

The conclusions highlight and balance the findings on their value and usefulness for further discourse and for their possible application in practice. This will contribute to the unfolding and continuing ‘story line’ of the leadership and team development of innovative teams. Recommendations for further research are formulated. The thesis ends with an epilogue and reflection on the work of a more philosophical nature.
In the previous Chapter Discussion the findings of the literature survey and the questionnaire study were looked at systematically for new perspectives and results concerning the explorations. In the conclusions we return to the research questions as stated in the introduction and will answer them in a more integral way. The research questions were: ‘What are the conditions a successful innovative team requires on the relational process level?’ and ‘What kind of leadership is needed in a successful innovative team?’. In this chapter the findings and interpretations of the theoretical surveys and the questionnaire study are presented in relation to these research questions.

8.1 The Paradox of the Innovative Team Process

In their book, *Integral Product Development*, Buijs and Valkenburg call an innovator a ‘controlled schizophrenic’ because of the two-sided activities of the innovation process (Buijs & Valkenburg, 1996). The innovator analyses and synthesises, diverges and converges, breaks through and builds up, is rational and emotional. This characteristic of innovation introduces what we will call the ‘paradox of the innovative team process’. On the one hand this means that the team needs time to create and to destroy, needs freedom to take risks, and freedom to break with procedures and rules without being punished. On the other hand, this equivocally means that the team works efficiently towards a goal within the constraints established by organisational resources and culture. These paradoxical elements have to be somehow ‘managed’ by the leader. On the one hand, the group dynamic process of the team has to be guided with inspiration, patience and tolerance from the leader (and from the surroundings) so that creativity can thrive. On the other hand, the process has to be controlled and managed so that output is reached within the given constraints of time, money and other considerations.

Interestingly in the literature survey we observed a similar discrepancy between the group dynamic theories of small groups and the growing literature on teams (sec. 4.5, fig. 4.2).

The paradigm of the small group literature of social psychology is more focused on ‘knowing why’. It is knowledge and understanding oriented, it is explorative and without a clear outcome. It is written for the person interested in explaining and understanding the group process. The theories are more focused on development than on output and they leave space for the non-linear role/function/branch of the development of persons and groups. We call this a tendency to ‘diverge’ because of this emphasis on exploration with little control.

The paradigm that the team literature follows, is the paradigm of the ‘know-how’: or skills, ‘hands on’ knowledge or experience, quick procedures without much depth. It is written for leaders and teams to keep efficient control, reach maximum output, with limited freedom; The minimum requirements needed to make progress with projects that have time and resource constraints. We call this a tendency to ‘convergence’ because of the focus on success and efficiency through control.

Conclusions
Both stances are relevant. The innovation process and the required leadership must incorporate both. High divergence needs to be allowed if the process is to be really creative and high convergence is needed to obtain efficiency and effectiveness. The leader of an innovative team must manage both processes and the combination if their team is to be successful.

8.2 Conditions for Innovative Teams on the Relational-Process Level

In the following section, the conditions needed for innovative teams to be successful are presented based on the findings of this theses. I propose that these themes, found in literature and in the views of experienced leaders, are relevant characteristics of both the social and creative process of innovative teams.

8.2.1 Keys to a Creative Climate in Innovative Teams

Both the theoretical survey and, to a similar extent, the practitioners perceptions indicate the keys to creative climate. These are discussed and summarised in the following paragraphs.

Relationship Playing and Freedom

The leaders perceptions from the questionnaire support the idea that successful innovative teams do play. In the literature survey the psychoanalyst Winnicott (1971) and developmental psychologists (Piaget, 1951; Vygotsky, 1978) see playing as a source and basis for development and creativity. Creativity researchers (Amabile & Gryskiewicz, 1988; Eckvall, 1990; Van Gundy, 1987) identify freedom and autonomy as a special characteristic of creative climate. Leaders find playing important, even including playing with finances, which is usually thought to be a critical and charged area (sec. 7.3.1). How can this be interpreted? We propose that playing, based on the psychological characteristic of trust, stimulates freedom, challenge and risk taking. That playing and risk taking are in close unison, because playing breaks boundaries, but also creates new structures by reorganising symbols and making room for discoveries and for different/diverse perspectives. By not focusing on financial matters or strict rules, playing allows the inner freedom to follow that which is liked or fancied, and combines it with what comes up by chance. Playing, in a way, is the inner side of what we perceive on the outside as freedom, challenge and risk taking.

For the adult, perhaps the ‘intermediate space’ (sec. 3.3.2; sec. 3.4) lies between the space of relative safety of that which is known and needs to be maintained and the unknown and possibly threatening ‘New’. It is the space where you forget your ego and which helps you to be creative and bridge gaps, a state Csikszentmihalyi calls ‘flow’ (Csikszentmihalyi, 1990a). Jan Buijs refers to this as the Homo Ludens (sec. 7.2.2).
Destructive Thoughts, Challenge and Risk Taking

Most intriguing is the role of socio-cognitive conflict as a generator of new visions and ideas. It is impressive that the practitioners, as well as developmental theories, strongly agree with the idea that destructive thoughts are a necessary part of creating and developing something new. This is underlined by the team leaders, who emphasised the importance and necessity of tolerating destructive thoughts. (sec. 6.5)

This is also supported by the concept of ‘crisis’, as described by the developmental theory of Erikson (1981, sec. 3.3.1). He sees crisis in a medical sense, as a turning point when a transition must take place. This is not something to be avoided, but a necessary transition from one stage to a next. The Social Constructivists (Doise, 1985; Grossen & Perret-Clermont, 1994; sec. 3.2.3) speak about socio-cognitive conflict, the internal tension when thoughts and viewpoints do not fit any more. However, there is one condition that should not be forgotten. Destructive thoughts which induce socio-cognitive conflicts and thereby disagreements between people, need to happen in a psychologically safe environment, where conflict can be tolerated without destroying the team. Any destruction will give tension which has to be countered and eventually resolved in a climate of acceptance and open communication between members. Researchers (Amabile & Gryskiewicz, 1988; Ekvall, 1990; Van Gundy, 1987) describe risk taking and challenge as: ‘fast decision making, use of opportunities, taking action, high emotional involvement in work, a sense of challenge arising from the nature of the problem’ (sec. 5.2). Once the team learns how to deal with this destructive side, it may learn to appreciate the creative challenges coming forth from the destruction of concepts and use it as a tool.

To attain a creative climate, the brainstorming rules from Osborn and followers (sec. 5.3.1) help participants of creative sessions to establish and maintain a creative climate. In the questionnaire the leaders chose different styles/behaviours to stimulate the team to generate ideas and ‘hitch-hike’ on each others ideas. But contrary to theory, the leaders stated that they not only neutralise dominant ideas, but that they also give content input when the team is not able to give any. Based on the findings, I propose that the task orientation of the leader in difficult times is more effective than a pure process orientation.

A last word about creative climate should be said about the ‘celebration of success’. The majority of leaders stated that they did that in majority. This comes close to De Bono’s belief (1984) that success breeds success. Celebration should also help to build a buffer and possibly repair the more difficult crises which socio-cognitive conflict and risk taking inevitably brings to a team.

8.2.2 A Lead to Success in Innovative Teams

The question ‘What are the conditions for success in an innovative team’ was answered by the leaders by reflecting on their own experience. These were categorised in nine clusters, (the most important of which are presented in figure 8.1) and related to and contrasted with the leaders answers to the questionnaire statements and the findings of the literature survey.

Conclusions 183
Intrinsic Motivation

When asked for conditions in the start-up phase which lead to success, most answers given by the leaders could be grouped in the cluster Motivation. Concepts like ‘commitment, passion, interest in work, urgency, positive outlook under stress’ belonged in this category which is similar to the ‘intrinsic motivation’ concept described by Amabile (1994). In her view, intrinsic motivation is closely related to creativity, while many forms of extrinsic motivation will restrain creativity (Amabile, 1996). It is noteworthy that part of the high score of Motivation, shown in figure 8.1, is due to the statements of the artistic leaders who mentioned this item significantly more often than the other professions (sec. 7.4.3).

Figure 8.1.: Response Arranged in First Four Clusters on Conditions for Success

Group Dynamics, Time to Build and Maintain a Team

The cluster Group Dynamics which included concepts such as: ‘trust, openness, humour, good atmosphere, informal, good communication and happiness’ is the one mentioned in second place as a condition for success (see fig. 8.1).

In the questionnaire, leaders agree that time is needed for team development in order to ensure the viability of the team. They agree that time often has to be ‘stolen’ from the project time, if there is none available or budgeted for team development. The need for team development is supported by research. Hackman already said that the most powerful and constructive intervention a leader could make, was to help a team make a good start, by among other things ‘building the team and maintain the team’. (Hackman, 1991, pg. 503).

As far as developmental phases of team development are concerned: experienced team leaders, slightly more than less experiences ones, agree with the behavioural sequences
in Tuckman’s phases of group development (Tuckman, 1965; sec. 4.4.1). However, the leaders do not fully follow the behavioural aspects of Tuckman’s model. The difference lies in the task orientation of team leaders, who perceive working on the task and planning to be important in the start-up phase, while the model of Tuckman indicates that this happens more in the performing phase (Scholtes, 1993, pg. 6-8). We observe again that task and planning activities are favoured by the leaders in practice contrary to what theory proposes (sec. 7.2.2).

Trust formation, as well as positive group dynamics, are incorporated/embraced by the practitioners when they describe their own views about how to inspire a team and how to control it, about the conditions for success and the conditions for failure. For the question how to keep a team inspired, group dynamic aspects like ‘sharing, honesty, ethics, involvement, good communication’ were the conditions most often mentioned. This coincides fully with the theory of Gibb (1964), who states that any group development, goal oriented behaviour and control are dependent on this first dimension of acceptance and spring from that open communication. We conclude that basic trust, acceptance and good communication are necessary to utilise/encourage the full potential of a team and to be successful.

Clear Goals

The third important condition for success was described by the leaders as clear Goals (figure 8.1) with words such as: ‘Clear targets, clear definition of project results, shared vision, meaningful task challenge’. The failure cluster also points in the same direction stating that the first reason for failure is unclear Goals described by statements like: ‘unclear objectives, no shared vision, unclear direction, wrong expectation’. This is strongly supported by team literature (Katzenbach & Smith, 1993) with its emphasis on performance and shared objective and also emphasised by recent literature on work groups and teams (Hackman, 1991; sec 4.3.1)

Selection, Commitment and Creative Expertise

In their observations about the conditions needed for success, the practitioining leaders put the cluster ‘selection’ in the fourth place. It is described with words like ‘right person in the right place, expertise, good team composition and discretion to select the team yourself’. The importance of the discretion of the leader to chose his/her own team members was emphasised also in the personal interviews.

For this cluster a significant finding was that 93% of the leaders consider commitment to the project to be a very important condition and that 83% of the leaders select the candidate based on his/her creative expertise. Half of the leaders also looked at the personality of the candidate. This concurs with the team literature which emphasises selection based on commitment and skills (sec. 4.4.1).

In the author’s opinion, involving the personality of the candidate should have a much lower priority than selecting the candidate based on their expertise, skills and attitude. Behavioural and personality factors are highly flexible in a team situation and the team

Conclusions
can be trained in the start-up phase with the help of a good coach and using one of the many inventories that are available (sec. 4.4.1).

8.3 Leadership of Successful Innovative Teams

In the following section, findings about the leadership needed by a successful, innovative team are presented. We do not pretend to be exhaustive, however we assert/propose that the themes below are relevant characteristics for the leadership of innovative teams.

8.3.1 Shared Views on the Social Process of Innovative Teams

The questionnaire is a perception study which gathered the view of senior leaders of teams about the state of the art based on their experience. One of the explorations was that the leaders’ different professions (see chapter 1 and 6) would influence and colour their perceptions about which conditions were good for the social process in an innovative team (sec. 4.3.1). This was not the case. What we found were a shared common sense about the major topics of group development, playing and trust giving, with little variation in their views on leadership and creative climate. This is supported by the findings in/results of the open questions, particularly the importance of ‘supportive’ leadership (sec. 7.3).

It is astonishing that the differing professional fields of the senior leaders have so little effect on their answers in the questionnaire. The 17% variation in the answers that was found could be attributed mainly to their differing functional task (sec. 7.3.2) and not so much to their statements on group process and on leadership.

Even more surprising, is the similarity between Project Managers and Artistic Leaders which do differ on the dimensions of creative freedom, but do not differ much about other leadership variables. The largest differences were found between the Facilitators and the Project Managers, which should be given some consideration, as the Facilitators often advise the Project Managers. Between them, the main differences are found in creative freedom, in leadership style and in task perception. This might be an advantage, as the Facilitator can bring different and useful perceptions to the world of the Project Manager. This could cause communication problems since they might have a different world view or professional language as well. The questionnaire study implies that these differences can be overcome. The necessity for good translations and communication is, in our opinion, the professional challenge for the Facilitator.

The reasons for the leaders’ shared view are sought in the nature of the innovation process which overrides all other differences. We support the proposition that group dynamic aspects are a universal dimension which is important for every team. Secondly, we propose that, once elicited, enormous tacit knowledge can be found in the experience of practitioners, which in this case, was demonstrated by the fact that much knowledge about group dynamics has become part of the thinking of innovative team leaders. (see also sect. 7.3.1)
8.3.2. The Style of the Leader

"What kind of leadership do innovative teams need?" Theory indicates that with the rising complexity of projects and expertise, a team needs leaders who are participative and visionary (see chapter 4 and 5). Participative leadership establishes and supports all of the conditions described above in sec. 8.2 at the relational-process level.

The practitioners agree with the above but have some significant comments! As well as process overview, the leader of an innovative team needs content overview. The other side of support is establishing a minimum amount of control which, according to the leaders, means: 'setting goals, monitoring, planning, taking care of success/making success happen'. In short, using the minimal control that is needed to lead the team and make it successful.

Who takes care of the environment, the team or the leader?

In the research of Ancona and Caldwell (1992) the communication activities of teams toward their environment were studied. In the study, the role of the leader and the role of the team members were not specified/separated.

Using some buildings blocks from the above study in the questionnaire for this thesis, activities which influence the team's environment were identified which were, according to the leaders, solely performed by the leader or were executed/performed by either the team members or the leader. The results suggest that both team members and leader handle and influence the environment by performing activities such as giving or withholding information from the outside organisation or environment. However, the leaders perceived it to be their own responsibility to 'report progress to the next organisational level' and to 'absorb pressure from the organisation or outside environment' which could effect the team. They also thought that the leader was an ambassadorial bridge to the outside world, but not so much an informational bridge.

We suggest that the ambassadorial tasks, giving access to the power routes in the organisation, are held by the leader as long as possible, even when he/she is delegating many other activities that deal with the environment to team members.

An Appeal for Task and Process Orientated Leadership

If theorists agree on anything about leadership style, it is that it is contingent, dependent on the situation, as Yukl states (Yukl, 1998; sec 4.3.1) and Hackman supports in his research (Hackman, 1991). This is sustained by the views of the leaders.

The practitioners were asked four open questions:

1. How do you keep a team inspired?
2. What is minimally necessary to lead an innovative team from the viewpoint of Control?
3. Conditions and reasons for Success?
4. Conditions and reasons for Failure?
In the answers of all the open questions, *Group Dynamics* was found to be in first or second place. In all questions the clusters *Goals* and *Leadership* were identified but on different places (sec. 7.4.1). In the figures 8.4. and 8.5. these differences are illustrated.

