

**Group processes in short- and long-term
psychodynamic group psychotherapy**

Jan Vegard Bakali

Institute of Clinical Medicine

Faculty of Medicine

University of Oslo

2013

© **Jan Vegard Bakali, 2013**

*Series of dissertations submitted to the
Faculty of Medicine, University of Oslo
No. 1485*

ISBN 978-82-8264-577-5

All rights reserved. No part of this publication may be reproduced or transmitted, in any form or by any means, without permission.

Cover: Inger Sandved Anfinssen.
Printed in Norway: AIT Oslo AS.

Produced in co-operation with Akademika publishing.
The thesis is produced by Akademika publishing merely in connection with the thesis defence. Kindly direct all inquiries regarding the thesis to the copyright holder or the unit which grants the doctorate.

Table of contents

Acknowledgements	6
Summary	8
List of papers	10
Abbreviations	11
1. Introduction	13
1.1 Group psychotherapy	13
1.1.1 Therapeutic factors	14
1.1.2 Small group research	15
1.1.3 Efficacy	15
1.1.4 Group length	17
1.1.5 Theoretical orientation	17
1.1.6 Patient characteristics	18
1.2 Group processes	18
1.2.1 Working Alliance	21
1.2.2 Cohesion	23
1.2.3 Group climate	26
1.3 Comparing concepts of group processes	28
1.3.1 Alliance and cohesion	28
1.3.2 Modeling group process constructs	29
1.3.3 Present challenges	30
1.4 Influences on processes in groups	31
1.4.1 Therapist influences	31
1.4.2 Group influences	33
1.4.3 Patient influences	33

1.5 Group development	34
1.5.1 Theories of stage progression	34
1.5.2 Empirical support	36
1.6 Methodological issues	37
2. The aims of the present study	39
2.1 The dimensions of group processes	39
2.2 The sources of influence on alliance and cohesion	39
2.3 Group climate development	39
3. Material and Methods	41
3.1 Participants	41
3.2 Therapies	43
3.3 Measures	45
3.3.1 Working Alliance Inventory – Short Form	45
3.3.2 Therapeutic Factors Inventory, subscale Cohesiveness	46
3.3.3 Group Climate Questionnaire – Short Form	46
3.4 Procedures	48
3.5 Analyses	49
3.5.1 Study I	49
3.5.2 Study II	50
3.5.3 Study III	52
4. Results	54
4.1 Summary of Paper I	54
4.2 Summary of Paper II	54
4.3 Summary of Paper III	55

5. General discussion	57
5.1 Discussion of methods	57
5.1.1 Study design	57
5.1.2 Sample	58
5.1.3 Therapies	60
5.1.4 Measures	61
5.1.5 Analyses	64
5.2 Discussion of results	66
5.2.1 Towards a model of group process constructs	66
5.2.2 Alliance and cohesion in group psychotherapy	70
5.2.3 Suggestions for model improvement	74
5.2.4 Group development: The significance of time	79
5.2.5 Negative relationship processes	83
5.2.6 Short-term versus long-term group psychotherapy	85
6. Conclusions	86
7. References	89
8. Papers I-III	106
9. Appendix	
The Working Alliance Inventory – Short Form	
The Therapeutic Factors Inventory, Cohesiveness scale	
The Group Climate Questionnaire – Short Form	

Acknowledgements

The present thesis is the product of many peoples combined efforts. I would like to thank Professor Steinar Lorentzen, who has been my first supervisor, co-author, leader, and research colleague. He is the founder and leader of this research project on short- and long-term psychodynamic group psychotherapy, of which my contribution on group processes is a part. When I entered the project early autumn of 2006, the design and operationalizations were already defined, funding was established, most patients had been included, groups were running, and data-materials were ticking in. Thanks to the preliminary efforts of Dr. Lorentzen and his research group, much of the “hard work” of the research was covered before my entrance. It has been a privilege to participate in such a well planned and conducted project, within a field of research where investments are much needed. Dr. Lorentzen’s experience both in clinic and research has helped me to better understand the complexity of group therapy processes, and his always effortful and thorough supervision on manuscript sketches has been of great value. I have also appreciated the opportunity given to meet national and international colleagues of psychotherapy research.