![Supportive Leadership Diagram](image)

*Figure 8.2: Percentage of Cluster Supportive Leadership as Contribution to Inspiration, Control and as Conditions for Success or Reasons for Failure*

As a condition for Success or Failure, the cluster supportive *Leadership* is not mentioned as often as a condition for Inspiration or Control (sec. 7.4.1; sec. 6.4.1). The leaders also give different priorities when talking about Inspiration and Control in contrast to Success or Failure. They emphasise the importance of supportive leadership when inspiring and controlling the team, but they find it far less important when describing conditions for success or failure. This suggests that supportive leadership is needed more in the maintenance function of a team, than in the output and performance function.

Clear Goals are not emphasised as a condition for Inspiration or Control, but they are found very important in achieving success. Vice versa having unclear Goals is seen as a reason for failure (sect. 7.4.1; sect. 6.4.1; appendix B.3). This suggests that a sense of vision and direction is more important for achieving successful output than for keeping the team inspired or in control.

These findings, together with the result that good group dynamics are perceived to be necessary in both the maintenance and output functions has led us to the following idea.
8.3.3 Pivoting Modes of Leadership

As introduced and described in section 8.1 leaders of innovative teams have to manage a two-sided process inherently linked to innovation. The leadership mode that encourages divergence, fosters exploration and originality which leads to new ideas in this two-sided process. The leadership mode that encourages convergence, directs the process leading to the outcome and performance within the given constraints. The open questions 'how to keep a team inspired' and 'what is minimally necessary for control' are close to these two modes.

We will call these two states of leading an innovative process, the generative and the focusing modes of leadership. They are described in figure 8.4 in short hand terms, which came from the content analysis of the open questions enriched by theoretical input. There is also a close parallel with the analysis of the metaphors and 'logics' of the small group and team literature which were made in the group dynamic chapter (sec. 4.3.4).

**Generative Mode of Leadership in the Innovative Process**

In the generative mode, good group dynamics in terms of openness and good communication are needed. The group has evolved to the performance phase (Tuckman, sec. 4.4.1). Vision will be developed jointly or according to the given search field. It will be influenced by the values and passions of the team members and the leader. The leader encourages playing and challenging metaphors or uses creativity techniques to stimulate the group to generate new perspectives. In this
developmentally oriented mode, the leader is satisfied when the group has created new and original ideas. The pace is adjusted to the creative process of the group, which means that the outcome is not precisely defined yet. Challenge and risk taking belong to this path as well as the exploration of conflicts within the group. The work style seems chaotic including a lot of freedom for the team and a high commitment by the individual members. The leader creates conditions to maintain intrinsic motivation, giving the team members autonomy and challenging them to develop and use their expertise. The leader also absorbs pressure from the environment, so that the group can work freely.

<table>
<thead>
<tr>
<th>generative mode of leadership</th>
<th>focusing mode of leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>vision development</td>
<td>goal management</td>
</tr>
<tr>
<td>play/fun metaphors</td>
<td>fight/power metaphors</td>
</tr>
<tr>
<td>development oriented</td>
<td>business oriented</td>
</tr>
<tr>
<td>have we created new ideas ?</td>
<td>have we solved the problem ?</td>
</tr>
<tr>
<td>pace given by creative process</td>
<td>pace given by planning and monitoring</td>
</tr>
<tr>
<td>A--&gt;B: challenge and risk taking</td>
<td>A--&gt;B: defining action</td>
</tr>
<tr>
<td>exploration of conflicts</td>
<td>crisis and conflict management</td>
</tr>
<tr>
<td>finding freedom, chaotic</td>
<td>acting within constraints, ordered</td>
</tr>
<tr>
<td>emphasis on intrinsic motivation</td>
<td>emphasis on extrinsic motivation:</td>
</tr>
<tr>
<td>autonomy and challenging conditions</td>
<td>material and immaterial rewards</td>
</tr>
</tbody>
</table>

Figure 8.4: generative and focusing modes of leadership of an innovative team

**Focusing Mode of Leadership in the Innovative Process**

In the focusing mode, good group dynamics, in terms of honesty and clear communication, are needed. The group is in the performance phase of it’s development. The goal in this mode is clear and established and the pace is determined by plans, which are monitored and adjusted if necessary. The leader is satisfied when the team has solved the problem. In this mode, the focus is business oriented and directed towards performance and is sometimes supported by fight and power metaphors (we have to ‘fight’ the competition, ‘penetrate’ this market). The leader and the team work efficiently within the given constraints of budgets and resources. When crisis or conflict occurs, the leader acts using his/her authority and manages them adequately. Reports to the next higher authority are given by the leader, who is the ambassador to the outside world. He/she presses the team members to reach to targets and boosts their motivation with material and immaterial rewards.

The Focusing and Generative mode are necessary to handle the innovative process. As described in the paradox of leading an innovative team (sec. 8.1), the leader has to alternate between the different options, which only together lead an innovative team to
success. An example is given below, to illustrate the challenges an experienced practitioner faces, when working with a multi-x workshop with an innovative task:

“The workshop is built up of a number of different activities all with their particular work style, respectively expertise, fantasy through design and planning, back to expertise. In practice the switch between one style of activity and the next can be hard to achieve. For example when switching from expertise to fantasy, suddenly there are no limits, everything is possible, we go exactly against an expert’s work style.”

(Tassoul, 1998, pg. 41)

Assuming that the leader is familiar with and clear about directing the innovative process, knowing when to switch from the generative to the focusing mode, how does he/she do this?

As in Yin and Yang, the solution might be found in a ‘figure background’ picture. The leader has both movements in his mind at the same time, but at different levels. Having the whole of the gestalt in his/her mind, the leader can help the team members to concentrate on one of these, relating the permanently changing process of the even changing constellation from chaos to harmony and back again.

\[\text{Figure 8.5: Yin Yang, Chinese Symbol of Balance and Opposing Forces}\]

“Yin and Yang are originally coming from dividing of the original cell of primeval chaos, Ch'i. (...) Yin and Yang are at the base of a doctrine of dualism, in which alternating and opposing forces brought about the creation of the universe, Yin forming the earth and Yang the sky, and shaped the fundamental nature of all living things.”

(Shapiro, Hendricks, 1984, pg. 213)

Concluding, I propose that the switch between the pivotal modes is helped by good group dynamics and works best in the performance phase of a team’s development. Good group dynamics allow the team members to bear the tension when switching from the generative to focusing modes and vice versa. They are instrumental in resolving of the paradox of leading an innovative team. Acceptance by the team allows the leader to make dramatic shifts to change the team’s process mode and, with the team, make the transitions that an innovative process requires.
The Person of the Leader

If the leader can’t play the team can’t play. So the leader needs to be flexible on him/herself as well, otherwise he cannot lead the team in this process dimension. Therefore, the leader is urged to develop both knowledge and skills for (project) management, as well as an understanding of and skills in social dynamics and creativity.

However, it should be remembered that the person of the leader will always have his/her own profile. An example might be a task-oriented person who is also very creative, what Kirton (1989, sec 4.4.1) would class as a ‘high innovator’ combined with high efficiency. This profile is often found often in scientific settings. This kind of leader would need training on the social and managerial side. Another example, a very social person and a good planner would need help with the creative and ‘letting go’ side, to learn to allow for more generativity and to be less relationship orientated at times. Thus the leader must understand his/her own personal style first, understand his/her creative capacities and stretch these toward the full circle of the process. As it is not possible to have all these capacities in one person, leaders should be aware of their weak side and delegate where possible to find the right balance between leadership modes.

8.4 Reflective Epilogue

8.4.1 Recommendations for Further Research

In the next paragraphs issues for further research on different subjects are recommended.

On group dynamics and creativity for innovative teams

Can the challenges leaders face in innovative teams be charted and possibly solved with the group dynamic theories of the 1960’s and 1970’s or is a new theory of team dynamics needed? From a theoretical viewpoint, there are no reasons why leaders cannot use those early theories, but the language of group dynamic research seems to have made abstract and not interesting/available to boundary disciplines. Although every discipline needs her abbreviated ‘jargon’, the basic vocabulary could be cleared out and given a more general language to facilitate communication about the diverse phenomena.

We suggest that a better integration of group dynamics with creativity techniques for innovative teams is needed. This can be achieved if more combinations are made between psychological developmental fields, group dynamics fields and creativity domains to span the gaps that currently separate them.

On Playing in Reflective Design Practice

The current research of Valkenburg and Dorst (1998) at the Delft University of Technology about reflective practice in design, deals with behaviour patterns of teams
analysed with a new tool. This thesis aligns itself with the present research and finds that, in the notions on ‘playing’ and ‘destruction’, possible points for switching between process modes could be found.

**On the Role of Socio-Cognitive Conflict in (Creative) Thinking**

In general group dynamics, theorists see conflict within a task group (when dealt with effectively) as a ‘valuable resource rather than a problem that must be eliminated’ (Forsyth, 1990, pg. 385). We would like to suggest that this line of thought should be continued and that it would be useful to differentiate between socio-cognitive conflict, (which stems from differing viewpoints), and socio-emotional conflict (which has to do more with personal anxieties or affinities between persons). There is a relationship between the two (the latter may stem from the former when this is not dealt with), but it is not axiomatic that they must occur simultaneously (Doise: ‘ce n’est pas la bagare’). As we found a positive and generative role for socio-cognitive conflict, this should be investigated further. If socio-cognitive conflict occurs in a safe environment (sect. 3.2.4; sec. 7.1.1) it might have an important role in generating new ideas and in creative breakthroughs.

This might also have a much wider application in the field of international negotiation (Fisher, Uri & Patton, 1991) and for wider social challenges which are appearing in intercultural understanding and multi-x groups (Buijs, 1994).

**On Trust Building and Electronic Communication**

The research of Jarvenpaa and Leidner (Coutu, 1998) indicated that trust building in virtual teams (only electronic communication) is a delicate business. Mistakes in the beginning are difficult to make up for. So as well as the controlling formats, electronic communication and Group Decision Support Systems usually give a team, there is a need for playing, trust building and team development which, as seen from the perception of leaders of innovative teams, is a basis for them to be successful. Since the research indicated that trust in a virtual team tends to be established right at the beginning, we suggest that it would be useful to investigate whether the conditions for creative climate will facilitate this special kind of trust building.

**8.4.2 Recommendations for Practical Application**

Practical application based on the findings of this research:

- Leaders should understand that leading an innovative team has paradoxical aspects. The leader must alternate between the generative and the focusing modes of leadership continuously. The leader also needs to have an understanding of when and how to switch modes. Therefore, leaders should train themselves and their teams to be flexible in switching.

- Trust is the basis that holds the group together. So leaders should work more on trust, acceptance and good group dynamics, which become more complicated and more
important as the project gets more complex and the group more diversified. Some people will always be more divergent in their thinking style, others more convergent. The innovative team needs both styles to function and the members should understand this.

- A creative climate involves playing and basic trust between the team members and the leader. ‘If the leader can’t play, the team can’t play.’ This means that the level of freedom to ‘play’ that the leader can allow (himself) is the same that he/she will allow the team. The closer the leader works with the team, the more this is true.

- ‘Know thyself’ as a person and as a leader. With the growth of self-acceptance and self-confidence, the team will be more trusting and able to handle more tension (see also dissertation of Wirtz, 1997).

- When designing an innovative team, select members on criteria of task, interpersonal skills, creative expertise and on their commitment to values and to the goal. Personality and behavioural style are of secondary importance as the team members can improve on their skills and adjust their behaviour during the process.

### 8.4.3 Reflections: Wishes and Inspirations for the Reader

Perhaps like an impressionistic water-colour, explorative research is never finished, it just stops in interesting places. What you take with you from this thesis depends on your experiences and interests. The following reflections are some of my challenges and personal discoveries and are based on wanting to contribute to the research on and to the practice of innovative teams.

“In the early stages of acquiring any really new skill, a person must adopt at least a partly antipleasure attitude: ‘Good, this is a chance to experience awkwardness and to discover new kinds of mistakes!’ It is the same for doing mathematics, climbing freezing mountain peaks, or playing pipe organs with one foot. Some parts of the mind find it horrible, while other parts enjoy forcing those first parts to work for them. We seem to have no names for processes like these, though they must be among our most important ways to grow.”

(Marvin Minsky, The Society of Mind, 1985)

The challenges in the thesis meant a need for perseverance and to find new solutions to various setbacks. The ‘Aha’ moments were discoveries which came from within or from discourse with others and were helpful to gain insight. As theory predicts, they were not planned, sometimes surprising, sometimes painful, but always enriching.

One of the most challenging discoveries came about when the fifth exploration about the expected differences between the professions was unsupported by the findings (sec. 6.5). I couldn’t believe it. Instead of finding interesting differences between the five professions (which were selected with difficulty), there were only minimal differences. This was rather devastating and it took some time to recover, understand and formulate new insights. It proved to be a case of playing and creating new meaning.

Another discovery was that the team literature had fundamentally different objectives and priorities than the group dynamic literature. This was expected, but also was
astonishing to me how little of the social science research had found its way into the team literature.

About the same time, I was deeply impressed by Bruno Ernst’s analysis of Escher’s work which led to the idea of the cover illustration. As related in the preface the lithography “Boven en Onder” represents for me the difficulty of dealing with different realities. this materialised in many instances that I encountered while working with two different universities. One example was the incongruity between the statistical conventions of the Delft University of Technology and the Catholic University of Brabant which I had to deal with during the process of analysing the questionnaire data. It illustrated that different realities can lead to different points of view and different actions. After resolving this by making a choice, we had to repeat the statistical analysis of the nominal data.

A last delightful ‘Aha’ was ‘discovering’ the two modes of leadership needed to handle the innovative process. This happened at the end of writing the discussion and far into thoughts about the conclusion chapter. The observations had been there all the time, just before my eyes, but I only started to understand them after considerable time of incubation. When I looked at the large amount of data and then in a huge effort to focus and converge these, I comprehended them again but now from a new angle.

Between the lines of this thesis, the song ‘Get a little help from your friends’ could be sung many times. ‘Thesis writing individuals’ are no less an island than any other person and although it takes too much space to thank everyone who helped and encouraged me, but the support of Antoine, Betty, Carla, Caroline, Dirk, Erik, Fer, Hannie, Ivo, Jan, Jörg, Kees, Louw, Luc, Peter, Philo, Phyllis, Rianne, Robert, Rudy and Ruth meant a great deal. Thank you!

The feeling of connection with my family, friends and colleagues has made it and makes it worthwhile to join them, as Tagore puts it, in the spaces where ‘children play on the sea-shores of endless worlds’.

Conclusions
Summary

Playing, Leadership and Team Development in Innovative Teams

A Reflection on Theory Confronted with the Perspective of Experienced Leaders

Introduction

In this summary, the important findings and conclusions of this thesis are presented. As a practitioner and researcher I am interested in the connection between theory and practice and I often find that a difficult transition exists between the two (see preface). This thesis confronts theoretical reflections with the practical perspectives of experienced leaders. The research is positioned in the domain of group processes and leadership on the relations-process level, which refers to the atmosphere in the team, leadership issues and the psychodynamic development of the group. The summary ends with conclusions and applicational advice for leaders of teams with an innovative task.

Problem Statement and Synopsis Research Approach

The main research questions pertain to an analysis in three theoretical domains contrasted with the perceptions of innovative team leaders. Using this discursive approach, the main questions of the thesis are presented as follows: ‘What are the conditions a successful innovative team requires on the relational-process level and what is the kind of leadership that is needed in a successful innovative team?’ The contribution of this thesis to academic discourse is a conceptual renewal through reflection comparing different theoretical domains in dialogue with representatives from practice.

It is written within an interpretative frame. This means that a substantial part of the research derives from the examination of theory and conclusions drawn. The comparison with the practical experience of senior team leaders using a questionnaire study is the second part of the research. The result of both, the literature surveys and the questionnaire study, are treated as separate outcomes and are discussed in the conclusion.

Findings from the Literature Analysis

The presentation of the literature analysis begins with the controversy between small group theory and team literature (chapter 4).

Further findings of the literature survey pertain to concepts distilled and reviewed in the three domains of developmental psychology and psychodynamic models (chapter three), group dynamics of small groups and teams (chapter four) and creativity theory (chapter five). The concepts which were selected for this summary were chosen on the basis of novelty and applicational value.
The Group Dynamics of Small Groups and Teams

In the chapter about group dynamics, a tour d’horizon is taken along the development of theories on the group dynamics of small groups and teams.

Although in most social science research the definition of small groups and teams is seen as identical, for this thesis, the literature of small groups and teams is considered separately in order to investigate possible differences between them. In innovation and management literature, much attention is given to working with teams. In this area, emphasis is put on problems relating to technology, procedures, goals and high performance with little emphasis on the social dynamics of the team. The knowledge developed by the social sciences in the 1960’s and 1970’s on the dynamics of small groups is rarely used if not at all. The question arises whether the findings and theories gained in the research of the 1970’s are valid for the small groups currently called teams? Although in the literature of the social sciences they are generally seen to be the same this analysis of small group and team literature shows substantial differences.

<table>
<thead>
<tr>
<th>Small Group Research Philosophy</th>
<th>Self-Directing Team Philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychological Theories</td>
<td>Performance and Output Orientation</td>
</tr>
<tr>
<td>Organisational Development</td>
<td>Management Application</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>Values and Metaphors</td>
<td>Values and Metaphors</td>
</tr>
<tr>
<td>+ grows metaphors, person culture</td>
<td>+ fight/power metaphors, task culture</td>
</tr>
<tr>
<td>+ developmental, humanistic models</td>
<td>+ rationalistic models, survival of the fittest</td>
</tr>
<tr>
<td>+ development oriented</td>
<td>+ business oriented</td>
</tr>
<tr>
<td>Objective; Process Targets</td>
<td>Objective; Goal Targets</td>
</tr>
<tr>
<td>+ have we achieved understanding</td>
<td>+ have we solved the problem</td>
</tr>
<tr>
<td>+ process understanding - consultation</td>
<td>+ best solution - expert stance</td>
</tr>
<tr>
<td>+ personal development, risk</td>
<td>+ goal development, risk</td>
</tr>
<tr>
<td>Group process / person oriented</td>
<td>Task process / performance oriented</td>
</tr>
<tr>
<td>+ simple structured task</td>
<td>+ structured and complex task</td>
</tr>
<tr>
<td>+ task manipulated dependent variable to study group process</td>
<td>+ group process manipulated in order to help task</td>
</tr>
<tr>
<td>+ reflection on group process</td>
<td>+ conflict management</td>
</tr>
<tr>
<td>+ pace depends on group</td>
<td>+ high speed</td>
</tr>
<tr>
<td>+ problem creation</td>
<td>+ problem solving</td>
</tr>
<tr>
<td>+ low material reward</td>
<td>+ high material reward</td>
</tr>
<tr>
<td>Concepts about learning</td>
<td>Concepts about learning</td>
</tr>
<tr>
<td>+ individual 'learns' and reflects in group</td>
<td>+ team has to be creative</td>
</tr>
<tr>
<td>+ learning in and between groups</td>
<td>+ learning organisation</td>
</tr>
</tbody>
</table>

Figure 1: Small group dynamics versus team literature
The differences show fundamental contrasts in their basic approach. As can be seen in figure 1 the developmental point of view of the ‘small group’ literature contrasts markedly with the team literature which focusses more on business output. It seems that the product and procedure oriented practitioners do not speak the language of the social process and that the process and development oriented researchers do not speak the language of performance and output.

One proposed explanation is that one domain developed a language that the other domain did not (or would not) speak. The metaphors and ‘logics’ consolidating this mindset prevented them from finding common ground. This difference in perspective and language, is in my opinion one of the reasons why the two philosophies make little use of each other’s knowledge. They literally have little to say to each other, which is a pity as is demonstrated in the conclusions of this thesis.

Playing and Creativity

In developmental theories of psychology, playing is seen as an important activity in the development of creativity and in the maturation process of children. Piaget defines it as a function of assimilation, Vygotsky goes further and relates it to creativity and for Winnicott it is an absolutely necessary condition for development. To repeat Vygotsky’s words: ‘Playing creates a zone of proximal development and is a major source of development itself’.

The applicational value of introducing ‘playing’ into the world of innovative teams seems rather pragmatic and obvious. It legitimises the things teams already do anyway. As such, it is a domain that should be explored further by those interested in innovative team behaviour and the success of teams. In terms of analogy, playing is important for the development and creativity of teams. The team might develop into a more creative, mature unit using play to step out of standard patterns. To end with a quote from Buijs ‘Homo innovans is more homo ludens than homo economicus’ (1984, Stelling 1).

Metaphors of ‘Intermediate Space’

One of the most intriguing topics as well as one of the most elusive, is the metaphor of ‘intermediate space’. The term, ‘the intermediate area of experience’, was coined by the psychoanalyst Winnicott in his article on transitional phenomena (1971) and is the source of most of the metaphors of intermediate space. To Winnicott, the ‘intermediate area of experience’ means a mental space of the very small child who begins to become conscious about the world around it, but is not yet capable of handling such a dangerous environment. The infant creates a mental play area where transitional objects, like a teddybear, ‘live’ and are used as a bridge between itself and the outside world. According to Winnicott, the ‘intermediate area of experience’ is needed for the development of creativity, and in adult life becomes the ‘place’ where cultural experience occurs.

We are not used to speaking of ‘intermediate space’ in terms of innovative teams. The
applicational value of this elusive metaphor is not self-evident. But if looked at in terms of today’s virtual worlds, the idea of a virtual space in one’s mind reserved for playing and creativity is perhaps less far fetched. The growth of virtual worlds might cause us to explore and protect our inner psychological space, especially the ones where existential values, appreciation for the arts and religion are located. For teams, the concrete connection between the intermediate space with autonomy of the team members, physical room and resources come close to the conditions needed for this ‘intermediate area of experience’ and I believe they are of applicational value.

Leadership of Teams and Creative Climate

In most definitions of leadership, it is assumed ‘that leadership involves a social influence process whereby intentional influence is exerted by one person over other people in an attempt to structure the activities and relationships.’ (Yukl, 1998). In general, research on the leadership of groups involved in creative and innovative tasks suggests a preference for a participatory and supportive leadership style for complex teams.

Creative climate is a metaphor for the social components of the environment, the social ‘atmosphere’. The assumption is that some ‘social climates’ are better for the successful generation of creativity and innovation. Main differences found between group climate and creative climate theories are freedom, challenge and risk taking.

The conditions, or what is often called the rules for creative sessions encourage speaking freely within the group. We observe that the rule, postponement of judgement, enhances acceptance of self and others which allows trust to develop. If the leader conducts a creative session using the rules developed by Osborn, the attitude enhanced by these rules sees to it that in a well conducted creativity session, a smooth and well functioning group process is achieved.

Leadership as described in creative climate theories confirms the supportive leadership stance. Theorists find that a supporting style of leadership is a pre-condition for successfully leading innovative teams. Understanding how to achieve a creative climate in co-operation with group dynamic skills is obligatory for facilitators and leaders of innovative teams.

Stages of Individual Development and Stages of Group and Team Development

One characteristic that the stage models of psychological development have in common is the following: with successful development of the person or the group, more complexity (cognitive and emotional) and more difficult tasks can be handled. Another shared characteristic is that if a developmental stage does not take place, the benefits of that stage are lost. The stage must then be ‘repeated’, otherwise a missing link remains.

Of key importance, is that both the developmental and the group dynamic fields advocate that timing and sequencing are crucial to the successful development of an individual or a group. Every individual, as well as every group, must grapple with
issues concerning trust, authority, norms, goals and decision making. For teams, the more the leader and the team are able to handle these issues, the better their performance will be.

**Creative Climate in the Context of Organisation**

It is a cybernetic legacy to describe systems like groups within a larger context, rather than separately. In group dynamics, the system theorists consider groups as part of larger systems. They work with them in the context of the whole organisation. Project teams must manage their actions concerning their relationship with their organisation. The interaction with this larger system determines the viability of the team and its output.

In the creativity domain it is currently emphasised that context is important to be aware of in a creative process. The system model of Csikszentmihalyi states that the world around us shapes our perceptions and that we must take this into account. ‘A group needs to have values, skills and qualities in order to call a made product creative and ‘persuade’ the outside world so that this will be perceived as being creative.’ (Csikszentmihalyi, 1990).

The applicational value of context and situational approaches is considered to be high. However, the topics are more complex than might be assumed at first sight. Cybernetics and systems theory are underlying concepts in the models of context and boundaries. One must be aware of misunderstandings between cybernetics and social science. Yet with clear definitions, the findings from small group research and from creative climate research could be credibly and with added value, combined usefully for innovative teams.

**Results from the Questionnaire Study**

The questionnaire was designed based on the concepts from the literature research. Its first frames were derived from the theoretical chapters. The resulting questions and statements were discussed and reviewed in two rounds with representative experts from the different professional domains. The questionnaire was then sent to 106 leaders of whom 75 were willing to partake in the research.

Leaders of different professions were asked, as ‘experts in practice’, to state their viewpoints in order to obtain current insights and experiences, critical appraisals and ideas. The five different professional domains the leaders come from are: Facilitators/Consultants, Innovative Managers, Artistic Leaders, Project Managers and Social Scientists.

These professional fields were chosen to obtain a broad range of innovative management shown in a spectrum from routine to innovative tasks. In this spectrum, the professional leaders work in the non-routine domains. Three professional fields, facilitators, innovative managers and project managers, are directly related to innovation in business. The artistic leaders were chosen as a contrast group but also work within
the defined spectrum and the social scientists were asked both for their professional knowledge about the social domain and as a theoretical contrast group.

In the following section the resulting outcomes of the theoretical explorations tested against the perceptions of the leaders are summarised.

Theme: Playing and Trust
Playing has an important role for successful innovative teams. Basic Trust (in oneself and others) is essential if the team wants to be successful.

Theme: Social Process and Team Development in Innovative Teams
Successful functioning of innovative teams implies that time must be spent on the developmental process of the group.

In the start-up phase, the team members engage in activities like positioning and finding out whether they share the vision, whereas in the performance phase the team members are focused on effectiveness, they identify with the team and help each other. Contrary to theoretical expectation, in the start-up phase, the team is also concerned with task activities.

Theme: Creative Climate and Tolerance
To attain a creative climate, a team needs an atmosphere of tolerance and 'free room' in its environment.

Tolerance for destructive thoughts is an important prerequisite when working with innovative tasks.

Theme: Leadership Style and Role
A leader of a successful, innovative team has a supportive leadership style in order to allow for, and foster, a creative climate.

Leaders and team members have different roles toward the outside world in reporting to hierarchy and sponsors, and in absorption of pressure. Contrary to theoretical expectation both team members and leaders were involved in finding out about support in the organisation.

Differences between Professions and Genders
To investigate the contrast between the groups, the following statement was proposed.: Leaders from different professional fields have differing perceptions of the social dynamics of teams, and therefore, have different opinions about all statements and questions of the questionnaire.
Secondly, it was proposed that leaders of different genders have differing perceptions about the social dynamics of teams, and therefore, have different opinions about the statements and questions of the questionnaire.

Surprisingly, very few significant differences were found between the professional domains and between the two sexes. The 75 senior leaders gave evidence of agreement for over 83% without significant differences in their views concerning leadership and group process.

If theorists proclaim that different tasks require different process and handling of the task how can we explain that the questionnaire shows so little differences between the perceptions of the leaders of different professional fields?

**Interpretation on the Shared Perceptions**

Different explanations are proposed as interpretation:

There is tacit knowledge to be found in the actions of practising leaders and senior managers. According to Gergen once theory is written and published it starts to be part of our cultural thinking. Another explanation could be that innovation is the common denominator which could outweigh the differences between the leaders.

It is also possible that group dynamics are a universal characteristic of a team and are more important than domain differences between the professions. The perceptions of leaders are alike, because they all have to deal with the complex process of leading a team through an innovative task. Therefore, they perceive the relational process in the same way even if their professional fields differ.

Lack of differences between genders fits in with other research results on leadership and is less surprising.

**Conclusions**

**Conditions for Successful Innovative Teams on the Relational Process Level**

Both the theoretical survey and, to a similar extent, the practitioners perceptions indicate the keys to fostering a creative climate.

The keys are to emphasise playing, freedom to have destructive thoughts, challenge and risk taking. The leader’s perceptions from the questionnaire study support the idea that successful innovative teams do play. Playing and understanding the importance of playing is a new theoretical insight which should lead to new thoughts regarding the relational-process level of a successful innovative team. With it come implications concerning the development of trust and the intermediate space where play occurs. Playing and risk taking are in close relationship, because playing breaks boundaries, creates new structures by reorganising symbols, making room for discoveries and allowing diverse perspectives. By not focusing on financial matters or strict rules, playing fosters the inner freedom to follow that which is liked or fancied, and combines
it with that which comes up by chance. Playing is, in a way, the inner expression of what we perceive on the outside as freedom, challenge and risk taking.

Leadership of Innovative Teams on the Relational Process Level

To lead an innovative team is a paradoxical challenge for a leader. On the one hand the team needs time to create and to destroy, needs freedom to take risks, and freedom to break with procedures and rules without being punished. On the other hand at the same time a team must work efficiently toward a goal within the constraints established by organisational resources and culture. These paradoxical elements have to be somehow ‘managed’ by the leader.

Interestingly in the literature survey we observed a similar discrepancy between the group dynamic theories of small groups and the growing literature on teams as depicted in figure 1.

The paradigm of the social psychology’s small group literature is more focused on ‘knowing why’, whereas the paradigm that the team literature is ‘knowing-how’: skills, ‘hands on’ knowledge or experience, or quick procedures without much depth. In the following model we can see that the innovation process and the required leadership must incorporate both paradigms. High divergence needs to be allowed to encourage a really creative process while high convergence is needed to obtain efficiency and effectiveness. The leaders of an innovative team must manage both processes and combine them if their teams are to be successful.

I propose two leadership modes to describe this process. The generative mode is the leadership behaviour that encourages divergence, fosters exploration and originality which leads to new ideas. The focusing mode is the leadership behaviour that encourages convergence, directs the process leading to performing the task within the given constraints.

<table>
<thead>
<tr>
<th>generative mode of leadership</th>
<th>focusing mode of leadership</th>
</tr>
</thead>
<tbody>
<tr>
<td>vision development</td>
<td>goal management</td>
</tr>
<tr>
<td>play/fun metaphors</td>
<td>fight/power metaphors</td>
</tr>
<tr>
<td>development oriented</td>
<td>business oriented</td>
</tr>
<tr>
<td>have we created new ideas ?</td>
<td>have we solved the problem ?</td>
</tr>
<tr>
<td>pace given by creative process</td>
<td>pace given by planning and monitoring</td>
</tr>
<tr>
<td>A--&gt;?: challenge and risk taking</td>
<td>A--&gt;B: defining action</td>
</tr>
<tr>
<td>exploration of conflicts</td>
<td>crisis and conflict management</td>
</tr>
<tr>
<td>finding freedom, chaotic</td>
<td>acting within constraints, ordered</td>
</tr>
<tr>
<td>emphasis on intrinsic motivation</td>
<td>emphasis on extrinsic motivation:</td>
</tr>
<tr>
<td>autonomy and challenging conditions</td>
<td>material and immaterial rewards</td>
</tr>
</tbody>
</table>

**good group dynamics are a condition for both modes**

*Figure 8.4: generative and focusing modes of leadership of an innovative team*
Both the focusing and the generative mode are necessary to manage the innovative process. As described in the paradox of leading innovative teams, the leader has to alternate between the different modes, which only together lead an innovative team to success.

In conclusion, I propose that the shifts between these modes are helped by good group dynamics. Good group dynamics allow the team members to bear the tension when switching from the generative to the focusing mode and vice versa. Therefore they are instrumental in resolving the paradox of leading an innovative team, allowing the leader to lead dramatic shifts to change the team’s process mode and make the transitions that an innovative process requires.

Suggestions for practical application based on the findings of this research are given below:

Leaders should understand that leading an innovative team contains paradoxical aspects. The leader must be able to alternate between the generative and the focusing modes of leadership. He or she also needs to have an understanding of when and how to switch modes. Therefore, leaders should develop this flexibility both for themselves and for their teams.

Trust is the basis that supports the group process and activities. Therefore leaders should work on trust, acceptance and good group dynamics, which become more complicated and important as complexity of the project grows and the group becomes more diversified.

A creative climate involves room for playing and basic trust between the team members. The level of freedom to ‘play’ that the leader allows himself or herself is the same that he or she can allow the team. ‘If the leader can’t play, the team can’t play.’
SAMENVATTING

Spelen, Leiderschap en Team Ontwikkeling in Innovatieve Teams

Een theoretische reflectie gecontraSTEerd met het perspectief van ervaren leiders

In dit proefschrift worden theoretische perspectieven met praktische zienswijzen op het gebied van leiderschap van innovatieve teams gecontraSTEerd. Als practitioner en researcher ben ik geïnteresseerd in zowel theorie als praktijk, en in het bijzonder in de vaak lastige koppeling van de een met de ander.

De vraagstelling van dit onderzoek richt zich op het leiderschap op het ‘relationeel proces niveau’, met andere woorden op de sfeer, op leiderschapsvraagstukken en op de psychodynamische ontwikkeling van en in een team met een innovatieve taak. Kernvragen van dit onderzoek zijn ‘Wat zijn de condities voor een succesvol innovatief team op relationeel procesniveau en wat voor soort leiderschap is noodzakelijk in een succesvol innovatief team?’

Een selectie van concepten uit de theorie geeft de input voor de confrontatie met de praktische ervaringen van de senior leiders door middel van een questionnaire studie. Het resultaat van zowel het literatuuronderzoek als van de questionnaire worden in de laatste twee hoofdstukken in één speelveld bij elkaar gebracht en gecontraSTEerd.

Bevindingen uit het Literatuuronderzoek

Het literatuuronderzoek heeft betrekking op drie hoofdonderwerpen, respectievelijk het domein van de ontwikkelingspsychologie en psychodynamische modellen (hoofdstuk drie), de groepsdynamica van ‘small groups’ en teams (hoofdstuk vier) en het domein van het creatieve klimaat (hoofdstuk vijf). Een compilatie van verschillende analyses en bevindingen wordt hieronder kort weergegeven.

De Groepsdynamica van Small Groups en Teams

In het hoofdstuk over groepsdynamica wordt een tour d’horizon gemaakt langs de ontwikkeling van theorieën over de groepsdynamica van ‘small groups’ en teams. De term ‘small groups’ is vanwege de specifieke betekenis in het Engels hier aangehouden.

Hoewel in veel sociaal wetenschappelijk onderzoek de definitie van groepen en teams identiek is, worden beiden in dit proefschrift afzonderlijk behandeld met een specifieke reden. In de innovatie en management literatuur wordt tegenwoordig veel nadruk gelegd op het werken met teams waarin de sociale dynamiek van teams enigszins achterwege blijft ten gunste van technologische en inhoudelijke vraagstukken en het stellen en realiseren van doelen. Van de kennis over de dynamiek van groepen, zoals die in de jaren ’60 en ’70 is ontwikkeld in de sociale wetenschappen wordt minimaal of geen gebruik gemaakt. De vraag ligt voor de hand of de modellen en theorieën uit die tijd bruikbaar zijn voor de huidige teams.
Hoewel de algemene teneur is dat ‘small groups’ en teams hetzelfde zouden zijn, wijst de analyse in dit proefschrift uit, dat er wel degelijk wezenlijke verschillen in het gedachtegoed zijn aan te wijzen. Deze verschillen zijn toe te schrijven aan fundamenteel andere zienswijzen van de aan de ene kant meer op winst en (bedrijfs)resultaat gerichte team literatuur en aan de andere kant de meer op onderzoek en persoonlijke ontwikkeling gerichte ‘small group’ literatuur. Het lijkt erop, dat de produkt en procedure georiënteerde practitioners niet de taal van het proces spreken en dat de proces en ontwikkelings georiënteerde onderzoekers niet de taal van resultaatgerichtheid en economische winst spreken.

Een verklaring hiervoor is dat het ene domein zich uitte in een taal of ‘logica’ die vreemd (of misschien zelfs ongewenst) was voor het andere domein. De beelden en de gedachtegangen die bij hun eigen logica horen weerhouden beide ervan een gezamenlijk speelveld te vinden. Dat de representanten van de beide invalshoeken weinig van elkaar leren en niet met elkaar in gesprek zijn schrijf ik toe aan bovenstaand verschil in perspectief en de daarbij horende verschillen in taalgebruik. Men heeft elkaar letterlijk weinig te vertellen. Ten onrechte, zoals uit de conclusies van dit proefschrift blijkt.

**Spelen en de Intermediaire Ruimte**

De theoretische introductie van ‘spelen’ in de wereld van innovatieve teams is pragmatisch en ligt enigszins voor de hand. Zij legitimeert iets wat een team meestal toch al doet. In de ontwikkelingspsychologie wordt het belang van spelen al lang en duidelijk onderkend en benadrukt. Spelen, risico nemen en ontwikkeling hebben een nauwere relatie dan men zou vermoeden, aangezien spelen grenzen doorbreekt, nieuwe structuren schept door symbolen te reorganiseren, en ruimte neemt voor ontdekkingen en het ontwikkelen van andere perspectieven. Spelen vindt plaats in een intermediaire ruimte, een spelruimte die zowel fysiek kan zijn als een mentale representatie zoals dit concept oorspronkelijke ook gezien werd.

Analoog gezien is spelen belangrijk voor de ontwikkeling en creativiteit van teams. Door zich niet vast te bijten in materiële, financiële zaken of strakke regels, ondersteunt het spelen de innerlijke vrijheid om te volgen wat met graag wil of leuk vindt, vaak gecombineerd met wat het toeval brengt. Spelen is in zeker opzicht de innerlijke uitdrukking van wat wij aan de buitenkant waarnemen als vrijheid, uitdagingen aangaan en risico’s durven nemen.

**Leiderschap en het scheppen van een Creatief Klimaat**

Het creatieve klimaat is een beeld voor de sociale omgeving van het team, oftewel de ‘sociale atmosfeer’ om in dit beeld te blijven. De veronderstelling is dat sommige sociale klimaten beter zijn voor creativiteit en innovatie. Tussen goed groepsklimaat en een goed creatief klimaat zijn, naast vele overeenkomsten de volgende verschillen gevonden.
In een creatief klimaat vindt men extra nadruk op vrijheid, uitdaging en risico durven nemen. De conventies of regels voor een creatieve sessie helpen om aan de voorwaarden van een creatief klimaat te voldoen. Met name de regel _uitstel van oordeel_ versterkt acceptatie van het zelf en van anderen. Wanneer een leider een creatieve sessie faciliteert, dan helpen deze conventies het team om in een creatieve sessie een soepel en goed lopend groepsproces te laten ontstaan.

Ten aanzien van leiderschap zoals onderzocht in creatieve klimaat studies, poneren theoretici dat een ondersteunende stijl van leidinggeven een voorwaarde is voor het succesvol leiden van een innovatief team. Kennis van creativiteit in samenspel met een groepsdynamisch inzicht en sociale vaardigheden is een voorwaarde voor het kunnen faciliteren en leiden van een innovatief team.

_Groepsontwikkeling in Context_

Zowel de ontwikkelingspsychologie als de groepsdynamische theoretici stellen, dat timing en fasering cruciaal zijn bij de succesvolle ontwikkeling van een individu en van een ‘small group’. Elk individu, evenals elke groep, moet zich uiteenzetten met thema’s die met vertrouwen, autoriteit, normen en doelen te maken hebben. Voor alle teams geldt dat wanneer de leider en het team gezamenlijk in staat zijn om goed met deze relationele-proces thema’s om te gaan, zij betere prestaties zullen leveren.

Innovatieve teams leven niet op een eiland, maar in een context of omgeving, waarbinnen zij niet alleen hun taak uitvoeren, maar waarmee zij ook te maken hebben. In de huidige creativiteits theorieën wordt een steeds grotere nadruk gelegd op het belang van de context waarin het creatieve proces plaats vindt. De wereld om ons heen bepaalt voor een groot deel hoe dingen gezien worden. Ergo, een innovatief team moet niet alleen zelf innovatief zijn, het moet ook de vaardigheden en vermogens hebben om de buitenwereld te overtuigen dat het team als innovatief gezien en erkend wordt.

_Resultaten van de Vragenlijststudie_

Leiders uit verschillende professionele gebieden werden gevraagd als praktijkexperts, om op basis van hun ervaring uitspraken te doen over hun perceptie van het leiding geven aan innovatieve teams. De vijf verschillende professionele domeinen, die werden gevraagd om deel te nemen aan het onderzoek waren: facilitators/consultants; innovatie managers, artistieke leiders; technische project managers en sociale wetenschappers. Deze professionele velden werden gekozen om een beeld te verkrijgen van het non-routine domein van leiderschap. De facilitators, innovatie managers en technische project managers zijn rechtstreeks gerelateerd aan innovatie en het bedrijfsleven. De artistieke leiders zijn gekozen als contrast groep maar werken tevens in een non-routine domein, terwijl de sociale wetenschappers gevraagd werden om hun professionele expertise en als theoretische contrast groep.
De vragenlijst werd ontworpen aan de hand van thema’s uit het literatuuronderzoek en gevalideerd middels gesprekken met representanten uit de verschillende professies. De vragenlijst werd na completering toegezonden aan 106 leiders, waarvan uiteindelijk 75 bereid waren aan het onderzoek mee te werken.

Een aantal belangrijke resultaten zijn hieronder kort samengevat.

Spelen en vertrouwen hebben een belangrijke rol in het proces van succesvolle innovatieve teams. De leiders stellen vrijwel unaniem, dat het van vitaal belang is om tijd te besteden aan het sociale proces van het innovatieve team. Innovatieve teams spelen met ideeën, met procedures, met financiële middelen; daarbij heeft het team ‘vrije ruimte’ nodig, zowel in termen van middelen als fysieke ruimte.

Leiders en teamleden hebben wat betreft de communicatie over hun project gelijke rollen naar de buitenwereld toe. Zodra het op rapportering naar de hiërarchie en absorptie van spanning aankomt neemt de leider het voortouw ten opzichte van de omgeving en de organisatie.

De verwachting was dat de verschillende professionele domeinen ook een verschil in perceptie zouden hebben ten opzichte van de sociale dynamiek in hun teams. Een van de belangrijke bevindingen van dit proefschrift is dat dit niet het geval blijkt te zijn. De verschillende professies hadden gedeelde visies over leiderschap en over het sociale proces van succesvolle innovatieve teams in de gehele vragenlijst. In 83 % van de uitspraken werden geen significante verschillen tussen de professionele velden gevonden in tegenstelling tot de theoretische verwachting. Hoe kan dit verklaard worden?

Een verklaring zou kunnen zijn dat door de jaren heen veel weten over sociale proces stilzwijgend gemeengoed geworden is en als ‘tacit knowledge’ een soort maatstaf is geworden. Een andere verklaring zou kunnen zijn dat innovatie als gemeenschappelijk aspect bepalender voor de uitkomst is dan de inhoudelijke verschillen tussen de professies. Daarnaast is groepsdynamica een universeel verschijnsel in teams. Omdat de leiders allen te maken hebben met de complexe taak van het leiden van een team met een innovatieve taak bezien ze het relationeel proces niveau op dezelfde manier, ondanks hun verschillende professionele taken.

Conclusies

De bevindingen uit de theorie gecontraasteerd met de zienswijzen van de leiders zoals verzameld middels de vragenlijst benadrukken de volgende punten als sleutels voor een creatief klimaat:

Het creatief klimaat voor innovatieve teams hangt af van ‘vrijheid’ met een specifieke samenhang met speelruimte in succesvolle innovatieve teams. Dit spelen kan zich uitstrekken van jongleren met gedachtes en uitdagingen tot het spelen met budgetten. Daaraan gerelateerd zijn aspecten als tolerantie voor destructieve gedachtes, het aangaan van uitdagingen en het nemen van risico’s, allemaal binnen een veilig psychologisch klimaat. Dit punt houdt een paradox in, die gevonden wordt in het concept van de intermediaire ruimte. Creativiteit in een groep ontwikkelt zich indien individuen en/of
een groep tijdelijk *uitstel van oordeel* toestaan voor de ontwikkeling van nieuwe gedachten en activiteiten.

Het leiding geven aan een innovatief team houdt een paradoxale uitdaging in voor de leider. Aan de ene kant dient hij/zij een creatief klimaat te handhaven met zoals hierboven reeds beschreven uitdagingen, bewegingsruimte voor gedachten en spel tot aan ruimte om met de financiën te ‘spelen’. Aan de andere kant is de leider het aanspreekpunt voor het behalen van de resultaten en de successen. In dit proefschrift wordt gesteld dat de voorwaarde voor het kunnen uitvoeren van deze beide tegengestelde taken een goede groepsdynamiek in het team is.

Het is interessant om te zien dat in de literatuur een soortgelijke discrepantie optreedt tussen de groepsdynamische literatuur over ‘small groups’ en die over teams. De leider van een innovatief team moet beide processen hanteren en combineren als een team succesvol wil zijn. In dit proefschrift worden twee leiderschapsmodi geponeerd om dit proces te beschrijven. De *generatieve* modus is het leiderschaps gedrag dat exploratie en generatie van het nieuwe ondersteunt en originaliteit beloont en die tot nieuwe ideeën leidt. De *gefocusste* modus is het leiderschaps gedrag dat het proces stuurt naar gerichte en vooropgestelde doelen en resultaten, ‘performing the task’ binnen gegeven beperkingen.

**Suggesties voor leiders van innovatieve teams.**

Leiders dienen inzicht te hebben in de paradoxale aspecten van het leiden van een innovatief team. De leider moet kunnen afwisselen tussen deze generatieve en gefocusste modi. Hij of zij dient tevens inzicht te hebben in wanneer het belangrijk is om van de ene modus in de andere modus te veranderen. Leiders zouden zichzelf en hun team hier ook in moeten trainen om de gevraagde flexibiliteit te ontwikkelen.

Vertrouwen ligt aan de basis van elke groep. Het is belangrijk dat leiders en hun team tijd nemen voor vertrouwensopbouw en acceptatie en erkenning van individuele verschillen. Dit vertrouwen wordt al belangrijker naarmate de complexiteit van een project toeneemt en een groep diverser is.

Een creatief klimaat vereist dat er basisvertrouwen is en dat de teamleden speelruimte hebben. De mate waarin de leider zichzelf toestaat om te spelen is evenredig met de mate waarin hij of zij dit aan het team toe kan staan: “als de leider niet kan spelen, dan is er ook geen speelruimte voor het team.”
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QUESTIONNAIRE

LEADERSHIP

AND

TEAM DEVELOPMENT

IN

INNOVATIVE TEAMS

Research: Drs. Helga Hohn

Professor Dr J.A. Buijs TU DELFT

Professor Dr J. Rijsman KUB

The Netherlands, Delft, April 1994.
INTRODUCTION TO THE QUESTIONNAIRE

This questionnaire is part of a Ph.D. research project on Leadership and Team Development in Innovative Teams. The research is performed at the department of Industrial Design Engineering at the Delft University of Technology.

Objective is to find answers to the following questions:

How do leaders of innovative teams handle a group process and how do they obtain a creative climate? What conditions do innovative teams need in their start-up phase? How do leaders and teams deal with their surrounding organisation?

Answers are obtained by looking at the insights of various disciplines with the objective to find a common ground as much as to mark contrasting views on these subjects.

In order to do this I have searched for a group of senior facilitators, scientists, managers and artists. You were found to be one of them. Through this questionnaire on Leadership and Teamdevelopment in Innovative Teams I would like you to share some of your experience and insights.

The questionnaire consists of statements and open questions. These focus mainly on your experience with:
- small groups (6-12 people)
- groups that have a defined beginning and ending in time
- groups that have an innovative task

What should you do?

1. Firstly I would like you to complete this questionnaire. This will take about three quarters of an hour. Do go through it fairly quickly. If you have questions about some items just mark them and we will discuss these during a later phone call. If you run out of space, please use the left side page.

2. Secondly we will have a telephonic interview during which we will be running through the questionnaire.

   Please return the completed questionnaire by mail after the phonecall. The completed questionnaire is important because of your comments and personal text on the descriptive items and also as a check up on the data we received from you by phone. Enclosed you will find an envelope with a return adress.

Confidentiality

The questionnaire is confidential and the research report will be anonymous. This means that once your personal data are coded, the original data-sheet will be destroyed.

Outcome

If you are interested in the outcome of the interview, please let me know and I will send you a copy of the report. The first presentation on the findings is planned for August 1994 at the 'International Conference On Creativity and Innovation' in Quebec, Canada.

With many thanks,

Drs. Helga Hohn
QUESTIONNAIRE

PART 1  Definition

Please fill in the questionnaire according to your experiences and observations as a project leader of innovative teams.

Teams are understood in different ways by different people. Please describe some of their characteristics from your own experience as a leader of teams.

Characteristics of teams
+
+
+
+
+
+
+
+
+

Choose three key characteristics of the above and order them according to their importance (nr 1. being the most important nr 3. being the least important).

Key characteristics of teams
1.
2.
3.
PART 2

Part 2 of the questionnaire consists of statements and open questions. The statements can be filled in by 'yes' or 'no' or by a four-point scale 'do not agree at all' to 'agree strongly'.
Example; if you agree strongly on an item put an 'X' in that space.

| .... | .... | .... | .... | .... | | .... |
do not agree at all do not agree do agree strongly agree don't know

Comments are welcome if you want to specify your answer or when you would like to give general remarks on the item.
If your experience does not give you any clue or if you really do not want to answer the question, fill in 'don't know'.

I. TEAMS

1. Which of the following actions do team members (not the leader) perform in order to enable team success?
   a. Report the progress of the team to a sponsor/higher organisational level.
      | .... | .... | .... | .... | | .... | | .... |
don't agree at all strongly agree don't know
   b. Absorb outside pressures for the team so it can work free of interference.
      | .... | .... | .... | .... | | .... | | .... |
don't agree at all strongly agree don't know
   c. 'Talk up' the team to outsiders
      | .... | .... | .... | .... | | .... | | .... |
don't agree at all strongly agree don't know
   d. Find out whether others in the organisation support or oppose the teams activities.
      | .... | .... | .... | .... | | .... | | .... |
don't agree at all strongly agree don't know
   e. Keep news about the team secret from others in the organisation until the appropriate time is there.
      | .... | .... | .... | .... | | .... | | .... |
don't agree at all strongly agree don't know

comments:

2. a. Teams that do not make time for team development will not survive.

   | .... | .... | .... | .... | | .... |
don't agree at all strongly agree don't know
b. In many organisations time for team development is not budgeted. Teams usually make time by ‘hiding’ the social activities coming with team development in more technical project management activities or by ‘stealing’ the time from other activities.

   |       |       |       |       |       |       |
   do not agree at all | strongly agree | don't know

comments:

3. A team needs ‘free room’ to work creatively on a task and to reach a successful outcome.

a. Physical room of its own.

   |       |       |       |       |       |       |
   do not agree at all | strongly agree | don't know

b. Financial room, for instance a budget.

   |       |       |       |       |       |       |
   do not agree at all | strongly agree | don't know

c. ‘Own’ facilities and technological support.

   |       |       |       |       |       |       |
   do not agree at all | strongly agree | don't know

comments:

4. In the start-up phase, consisting of forming, storming and norming activities, team members in a successful team are concerned with:

a. their position in the group

   |       |       |       |       |       |       |
   do not agree at all | strongly agree | don't know

b. working on the task

   |       |       |       |       |       |       |
   do not agree at all | strongly agree | don't know

c. whether they share the vision of the project

   |       |       |       |       |       |       |
   do not agree at all | strongly agree | don't know

d. structure and planning of the project

   |       |       |       |       |       |       |
   do not agree at all | strongly agree | don't know

In the performing phase of a team, team members in a successful team are concerned with:

e. whether everybody shows up on appointments

   |       |       |       |       |       |       |
   do not agree at all | strongly agree | don't know
f. whether they identify with the team

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g. effectiveness of the team

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h. helping each other/constructive feedback

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| do not agree at all | strongly agree | don't know 

comments:

5. Whenever there is a change in membership during the performing phase of the project, the group process 'stops' abruptly. This might mean that effectiveness goes down; the team has to go back to the start-up phase and has to deal on a more basic level than before with acceptance, communication, goal integration and control.

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| do not agree at all | strongly agree | don't know 

comments:

6. How does a team stay inspired?

Please describe an example from your experience or give your thoughts on this item.

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

7. In the performance phase successful team members need to trust and mutually respect each other. To achieve this:

a. Trust of team members in themselves is an absolute condition

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b. Belief in the competence and expertise of other team members and team leader is an absolute condition.

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c. Very high cohesion of the team is an absolute condition.

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| do not agree at all | strongly agree | don't know 

comments:
8. a. "Playing" can be observed in successful, creative and innovative teams.

| ...... | ...... | ...... | ...... | ...... |
| do not agree at all | strongly agree | don't know |

b. "Playing" in innovative teams can go from "playing" with space, rules and equipment up to "playing" with financial resources.

| ...... | ...... | ...... | ...... | ...... |
| do not agree at all | strongly agree | don't know |

c. This does not apply to "playing" with ideas, and concepts.

| ...... | ...... | ...... | ...... | ...... |
| do not agree at all | strongly agree | don't know |

d. For the team "to play" implies to have fun together and to challenge one another.

| ...... | ...... | ...... | ...... | ...... |
| do not agree at all | strongly agree | don't know |

e. When there is no space for laughter in a team you will eventually leave the group.

| ...... | ...... | ...... | ...... | ...... |
| do not agree at all | strongly agree | don't know |

comments:

9. A creative team has more viability when destructive thoughts and words are allowed as well. For instance freedom to question existing paradigms or structures and freedom to question each others beliefs.

| ...... | ...... | ...... | ...... | ...... |
| do not agree at all | strongly agree | don't know |

comments:

10. a. Teams **celebrate** their successes.

| ...... | ...... | ...... | ...... |
| yes | no | don't know |

b. Teams celebrate their failures.

| ...... | ...... | ...... |
| yes | no | don't know |

c. Please describe a situation from you own experience on the issue of teams celebrating.


5
II. LEADERSHIP

11. What kind of activities do you as a leader of an innovative team perform in order to enable long-term team success?

a. Report the progress of the team to a sponsor/higher organizational level.

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b. Absorb outside pressures for the team so it can work free of interference.

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c. Acquire resources for the team.

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d. Procure things which the team needs from other groups or individuals in the company.

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e. ‘Sell’ the vision/path the group has to follow to the outside organization.

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f. Find out whether others in the organisation support or oppose the teams activities.

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g. Keep news about the team secret from others in the organisation until the appropriate time is there.

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comments:

12. What extra kind of environmental conditions do you as a leader create in order to provide for a creative climate of a team?

a. Freedom to behave a bit arrogant; ‘elite team’.

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b. Tolerance from the organisation that quite often procedural rules will be disregarded.

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c. Access to more information and colleagues than normally would be allowed.

| ...... | ...... | ...... | ...... | ...... |
| do not agree at all | strongly agree | don't know |

Free allocation of time for team members.

| ...... | ...... | ...... | ...... | ...... |
| do not agree at all | strongly agree | don't know |

comments:

13. a. The leader is the most important political/ambassadorial bridge for the group to the outside world.

| ...... | ...... | ...... |
| yes | no | don't know |

b. The leader is the most important gate keeper and expert information bridge for the group to the outside world.

| ...... | ...... | ...... |
| yes | no | don't know |

comments:

14. When selecting a new innovative team it is of utmost importance:

a. to test personality characteristics of the candidates.

| ...... | ...... | ...... |
| yes | no | don't know |

b. to consider the commitment of the candidates to the goal.

| ...... | ...... | ...... |
| yes | no | don't know |

c. to consider the creative expertise of the candidates.

| ...... | ...... | ...... |
| yes | no | don't know |

d. to consider the position of the candidates in the organisation.

| ...... | ...... | ...... |
| yes | no | don't know |

e. to consider the costs of the candidates.

| ...... | ...... | ...... |
| yes | no | don't know |

comments:
15. How much time do you as leader use a participating and coaching leadership style and how much time does a leader use a instructing and delegating leadership style in the:

a. Start-up phase (forming, storming, norming) ?
   participating, coaching ... %
   instructing, delegating ... %

b. Performing phase ?
   participating, coaching ... %
   instructing, delegating ... %

comments:

16. What is minimally necessary to lead an innovative team from the viewpoint of control?

Please describe a situation from your own experience or give your thoughts on this item.


17. a. When a leader cannot "play" and give room, the team cannot "play".
   | ...... | ...... | ...... | ...... | ...... | ...... |
   do not agree at all strongly agree don't know

b. Even when the team cannot "play" it can still be creative.
   | ...... | ...... | ...... | ...... | ...... | ...... |
   do not agree at all strongly agree don't know

comments:

18. How do you as a leader act in order to allow mutual respect to develop in the start-up phase of a team?

a. open and vulnerable
   | ...... | ...... | ...... | ...... | ...... | ...... |
   do not agree at all strongly agree don't know

b. you make it clear that you do not know everything
   | ...... | ...... | ...... | ...... | ...... | ...... |
   do not agree at all strongly agree don't know

c. forceful
   | ...... | ...... | ...... | ...... | ...... | ...... |
   do not agree at all strongly agree don't know

d. opinionated
   | ...... | ...... | ...... | ...... | ...... | ...... |
   do not agree at all strongly agree don't know
19. How do you get the optimal creative output out of a team in a creative phase.

a. you neutralise dominant ideas.

   do not agree at all strongly agree don't know
   | ...... | ...... | ...... | ...... | ...... |

b. you give clear favorite alternatives at the outset of the group discussion.

   do not agree at all strongly agree don't know
   | ...... | ...... | ...... | ...... | ...... |

c. you use the creativity in the team and stimulates high interaction and hitch hiking on ideas.

   do not agree at all strongly agree don't know
   | ...... | ...... | ...... | ...... | ...... |

d. you give input if team members cannot.

   do not agree at all strongly agree don't know
   | ...... | ...... | ...... | ...... | ...... |

comments:

20. a. One of the most important assets of leadership is that the leader has process overview over the total project.

   do not agree at all strongly agree don't know
   | ...... | ...... | ...... | ...... | ...... |

b. One of the most important assets of leadership is that the leader has content overview over the total project.

   do not agree at all strongly agree don't know
   | ...... | ...... | ...... | ...... | ...... |

c. You as a leader have to establish and maintain clear project objectives.

   do not agree at all strongly agree don't know
   | ...... | ...... | ...... | ...... | ...... |

d. You as a leader have to establish and maintain exact methods for working, precise structure and planning.

   do not agree at all strongly agree don't know
   | ...... | ...... | ...... | ...... | ...... |

comments:
PART 3 Closure

Imagine some recent project teams, that you have led or lead at the moment. Visualize the start of these project teams as vivid and as clearly as possible.

Think of the conditions/reasons in the start-up phase that have lead to success of the innovative teams.

+ +
+ +
+ +
+ +

Think of conditions/reasons in the start-up phase that have lead to failure of the innovative teams.

+ +
+ +
+ +
+ +

Please choose the three most important reasons for success and the three most reasons for failure and order these according to their importance (nr 1. being the most important nr 3. being the least important).

Main conditions/reasons for success
1.
2.
3.

Main conditions/reasons for failure
1.
2.
3.

What are your concerns with teams? What kind of new tools for teambuilding would you like? What do you need?

THANK YOU FOR COMPLETING THIS QUESTIONNAIRE!

Helga Hohn, april 1994.
APPENDIX B

RESULTS OF THE QUESTIONNAIRE ITEMS

1. Flow Chart Questionnaire

2. Summary of results of all items
   legenda, content, statistical analysis

3. Significant Differences Between Professions

4. Significant Differences between Gender per Profession

5. Significant Differences for all Respondents on Gender, Age and Years of Experience
APPENDIX B.1. DEVELOPMENT OF THE QUESTIONNAIRE

Definition of four response groups
Definition of first questions

↓

First check of questions with OD colleagues
Second version questions become statements

↓

Validation of statements with male and female representatives of each group
Definite version of questionnaire

↓

COLLECTION OF DATA

Sending of questionnaires to response groups
Addition of fifth group \( n = 106 \)

↓

final response \( n = 75 \)
minimally five respondents in each cell

↓

ANALYSIS OF DATA

Content analysis of qualitative data
Statistical analysis of data
<table>
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<tr>
<th>QUESTIONNAIRE</th>
<th>Forced Choice Items</th>
<th>and</th>
<th>Open Questions</th>
<th>Results</th>
<th>Difference between Professions</th>
<th>Dif Gender per Prof</th>
<th>All Respondents</th>
<th>Gender Age Experiences</th>
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<td>All Items</td>
<td>N = 75</td>
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<td></td>
<td>Content Statements</td>
<td>In key words</td>
<td>Origin Questions and Expectation of Outcome</td>
<td>Cumul % agree</td>
<td>Kruskal-Wallis</td>
<td>Fisher Exact test</td>
<td>Kruskal W M. Carlo</td>
<td>Correlations</td>
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<td>PlayL &amp; D</td>
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<td>expected outcome</td>
<td># exp outc</td>
<td>sign.</td>
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<tr>
<td>01 A</td>
<td>Actions team: report progress</td>
<td>agree</td>
<td>37.5%</td>
<td></td>
<td></td>
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<tr>
<td>01 B</td>
<td>Actions team: absorb pressure</td>
<td>agree</td>
<td>46.7%</td>
<td></td>
<td></td>
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<td></td>
<td>rs = .17</td>
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<tr>
<td>01 C</td>
<td>Actions team: talk up outsider</td>
<td>agree</td>
<td>66.2%</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>01 D</td>
<td>Actions team: find out support</td>
<td>agree</td>
<td>71.2%</td>
<td></td>
<td></td>
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<td>rs = .17</td>
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<tr>
<td>01 E</td>
<td>Actions team: keep news secret</td>
<td>agree</td>
<td>52.8%</td>
<td></td>
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<td>rs = .17</td>
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<td>02 A</td>
<td>No time team dev. no survival</td>
<td>agree</td>
<td>79.7%</td>
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<td>rs = .17</td>
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<td>02 B</td>
<td>Make time by stealing it</td>
<td>agree</td>
<td>76.3%</td>
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<td>rs = .17</td>
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<td>03 A</td>
<td>Need 'free room': physical</td>
<td>agree</td>
<td>63.5%</td>
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<td>rs = .17</td>
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<td>03 B</td>
<td>Need 'free room': financial</td>
<td>agree</td>
<td>81.1%</td>
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<td>03 C</td>
<td>Need 'free room': facilities</td>
<td>agree</td>
<td>71.7%</td>
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<td>rs = .17</td>
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<td>04 A</td>
<td>Start concern: position in group</td>
<td>agree</td>
<td>72.6%</td>
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<td>rs = .17</td>
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<tr>
<td>04 B</td>
<td>Start concern: work on task</td>
<td>disagree</td>
<td>78.4%</td>
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<td>rs = .17</td>
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<td>04 C</td>
<td>Start concern: share vision</td>
<td>agree</td>
<td>88.2%</td>
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<td>rs = .17</td>
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<td>04 D</td>
<td>Start concern: planning</td>
<td>disagree</td>
<td>77.6%</td>
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<td>rs = .17</td>
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<td>04 E</td>
<td>Perform.concern: keep appoint.</td>
<td>agree</td>
<td>63.5%</td>
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<td>rs = .17</td>
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<td>04 F</td>
<td>Perform. concern: ident w team</td>
<td>agree</td>
<td>82.2%</td>
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<td>rs = .17</td>
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<td>04 G</td>
<td>Perform.concern: effectiv. team</td>
<td>agree</td>
<td>91.8%</td>
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<td>rs = .17</td>
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<td>04 H</td>
<td>Perf. concern: constr. feedback</td>
<td>agree</td>
<td>87.8%</td>
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<td>rs = .17</td>
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<td>05</td>
<td>Member change, process stops</td>
<td>agree</td>
<td>40.8%</td>
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<td>rs = .17</td>
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<tr>
<td>06 A</td>
<td>Open Question</td>
<td></td>
<td>Ext. Feedb</td>
<td></td>
<td>Freedom</td>
<td>Goals</td>
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<td>06 B</td>
<td>How does a team stay inspired?</td>
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<td>Leadersh.</td>
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<td>06 D</td>
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<td>Success</td>
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<td>Structure</td>
<td>Vision</td>
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<td>Vision</td>
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<td>Play/Dyn</td>
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<tr>
<td>06 G</td>
<td></td>
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<td>06 I</td>
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<tr>
<td>07 A</td>
<td>trust: cond. tr. in themselves</td>
<td>agree</td>
<td>78.4%</td>
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<td>07 B</td>
<td>trust: cond. competence l. + t.</td>
<td>agree</td>
<td>90.5%</td>
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<tr>
<td>07 C</td>
<td>trust: condition high cohesion</td>
<td>disagree</td>
<td>80.0%</td>
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<td></td>
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<td>rs = .23</td>
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<tr>
<td>08 A</td>
<td>Successful teams 'play'</td>
<td>agree</td>
<td>94.5%</td>
<td></td>
<td></td>
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<td>rs = .23</td>
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<tr>
<td>08 B</td>
<td>'play' with rules and finance</td>
<td>agree</td>
<td>76.8%</td>
<td></td>
<td></td>
<td></td>
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<td>08 C</td>
<td>don't 'play' with ideas</td>
<td>disagree</td>
<td>11.9%</td>
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<td>Correlations</td>
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<tr>
<td>08 D</td>
<td>'playing' implies challenge oth. no laughter, you as leader leave</td>
<td>agree</td>
<td>89.2 %</td>
<td>Kruskal-Wallis</td>
<td>rs = .24</td>
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<tr>
<td>09</td>
<td>Destruct. thoughts are allowed</td>
<td>agree</td>
<td>67.1 %</td>
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<td>rs = .19</td>
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<tr>
<td>10 A</td>
<td>Celebrate successes</td>
<td>agree</td>
<td>94.5 %</td>
<td>Kruskal-Wallis</td>
<td>rs = .17</td>
<td></td>
<td></td>
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<tr>
<td>10 B</td>
<td>Celebrate failures</td>
<td>agree</td>
<td>89.3 %</td>
<td>Fisher Exact test</td>
<td>rs = -.17</td>
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<tr>
<td>11 A</td>
<td>Action leader: report progress</td>
<td>agree</td>
<td>93.2 %</td>
<td>Kruskal-Wallis</td>
<td>rs = -.22</td>
<td></td>
<td></td>
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<tr>
<td>11 B</td>
<td>Action leader: absorb pressure</td>
<td>agree</td>
<td>85.7 %</td>
<td>Fisher Exact test</td>
<td>rs = .20</td>
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<tr>
<td>11 C</td>
<td>Action leader: acquire. resources</td>
<td>agree</td>
<td>87.5 %</td>
<td>Kruskal-Wallis</td>
<td>rs = .20</td>
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<tr>
<td>11 D</td>
<td>Action leader: proc. things</td>
<td>agree</td>
<td>84.7 %</td>
<td>Fisher Exact test</td>
<td>rs = -.24</td>
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<td>11 E</td>
<td>Action leader: 'sell' vision</td>
<td>agree</td>
<td>81.2 %</td>
<td>Kruskal-Wallis</td>
<td>rs = .18</td>
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<tr>
<td>11 F</td>
<td>Action leader: find out support</td>
<td>agree</td>
<td>56.7 %</td>
<td>Fisher Exact test</td>
<td>rs = .16</td>
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<tr>
<td>11 G</td>
<td>Action leader: keep news secret</td>
<td>agree</td>
<td>64.8 %</td>
<td>Kruskal-Wallis</td>
<td>rs = .16</td>
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<tr>
<td>12 A</td>
<td>Cond.creat. clim: &quot;Elite&quot; team</td>
<td>disagree</td>
<td>31.4 %</td>
<td>Kruskal-Wallis</td>
<td>rs = -.24</td>
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<tr>
<td>12 B</td>
<td>Cond. cr. clim.: tolerance org</td>
<td>agree</td>
<td>71.4 %</td>
<td>Fisher Exact test</td>
<td>rs = .18</td>
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<tr>
<td>12 C</td>
<td>Cond. creat. clim.: access inf.</td>
<td>agree</td>
<td>Cancell</td>
<td>Cancelled due to missing data</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>12 D</td>
<td>Cond. cr. clim: free alloc. time</td>
<td>agree</td>
<td>58.2 %</td>
<td>Fisher Exact test</td>
<td>rs = .18</td>
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<td>13 A</td>
<td>Leader political bridge</td>
<td>agree</td>
<td>64.8 %</td>
<td>Kruskal-Wallis</td>
<td>rs = .18</td>
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<td>13 B</td>
<td>Leader information bridge</td>
<td>disagree</td>
<td>31.0 %</td>
<td>Fisher Exact test</td>
<td>rs = .18</td>
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<td>14 A</td>
<td>Selection team: test personality</td>
<td>disagree</td>
<td>62.3 %</td>
<td>Kruskal-Wallis</td>
<td>rs = .18</td>
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<tr>
<td>14 B</td>
<td>Select. team: cons. commitm.</td>
<td>agree</td>
<td>93.9 %</td>
<td>Fisher Exact test</td>
<td>rs = .18</td>
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<td></td>
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<tr>
<td>14 C</td>
<td>Select. team: creative expertise</td>
<td>disagree</td>
<td>85.2 %</td>
<td>Kruskal-Wallis</td>
<td>rs = .18</td>
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<td></td>
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</tr>
<tr>
<td>14 D</td>
<td>Select. team: position in organ.</td>
<td>disagree</td>
<td>Cancelled due to missing data</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>14 E</td>
<td>Select team: cons. cost candid.</td>
<td>disagree</td>
<td>Cancelled due to unclear statement</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>15 A</td>
<td>Leadership style start-up phase</td>
<td>disagree</td>
<td>Cancelled due to unclear statement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 B</td>
<td>Leadership style perf. phase</td>
<td>disagree</td>
<td>Cancelled due to unclear statement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 A</td>
<td>Open Question</td>
<td>Goals</td>
<td>GroupDyn</td>
<td>C = .24</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>16 B</td>
<td>What is minimally necessary to lead an innovative team from the viewpoint of control?</td>
<td>Monitoring</td>
<td>Planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 C</td>
<td></td>
<td>Success</td>
<td>Surround.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 D</td>
<td></td>
<td></td>
<td>Team Str.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 E</td>
<td></td>
<td></td>
<td>rs = .16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 F</td>
<td></td>
<td></td>
<td>rs = .16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 G</td>
<td></td>
<td></td>
<td>rs = .16</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>16 H</td>
<td></td>
<td></td>
<td>rs = .16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 A</td>
<td>leader cannot play, team cannot</td>
<td>agree</td>
<td>87.3 %</td>
<td>Kruskal-Wallis</td>
<td>rs = .16</td>
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### Questionnaire

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<thead>
<tr>
<th>Content Statements in Key Words</th>
<th>Origin Questions and Expectation of Outcome</th>
<th>Cumul % Agree</th>
<th>Kruskal-Wallis Sign.</th>
<th>Fisher Exact Test</th>
<th>Kruskal-W M. Carlo Correlations</th>
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<td>All Items N = 75</td>
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<tr>
<td><strong>17 B</strong></td>
<td>without play team still creative</td>
<td>disagree</td>
<td>47.8 %</td>
<td></td>
<td></td>
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<tr>
<td><strong>18 A</strong></td>
<td>leader at start: open, vulnerable</td>
<td>agree</td>
<td>88.7 %</td>
<td></td>
<td>rs = .24</td>
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<tr>
<td><strong>18 B</strong></td>
<td>I at start: don’t kn. everything</td>
<td>agree</td>
<td>94.4 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>18 C</strong></td>
<td>leader at start: forceful</td>
<td>disagree</td>
<td>34.7 %</td>
<td>.038</td>
<td></td>
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<tr>
<td><strong>18 D</strong></td>
<td>leader at start: opinionated</td>
<td>disagree</td>
<td>43.8 %</td>
<td></td>
<td>rs = -.26</td>
</tr>
<tr>
<td><strong>18 E</strong></td>
<td>I at start: obs. well being team</td>
<td>agree</td>
<td>81.1 %</td>
<td></td>
<td>rs = -.21</td>
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<tr>
<td><strong>19 A</strong></td>
<td>creat. output: neutralize domin.</td>
<td>disagree</td>
<td>50.7 %</td>
<td>rs = -.20</td>
<td>rs = -.18</td>
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<tr>
<td><strong>19 B</strong></td>
<td>creat. output: neutralize domin.</td>
<td>disagree</td>
<td>33.8 %</td>
<td></td>
<td>rs = -.21</td>
</tr>
<tr>
<td><strong>19 C</strong></td>
<td>creat. output: give own ideas</td>
<td>agree</td>
<td>96.7 %</td>
<td>rs = -.21</td>
<td>rs = -.18</td>
</tr>
<tr>
<td><strong>19 D</strong></td>
<td>creat. output: give own ideas</td>
<td>disagree</td>
<td>87.3 %</td>
<td>rs = -.21</td>
<td>rs = -.18</td>
</tr>
<tr>
<td><strong>20 A</strong></td>
<td>Leader has process overview</td>
<td>agree</td>
<td>97.3 %</td>
<td>rs = -.34</td>
<td>rs = -.23</td>
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<tr>
<td><strong>20 B</strong></td>
<td>Leader has content overview</td>
<td>disagree</td>
<td>64.0 %</td>
<td>.031</td>
<td>rs = -.34</td>
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<tr>
<td><strong>20 C</strong></td>
<td>Leader establ. clear objectives</td>
<td>agree</td>
<td>86.5 %</td>
<td>.000</td>
<td>rs = -.16</td>
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<tr>
<td><strong>20 D</strong></td>
<td>Leader establ. exact methods</td>
<td>disagree</td>
<td>36.5 %</td>
<td>.035</td>
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<tr>
<td>S A</td>
<td>Open Question</td>
<td>Goals</td>
<td>.070</td>
<td>rs = -.24</td>
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<tr>
<td>S B</td>
<td>Open Question</td>
<td>GrouDyn Leadersh.</td>
<td>.002</td>
<td>rs = -.26</td>
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<tr>
<td>S C</td>
<td>Main conditions/reasons in the start-up phase that have lead to success of the innovative team (own experience).</td>
<td>Motivation Selection Success Surround Team Stru.</td>
<td>rs = -.21</td>
<td>rs = .18</td>
<td></td>
</tr>
<tr>
<td>S D</td>
<td>Main conditions/reasons in the start-up phase that have lead to success of the innovative team (own experience).</td>
<td>Little Freed. Poor GrDyn Poor Lead.</td>
<td>rs = .15</td>
<td>rs = -.17</td>
<td></td>
</tr>
<tr>
<td>S E</td>
<td>Main conditions/reasons in the start-up phase that have lead to failure of the innovative team (own experience).</td>
<td>Little Motiv. Unclear Gls Unfav Surr. Unt. T. Str. Lack Res.</td>
<td>rs = -.17</td>
<td>rs = -.16</td>
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</table>

**Items** 21 (22 incl discarded items)  
**Clusters** 33  
**Statements** 60 (66 incl discarded statem.)  
**Total** 93 (98 incl discarded ones)
3. SIGNIFICANT DIFFERENCES BETWEEN PROFESSIONS

FORCED CHOICE ITEMS

Item 4 F

In the performing phase of a team, team members in a successful team are concerned with whether they identify with the team.

Project managers differ significantly in their opinion on this statement (31% disagreement) with innovation managers (no disagreement) and facilitators (17% disagreement).

Agreement of all respondents with the statement 82%

Kruskal Wallis rank test: Chi-Square 10.5539 df 4 significance 0.032

<table>
<thead>
<tr>
<th></th>
<th>Fac</th>
<th>Soc Sc</th>
<th>In Man</th>
<th>Artist L</th>
<th>Pr Man</th>
</tr>
</thead>
<tbody>
<tr>
<td>high disagree</td>
<td>6%</td>
<td>11%</td>
<td>0%</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>disagree</td>
<td>11%</td>
<td>22%</td>
<td>0%</td>
<td>10%</td>
<td>26%</td>
</tr>
<tr>
<td>agree</td>
<td>39%</td>
<td>33%</td>
<td>47%</td>
<td>60%</td>
<td>58%</td>
</tr>
<tr>
<td>high agree</td>
<td>44%</td>
<td>33%</td>
<td>53%</td>
<td>30%</td>
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</table>

Table: response in percentages

Successful performing: identify with team

<table>
<thead>
<tr>
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<th>Fac</th>
<th>Soc Sc</th>
<th>In Man</th>
<th>Artist L</th>
<th>Pr Man</th>
</tr>
</thead>
<tbody>
<tr>
<td>high disagree</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>disagree</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>agree</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
</tr>
<tr>
<td>high agree</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
<td>30%</td>
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</tbody>
</table>

Chart of responses in percentages

Facilitators
Social Scientists 0.411
Innovation Managers 0.358 0.110
Artistic Leaders 0.714 0.567 0.180
Project Managers 0.048 0.576 0.001 0.103

Table: p values Wilcoxon test

250
Item 7C
In the performance phase successful team members need to trust and mutually respect each other. To achieve this: Very high cohesion of the team is an absolute condition. Social scientists (60% disagreement) differ significantly in their opinion on this statement with facilitators (23% disagreement), innovation managers (28% disagreement) and project managers (53% disagreement).

Agreement of all respondents with the statement 60%
Kruskal Wallis rank test: Chi-Square 8,8626 df 4 significance 0.065

<table>
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<th>Soc Sc</th>
<th>In Man</th>
<th>Artist L</th>
<th>Pr Man</th>
</tr>
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<tbody>
<tr>
<td>High disagree</td>
<td>6%</td>
<td>20%</td>
<td>0%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Disagree</td>
<td>17%</td>
<td>40%</td>
<td>28%</td>
<td>40%</td>
<td>47%</td>
</tr>
<tr>
<td>Agree</td>
<td>39%</td>
<td>40%</td>
<td>61%</td>
<td>20%</td>
<td>37%</td>
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<tr>
<td>High agree</td>
<td>40%</td>
<td>0%</td>
<td>11%</td>
<td>30%</td>
<td>11%</td>
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</tbody>
</table>

Table: response in percentages

Achieve trust: high cohesion

![Chart showing response percentages](image)

Chart of responses in percentages

<table>
<thead>
<tr>
<th>Fac</th>
<th>Soc Sc</th>
<th>In Man</th>
<th>Artist L</th>
<th>Pr Man</th>
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<td>Social Scientists</td>
<td>0.043</td>
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<td></td>
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<tr>
<td>Innovation Managers</td>
<td>0.192</td>
<td>0.043</td>
<td></td>
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<tr>
<td>Artistic Leaders</td>
<td>0.290</td>
<td>0.302</td>
<td>0.680</td>
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<tr>
<td>Project Managers</td>
<td>0.032</td>
<td>0.372</td>
<td>0.172</td>
<td>0.677</td>
</tr>
</tbody>
</table>

Table: p values Wilcoxon test

Appendix B 3 Differences between Professions
Item 8 A

Playing can be observed in successful, creative and innovation teams. Project managers display disagreement. Their opinion differs significantly from all other groups (Facilitators and innovation manager: 6%, social scientists and artistic leaders no disagreement).

Agreement of all respondents with the statement 95%

Kruskal Wallis rank test: Chi-Square 12.9280 df 4 significance 0.012

<table>
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<th>In Man</th>
<th>Artist L</th>
<th>Pr Man</th>
</tr>
</thead>
<tbody>
<tr>
<td>high disagree</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
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table: response in percentages

Successful teams 'play'

![Chart of responses in percentages]

cart of responses in percentages

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Table: p values Wilcoxon test
Item 8 B

Playing in innovative teams can go from playing with space, rules and equipment up to playing with financial resources.

Social scientists disagree most with this statement (50% disagreement). They differ significantly from facilitators (0% disagreement), artistic leaders differ significantly (20% disagreement), project managers disagree (35% disagreement) significantly from facilitators (0% disagreement).

Agreement of all respondents with the statement 77%
Kruskal Wallis rank test: Chi-Square 11,0249 df 4 significance 0.026

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Table: response in percentages

'Playing' with space, rules, finance

Chart of responses in percentages

Facilitators: 0.006
Social Scientists: 0.211
Innovation Managers: 0.006 0.063 0.573
Artistic Leaders: 0.554
Project Managers: 0.006 0.370 0.292 0.116

Table: p values Wilcoxon test

Appendix B 3 Differences between Professions 253
Item 8 E
When there is no space for laughter in a team you will eventually leave the group.
Project managers disagree most with this statement (61%) they differ significantly from
artistic leaders (10% disagreement), social scientists (10 % disagreement) and facilitators
(30% disagreement).

Agreement of all respondents with the statement 67%
Kruskal Wallis rank test: Chi Square 8.2566 df 4 significance 0.083

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Table: response in percentages

![Image of response chart]

chart of responses in percentages

Facilitators
Social Scientists 0.551
Innovation Managers 0.687 0.307
Artistic Leaders 0.551 1.000 0.307
Project Managers 0.071 0.019 0.125 0.019

Table: p values Wilcoxon test
Item 11 C
What kind of activities do you as a leader of an innovative team perform in order to enable long term team success? Acquire resources for the team.
Significant differences are found between innovation managers (78% high agreement) and facilitators (28 % disagreement), artistic leaders (38 % high agreement), artistic leaders (38% high agreement) and facilitators (28% disagreement).

Agreement of all respondents with the statement
Kruskal Wallis rank test: Chi-Square 9,9359 df 4 significance 0,042

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Table: response in percentages

Leader-action: acquire resources

chart of responses in percentages

Facilitators
Social Scientists 0.079
Innovation Managers 0.041 0.893
Artistic Leaders 0.833 0.974 0.051
Project Managers 0.803 0.930 0.013 0.975

Table: p values Wilcoxon test

Appendix B 3 Differences between Professions 255
Item 11 D

What kind of activities do you as a leader of an innovative team perform in order to enable long term team success? Procure things which the team needs from other groups or individuals in the company.

Facilitators disagree most of all professions with this statement (28 % disagreement). They differ significantly from the opinion of social scientists (10% disagreement) and innovation managers (12 %). Project managers ( 5% disagreement) differ significantly from social scientists and innovation managers.

Agreement of all respondents with the statement 88%
Kruskal Wallis rank test: Chi-Square 9,1583 df 4 significance 0,057

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table: response in percentages

Leader-action: procure things from others

chart of responses in percentages

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Table: p values Wilcoxon test

256
Item 11 E

What kind of activities do you as a leader of an innovative team perform in order to enable long-term team success? 'Sell' the vision/path the group has to follow to the outside organisation.

Social scientists differ significantly from all other groups in agreeing more strongly with the statement (90% high agreement) than the other professions.

Agreement of all respondents with the statement 85%
Kruskal Wallis rank test: Chi-Square 9.6559 df 4 significance 0.047

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Table: response in percentages

Leader-action: 'sell' the vision

![Chart of responses in percentages]

Facilitators
Social Scientists 0.013
Innovation Managers 0.141 0.065
Artistic Leaders 0.932 0.022 0.207
Project Managers 0.116 0.044 0.885 0.173

Table: p values Wilcoxon test

Appendix B 3 Differences between Professions 257
Item 20 B
One of the most important assets of leadership is that the leader has content overview over the total project.
Facilitators disagree significantly more (67% disagreement) than all the other professions with this statement.

Agreement of all respondents with the statement 72%
Kruskal Wallis rank test: Chi-Square 10.6586 df 4 significance 0.031

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Table: response in percentages

Leaders should have content overview

![Chart of responses in percentages]

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Table: p values Wilcoxon test
Item 20 C
You as a leader have to establish and maintain clear project objectives.
Except for the artistic leaders and the facilitators who disagree most on this statement (17% and 44% disagreement) and for the innovative managers and social scientists who are in the middle (12% and 10% disagreement) all other groups differ significantly from the project managers (0% disagreement 95% agreement) and from each other.

Agreement of all respondents with the statement 87%
Kruskal Wallis rank test: Chi-Square 21.6119 df 4 significance 0.0002

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Table: response in percentages

Leaders should maintain clear objectives

chart of responses in percentages

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Table: p values Wilcoxon test

Facilitators
Social Scientists 0.005
Innovation Managers 0.046 0.337
Artistic Leaders 0.162 0.085 0.013
Project Managers 0.0001 0.051 0.061 0.0001

Table: p values Wilcoxon test

Appendix B 3 Differences between Professions
Item 20 D
You as a leader have to establish and maintain exact methods for working precise structure and working methods

Project manager agree most on this statement (61% agreement) and differ significantly from social scientists (11% agreement), facilitators and innovative managers (28% agreement). Social scientists differ significantly from artistic leaders (40% agreement).

Agreement of all respondents with the statement  37%
Kruskal Wallis rank test:  Chi-Square 10.3615 df 4 significance 0.035

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Table: response in percentages

Leaders should establish exact methods

![Chart showing the percentage of agreement among different groups]

Chart of responses in percentages

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Table: p values Wilcoxon test
SIGNIFICANT DIFFERENCES BETWEEN PROFESSIONS

OPEN QUESTIONS

Item 6 E  How does a team stay inspired?

Leadership: facilitation, responsibility leader motivating team, care, development team members, leader feedback

Facilitators mention statements from this cluster significantly less (17% stated) than artistic leaders (60% stated) social scientists (50% stated) and project managers (47% stated). Innovative managers mention this cluster significantly less (22 % stated) than artistic leaders (60% stated).

Fisher Exact test 0.063

Item is stated by 36 % of all respondents.

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*Table: responses in percentages*

![Inspiration: Leadership Chart](chart)

*Chart: responses in percentages*

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Table: p values Fisher Exact test

Appendix B 3 Differences between Professions 261
Item 6 G  How does a team stay inspired?

Success/Results: results, output, (special) achievement, advantage

Artistic leaders and social scientists mention statements from this cluster significantly less (not stated) than innovative managers (45 % stated) and project managers (42 % stated).

Fisher Exact test  0.012

Item is stated by 27 % of all respondents.

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*Table: responses in percentages*

Chart: responses in percentages

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Table: p values Fisher Exact test
Item S B  Conditions/reasons that have led to success

*Group Dynamics: trust, openness, humour, good atmosphere, informal, happiness, good communication*

Facilitators mention statements from this cluster significantly less (17% stated) than artistic leaders (60% stated), project managers (53% stated) and so scientists (50% stated).

Fisher Exact test $0.07$

Item is stated by 39% of all respondents.

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*table: responses in percentages*

*chart: responses in percentages*

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<td>0.345</td>
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<td>0.028</td>
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<td>0.025</td>
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<td>0.114</td>
<td>0.507</td>
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</tr>
</tbody>
</table>

*Table: p values Fisher Exact test*

Appendix B 3 Differences between Professions 263
Item S D  Conditions/reasons that have led to success

Motivation: commitment to goal, to group, passion, involvement, belief, interest in work, urgency, positive outlook under stress

Artistic leaders mentions statements from this cluster significantly more often (90% stated) than social scientists (30% stated) project managers (31% stated) and innovative managers (44 % stated). Facilitators mentions items from this cluster significantly more often (61 % stated) than project managers (31 % stated).

Fisher Exact test 0.017

Item is stated by 49 % of all respondents.

<table>
<thead>
<tr>
<th></th>
<th>Fac</th>
<th>Soc Sc</th>
<th>In Man</th>
<th>Artist L.</th>
<th>Pr Man</th>
</tr>
</thead>
<tbody>
<tr>
<td>not stated</td>
<td>39%</td>
<td>70%</td>
<td>56%</td>
<td>10%</td>
<td>69%</td>
</tr>
<tr>
<td>stated</td>
<td>61%</td>
<td>30%</td>
<td>44%</td>
<td>90%</td>
<td>31%</td>
</tr>
</tbody>
</table>

Table: responses in percentages

![Success: Motivation Chart]

chart: responses in percentages

<table>
<thead>
<tr>
<th>Fac</th>
<th>Soc Sc</th>
<th>In Man</th>
<th>Artist L.</th>
<th>Pr Man</th>
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<tbody>
<tr>
<td>0.118</td>
<td>0.253</td>
<td>0.116</td>
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</tr>
</tbody>
</table>

Table: p values Fisher Exact test
Item F F  Conditions/reasons that have led to failure.

Unfavourable surroundings:  no support from top, poor project fit with company and
culture, unfavourable politics, wrong things happening in
the external world

Project managers mention statements from this cluster significantly less often (5
% stated) than innovative managers (44 % stated) and facilitators (28% stated).

Fisher Exact test  0.074

Item is stated by 25 % of all respondents.

<table>
<thead>
<tr>
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<th>Fac</th>
<th>Soc Sc</th>
<th>In Man</th>
<th>Artist L</th>
<th>Pr Man</th>
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</thead>
<tbody>
<tr>
<td>stated</td>
<td>72%</td>
<td>70%</td>
<td>56%</td>
<td>80%</td>
<td>95%</td>
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<td></td>
<td>28%</td>
<td>30%</td>
<td>44%</td>
<td>20%</td>
<td>5%</td>
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</table>

*table: responses in percentages*

**Failure: Unfavourable Surroundings**

*chart: responses in percentages*

<table>
<thead>
<tr>
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<th>Soc Sc</th>
<th>In Man</th>
<th>Artist L</th>
<th>Pr Man</th>
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<tbody>
<tr>
<td>0.615</td>
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<td>0.500</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td>innovation Manager</td>
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<td></td>
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</tr>
<tr>
<td>Artistic Leader</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Manager</td>
<td>0.078</td>
<td>0.105</td>
<td>0.007</td>
<td>0.267</td>
</tr>
</tbody>
</table>

Table: p values Fisher Exact test

Appendix B 3 Differences between Professions  265
Item 3 A  A team needs 'free room' to work creatively on a task and to reach a successful outcome. Physical room of its own.

For the innovative managers men agree significantly more than women on this item.

Kruskal Wallis rank test  significance: .04

<table>
<thead>
<tr>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>Innovation Managers</th>
<th>Artistic Leaders</th>
<th>Project Managers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>male</td>
<td>female</td>
<td>male</td>
<td>female</td>
</tr>
<tr>
<td>highly disagree</td>
<td>0.0%</td>
<td>9.1%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>disagree</td>
<td>57.1%</td>
<td>36.4%</td>
<td>40.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>agree</td>
<td>28.6%</td>
<td>18.2%</td>
<td>40.0%</td>
<td>40.0%</td>
</tr>
<tr>
<td>highly agree</td>
<td>14.3%</td>
<td>36.4%</td>
<td>20.0%</td>
<td>60.0%</td>
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</table>

Facilitators

- p = .60
- p = .12
- p = .08
- p = .16

p values Wilcoxon test
Item 7 A  In the performance phase successful team members need to trust and mutually respect each other. To achieve this: Trust of team members in themselves is an absolute condition.

For the innovative managers men agree significantly more than women on this item. For all other professions no significant differences between genders are found.

Kruskal Wallis rank test significance .096

<table>
<thead>
<tr>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>Innovation Managers</th>
<th>Artistic Leaders</th>
<th>Project Managers</th>
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<td></td>
<td>male</td>
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<td>male</td>
<td>female</td>
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<tr>
<td>highly disagree</td>
<td>0.0%</td>
<td>9.1%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>disagree</td>
<td>14.3%</td>
<td>0.0%</td>
<td>40.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>agree</td>
<td>71.4%</td>
<td>45.5%</td>
<td>20.0%</td>
<td>75.0%</td>
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<tr>
<td>highly agree</td>
<td>14.3%</td>
<td>45.5%</td>
<td>40.0%</td>
<td>25.0%</td>
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</tbody>
</table>

p = .24  p = .69  p = .01  p = .31

p values Wilcoxon test
Item 8 A  "Playing" can be observed in successful, creative and innovative teams.

For the innovative managers men agree significantly more than women on this item.
For the social scientists women agree more highly than men on this item.
For all other professions no significant differences between genders are found.

Kruskal Wallis rank test  significance  .069

<table>
<thead>
<tr>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>Innovation Managers</th>
<th>Artistic Leaders</th>
<th>Project Managers</th>
</tr>
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<tbody>
<tr>
<td></td>
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<td>female</td>
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<td>female</td>
</tr>
<tr>
<td>highly disagree</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>disagree</td>
<td>0.0%</td>
<td>9.1%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>agree</td>
<td>28.8%</td>
<td>9.1%</td>
<td>60.0%</td>
<td>0.0%</td>
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<tr>
<td>highly agree</td>
<td>71.4%</td>
<td>81.8%</td>
<td>40.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

p = .70  p = .07  p = .06  p = 1.0

p values Wilcoxon test
“Playing” can be observed in successful, creative and innovative teams. This does not apply to playing with ideas and concepts.

For the innovative managers men disagree significantly more than women on this item.

For all other professions no significant differences between genders are found.

Kruskal Wallis rank test significance .034

<table>
<thead>
<tr>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>Innovation Managers</th>
<th>Artistic Leaders</th>
<th>Project Managers</th>
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<tbody>
<tr>
<td>highly disagree</td>
<td>42.9%</td>
<td>70.0%</td>
<td>60.0%</td>
<td>100.0%</td>
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<tr>
<td>disagree</td>
<td>28.6%</td>
<td>30.0%</td>
<td>40.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>agree</td>
<td>14.3%</td>
<td>0.0%</td>
<td>0.0%</td>
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</tr>
<tr>
<td>highly agree</td>
<td>14.3%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

\[ p = .17 \]
\[ p = .23 \]
\[ p = .04 \]
\[ p = .66 \]

p values Wilcoxon test
Item 8E  *When there is no space for laughter in a team you [as a leader] will eventually leave the group.*

For the social scientists women agree significantly more than men on this item.
For the facilitators men agree significantly more than women with on this item.
For all other professions no significant differences between genders are found.

Kruskal Wallis rank test  significance  .078

<table>
<thead>
<tr>
<th></th>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>Innovation Managers</th>
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<td></td>
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<td>female</td>
<td>male</td>
<td>female</td>
<td>male</td>
</tr>
<tr>
<td>highly disagree</td>
<td>0.0%</td>
<td>10.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>disagree</td>
<td>14.3%</td>
<td>30.0%</td>
<td>20.0%</td>
<td>0.0%</td>
<td>18.2%</td>
</tr>
<tr>
<td>agree</td>
<td>0.0%</td>
<td>40.0%</td>
<td>60.0%</td>
<td>20.0%</td>
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<td>85.7%</td>
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<td>80.0%</td>
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Facilitators  
Soc. Scientists  
In. Managers  
Art. Leaders  
Proj. Man.  

p = .03  
p = .07  
p = .55  
p = .82

p values Wilcoxon test
**Item 11D** What kind of activities do you as a leader of an innovative team perform in order to enable long-term team success?

*Procure things which the team needs from other groups or individuals in the company.*

For the innovative managers men agree significantly more than women on this item. For all other professions no significant differences between genders are found.

<table>
<thead>
<tr>
<th></th>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>Innovation Managers</th>
<th>Artistic Leaders</th>
<th>Project Managers</th>
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<td>highly disagree</td>
<td>14.3%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>disagree</td>
<td>28.6%</td>
<td>18.2%</td>
<td>0.0%</td>
<td>20.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>agree</td>
<td>42.9%</td>
<td>36.4%</td>
<td>40.0%</td>
<td>0.0%</td>
<td>10.0%</td>
</tr>
<tr>
<td>highly agree</td>
<td>14.3%</td>
<td>45.5%</td>
<td>60.0%</td>
<td>80.0%</td>
<td>80.0%</td>
</tr>
</tbody>
</table>

**Kruskal Wallis rank test**

significance .023

---

**Facilitators**

- **Male:** 14.3%, 28.6%, 42.9%, 14.3%
- **Female:** 0.0%, 18.2%, 36.4%, 45.5%

**Soc. Scientists**

- **Male:** 0.0%, 0.0%, 0.0%, 0.0%
- **Female:** 0.0%, 0.0%, 0.0%, 0.0%

**In. Managers**

- **Male:** 0.0%, 0.0%, 10.0%, 80.0%
- **Female:** 0.0%, 0.0%, 42.9%, 28.6%

**Art. Leaders**

- **Male:** 0.0%, 0.0%, 60.0%, 40.0%
- **Female:** 0.0%, 0.0%, 66.7%, 33.3%

**Proj. Man.**

- **Male:** 0.0%

**p values Wilcoxon test**

- **Facilitators:** p = .13
- **Soc. Scientists:** p = .70
- **In. Managers:** p = .01
- **Art. Leaders:** p = .86
**Item 12A** What extra kind of environmental conditions do you as a leader create in order to provide for a creative climate of a team?

*Freedom to behave a bit arrogant; 'elite team'.*

For the artistic leaders men agree more than women on this item. For all other professions no significant differences between genders are found.

Kruskal Wallis rank test

<table>
<thead>
<tr>
<th></th>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>Innovation Managers</th>
<th>Artistic Leaders</th>
<th>Project Managers</th>
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<td>male</td>
<td>female</td>
<td>male</td>
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<td>40.0%</td>
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<td>14.3%</td>
<td>33.3%</td>
<td>25.0%</td>
<td>20.0%</td>
<td>30.0%</td>
</tr>
<tr>
<td>agree</td>
<td>42.9%</td>
<td>11.1%</td>
<td>50.0%</td>
<td>40.0%</td>
<td>20.0%</td>
</tr>
<tr>
<td>highly agree</td>
<td>14.3%</td>
<td>11.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>10.0%</td>
</tr>
</tbody>
</table>

**Facilitators**

- p = .32

**Soc. Scientists**

- p = .69

**In Managers**

- p = .92

**Art. Managers**

- p = .02

**Proj. Man.**

- p values Wilcoxon test

- p highly disagree
- p disagree
- p agree
- p highly agree
**Item 18B** How do you as a leader act in order to allow mutual respect to develop in the start-up phase of a team. You make it clear that you do not know everything.

For the artistic leaders women agree more highly than men with this item. For all other professions no significant differences between genders are found.

Kruskal Wallis rank test  & significance 0.036

<table>
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<tr>
<th></th>
<th>Facilitators</th>
<th>Social Scientists</th>
<th>Innovation Managers</th>
<th>Artistic Leaders</th>
<th>Project Managers</th>
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<td>female</td>
<td>male</td>
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<tr>
<td>highly disagree</td>
<td>0.0%</td>
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<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>disagree</td>
<td>0.0%</td>
<td>9.1%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>agree</td>
<td>71.4%</td>
<td>45.5%</td>
<td>100.0%</td>
<td>0.0%</td>
<td>36.4%</td>
</tr>
<tr>
<td>highly agree</td>
<td>28.6%</td>
<td>45.5%</td>
<td>0.0%</td>
<td>100.0%</td>
<td>63.6%</td>
</tr>
</tbody>
</table>

**p values Wilcoxon test**

- Facilitators: p = .68
- Social Scientists: p = .01
- Innovation Managers: p = .64
- Artistic Leaders: p = .01
- Project Managers: p = .01
Significant differences between genders per profession

Open questions

Item 06 G How does a team stay inspired?

Success/Results: results, output, (special achievement), advantage

For the innovative managers women mention statements from this cluster significantly more often than men.
For all other professions no significant differences between genders are found.

Monte Carlo significance .003

Item is stated by 27% of all respondents.
Gender split per profession percentage stated is given in table below.

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<thead>
<tr>
<th></th>
<th>men</th>
<th>women</th>
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<tbody>
<tr>
<td>1 Fac</td>
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</tr>
<tr>
<td>2 Soc Sc</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>3 In Man</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>4 Artist L</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>5 Pr Man</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Table: responses in percentage

Chart: responses in percentages

<table>
<thead>
<tr>
<th></th>
<th>men</th>
<th>women</th>
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<tbody>
<tr>
<td>Fac</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soc Sc</td>
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<td>In Man</td>
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<td>Artist L</td>
<td></td>
<td></td>
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<tr>
<td>Pr Man</td>
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<td></td>
</tr>
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</table>

P values of Fisher Exact test

p = .515  p = ----  p = .009  p = ----

274
Item 16B What is minimally necessary to lead an innovative team from the viewpoint of control?

Group Dynamics: trust, openness, good atmosphere, group norms, cohesiveness, mutual respect

For the artistic leaders women mention statements from this cluster significantly more often than men.
For all other professions no significant differences between genders are found.

 Monte Carlo significance .010

Item is stated by 39% of all respondents.
Gender split per profession percentage stated is given in table below.

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<tr>
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<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>2 Soc Sc</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>3 In Man</td>
<td>83%</td>
<td>17%</td>
</tr>
<tr>
<td>4 Artist L</td>
<td>33%</td>
<td>67%</td>
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<tr>
<td>5 Pr Man</td>
<td>100%</td>
<td></td>
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</tbody>
</table>

Table: responses in percentage

Control: Surroundings

![Chart: responses in percentages](chart)

<table>
<thead>
<tr>
<th></th>
<th>Fac</th>
<th>Soc Sc</th>
<th>In Man</th>
<th>Art L.</th>
<th>Pr Man</th>
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<tbody>
<tr>
<td>p</td>
<td>.004</td>
<td>.500</td>
<td>.199</td>
<td>.262</td>
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</tbody>
</table>

p values of Fisher Exact test

Appendix B 4 Gender per Profession 275
Item S B  Conditions/reasons for Success

*Group Dynamics: trust, openness, humour, good atmosphere, informal, happiness, good communication*

For the social scientists women mention statements from this cluster significantly more often than men.

For all other professions no significant differences between genders are found.

Monte Carlo significance .003

Item is stated by 39% of all respondents.

Gender split per profession percentage stated is given in table below.

<table>
<thead>
<tr>
<th></th>
<th>men</th>
<th>women</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Fac</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>2 Soc Sc</td>
<td>0%</td>
<td>100%</td>
</tr>
<tr>
<td>3 In Man</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>4 Artist L</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>5 Pr Man</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

*table: responses in percentage*

![Success: Group Dynamics chart](chart.png)

*chart: responses in percentages*

<table>
<thead>
<tr>
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<th>Soc Sc</th>
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<td>p</td>
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<td>.004</td>
<td>.272</td>
<td>.282</td>
<td></td>
</tr>
</tbody>
</table>

p values of Fisher Exact test
APPENDIX B. 5.

SIGNIFICANT DIFFERENCES FOR ALL RESPONDENTS ON GENDER, AGE AND YEARS OF EXPERIENCE

Significant Differences between Genders for all Professions

Significant differences (α = 0.1) between gender are found in the answers of all respondents on the following items. The items with a correlation coefficient higher than .25 are drawn in charts and designated with the symbol □

Open Question

F.G with a significance of .007, C = .31 □

Conditions/reasons that have led to failure.
cluster Unfit Team Structure: no clear task or responsibility, wrong person in the wrong place, inadequate team composition, inadequate membership changes, wrong or no competence, not the right expertise.

□ Men give more statements in this cluster than women.

Significant Difference between Age Levels for all Respondents

Significant differences (α = 0.1) between age-levels are found in the answers of all respondents on the following items. Presented below are the items with a correlation coefficient higher than rs = .25 (low correlation).

Forced Choice Items

18.d. with a significance of .014, correlation r_s = -.26

How do you as a leader act in order to allow mutual respect to develop in the start-up phase of a team? Opinionated.
□ The tendency is that the younger the leaders are the more they agree with this statement.

20.c. with a significance of .002, correlation r_s = -.34

You as a leader have to establish and maintain clear project objectives.
□ The tendency is that the younger the leaders are the more they agree with this statement.

S.D with a significance of .011, correlation r_s = .26

Conditions/reasons that have led to success.
cluster Motivation: commitment to goal, commitment to group, passion, involvement, belief, interest in work, urgency, positive outlook under stress.
□ The tendency is that the older the leaders are the more they state words from this cluster.

Appendix B.5. Differences all Respondents 277
Significant Differences between Experience Levels for all Respondents

Significant differences ($\alpha = 0.1$) between years of experience are found for all respondents on the following items. The items with a correlation coefficient higher than .25 will be presented below.

**Forced Choice Items**

4.a. with a significance of .002, correlation $r_s = .34$
   In the start-up phase of a team, consisting of forming, storming and norming activities, team members in a successful team are concerned with:
   their position in the group.
   $\Rightarrow\Box$ The tendency is that the more experienced the leaders are the more they agree with this statement.

4.d. with a significance of .014, correlation $r_s = .26$
   In the start-up phase of a team, consisting of forming, storming and norming activities, team members in a successful team are concerned with:
   structure and planning of the project.
   $\Rightarrow\Box$ The tendency is that the more experienced the leaders are the more they agree with this statement.

4.e. with a significance of .004, correlation $r_s = .31$
   In the performing phase of a team, members in a successful team are concerned with:
   whether everybody shows up on appointments.
   $\Rightarrow\Box$ The tendency is that the more experienced the leaders are the more they agree with this statement.

4.f. with a significance of .003, correlation $r_s = .32$
   In the performing phase of a team, members in a successful team are concerned with:
   whether they identify with the team.
   $\Rightarrow\Box$ The tendency is that the more years of experience the leaders have the more they agree with this statement.

**Open Questions**

6.1 with a significance of .017, correlation $r_s = .25$
   How does a team stay inspired?
   cluster Vision: belief, meaning, faith, passion for task, perspective, seeing usefulness, mission.
   $\Rightarrow\Box$ The tendency is that the more experienced the leaders are the more they state items from this cluster.
APPENDIX C  ANALYSIS OF DATA

Analysis of Open Questions

Description Content Analysis in Steps

1. All statements of respondents are randomised.
2. Every statement is written on a separate post-it.
3. Researcher clusters statements in maximally nine clusters.
4. Three judges sort the randomised statements into the found clusters independently.
5. The interreliability score $K$; kappa (Siegel, Castellan, 1988, pg. 284) is calculated.
6. All statements that have no consensus are seen again by the judges and discussed to see whether they can come to consensus. If necessary the researcher provides information on context: what kind of group the respondent belongs to: for instance respondent is an Innovation Manager, or what kind of organisation the person worked in: for instance respondent works in a theatre.
7. $K$ kappa is again calculated. A threshold of $K = .85$ is set in order to consider the Content Analysis valid and useful. If the score is smaller than $K = .85$, the procedure is repeated from point 3. on after a scrutinious analysis of what went wrong.
8. If a respondent scores more than one statement in a cluster the statement that is most specific and articulate is chosen.
9. The clusters are analysed by comparing the percentage of statements of all respondents in every cluster (for content see section 6.4.2).
10. The clusters are analysed further according to the statistical procedure presented below.

Statistics used for nominal data of clusters based on Content Analysis

1. Fisher Exact test for nominal data, correction for double data in every cluster; for difference between professions.
2. Monte Carlo simulation method as replacement of Fisher Exact (SPSS, 1995) was used for nominal data showing significant overall differences between gender within professions;
3. Fisher Exact test was used to identify significant differences between genders analysed per profession.
Analysis of Forced Choice Items

Statistics used for ordinal data for Forces Choice Items
1. Cumulative percentage agreement with expected outcome
2. Kruskal Wallis rank test for differences between professional fields
3. Kruskal Wallis rank test for differences between gender per professional field
4. Spearman Correlation and cross tabs were used for identifying differences between on age categories and categories for years of experience for all respondents.

Statistics used for nominal data forced choice Items
1. Cumulative percentage agreement with expected outcome
2. Fisher Exact test for differences between professional fields.
3. Monte Carlo simulation of Fisher Exact Test for nominal data for differences between gender per professional field.
4. Fisher Exact test for differences between gender for all respondents for nominal data.

Cronbach Alpha
1. Under the assumption that the intervals of the ordinal data are equal a Factor Analysis for summarising items was done in order to find indications for collapsing the ordinal data of the forced choice items.

Factor Analysis on all components > Eigenvalue 1 gave 17 component; three other Factor Analyses were done on 3 components; 8 components and 10 components.

2. Based on the content of the items and on the inferences from the factor analysis a Cronbach Alpha was calculated for different items together. With Cronbach Alfa ≥ .60, four new items could have been created. This analysis was abandoned.
Curriculum Vitae

Helga Hohn (1952) runs her own consultancy Mantra. She also works as a partner with the “Centre for the Development of Creative Thinking” (COCD) in Antwerp and as Lead Tutor Human Resource Management at Henley, Management College Nederland. She completed her study of clinical psychology at the Rijksuniversiteit Leiden and subsequently worked for both profit and non-profit organisations as a trainer, lecturer, consultant and previously as a psychotherapist. In 1994 she started the research of this thesis on leadership of innovative teams. In the thesis reflections from the domains of developmental psychology, group dynamics and creativity are contrasted with the perceptions of experienced leaders of innovative teams. As a lecturer, trainer and author of various publications, Helga works nationally and internationally in the domain of creativity, innovative teams and team development, organisational learning and change management.