I am also very thankful to the contribution of my second supervisor and co-author, Professor Theresa Wilberg. Our collaboration was established for the second half of the time-period, when supplementary efforts in helping me towards completion of this work were needed. The experience and insight of Dr. Wilberg has been a great contribution in this process.

One of the more challenging aspects of conducting research is the complexity of statistical methodology involved. Therefore, collaborations with experts of statistical methodology have been a necessity. Professors Scott A. Baldwin and Knut A. Hagtvet, and Master of Science Ole Klungsøyr were co-authors of Paper I, Paper II, and Paper III, respectively, and they all

gave essential contributions to these manuscripts. They were also helpful by offering general guidance and supervision along the way.

I would also like to thank First Secretary Ørjan Berg and Librarian Signy Soelberg for the many instances of practical help along the way. Also, the regular research meetings at Oslo University Hospital have been an important arena for learning. A special thank also to the efforts of the many patients and therapists involved.

I would like to thank Helse Øst RHF for a grant in 2004-07 that made this project possible, as well as the Oslo University Hospital and the University of Oslo for financial support along the way. I am also in debt to my present employer Lovisenberg Diakonale Hospital for according financial support and leave in the finishing stage.

Finally, I am especially thankful to my dear family, Merete, Frida, and Sigurd, who has patiently offered me the time and space needed to complete this work.

Summary

This thesis examined the processes of alliance, cohesion, and group climate in a sample of 145 patients attending 9 short-term (20 sessions) and 9 long-term (80 sessions) psychodynamic psychotherapy groups. Concepts were operationalized through the Working Alliance Inventory – Short Form (WAI-S), the Therapeutic Factors Inventory, subscale Cohesiveness (COH), and the Group Climate Questionnaire – Short Form (GCQ-S). Three waves of data collection were applied for the measurement of alliance and cohesion (sessions 3, 10, and 17), whereas five time-points were used in the measurement of group climate development (sessions 3, 10, 17, 39, and 77).

Study I examined the interrelatedness of alliance, cohesion, and group climate (GCQ-S). Five hypothesized models of group processes were tested early in therapy using multilevel confirmatory analyses. The two three-factor models that approached conventional standards of model fit were merged, and a three-factor model consisting of *member-leader alliance*, *positive bonding relationship*, and *negative relationship* fit the data well. Later in therapy, the bonding between member and leader was no longer important for the member-group bonding, and the model was then better described as *member-leader alliance*, *member-group cohesion*, and *negative relationship*. Results indicated that the processes of alliance and cohesion, and the member-leader versus the member-group relationship structure, evolve as different processes of psychodynamic group psychotherapy. There were no differences in factor structure relative to group format (short-term, long-term).

Study II examined the sources of influence on alliance and cohesion. Within the framework of generalizability theory the 14 variance components identifiable by the research design were estimated. Results indicated that patient variability was the strongest clinically relevant contribution to both alliance and cohesion. Therapists were important for alliance through all the measured stages, but for cohesion only in the middle stage. The therapist x

group interaction accounted for a substantial proportion of alliance variability early in therapy and for cohesion variability within the first two stages, but this contribution then decreased. Group length did not account for any of the variance in alliance or cohesion measures.

Study III examined the development of group climate (engagement, avoiding, and conflict) in short- and long-term groups. Linear mixed models were used to compare changes in group climate over time. The development of engagement was similar in the two psychotherapy formats. During the first 18 sessions, conflict and avoidance decreased toward the termination of the short-term groups, in contrast to an increase in this still-early stage of the long-term groups. When compared according to the stages of therapy (early, middle, and late), a low-high-low pattern for conflict and avoidance emerged in both psychotherapy formats, with a stronger decrease toward termination in long-term groups. Results suggest an accelerated progress of group climate development within short-term groups, compared to a delayed but strengthened process development in long-term groups.

List of papers

I

Bakali, J. V., Baldwin, S. A., & Lorentzen, S. (2009). Modeling group process constructs at three stages in group psychotherapy. *Psychotherapy Research, 19*(3), 332-343.

II

Bakali, J. V., Wilberg, T., Hagtvet, K. A., & Lorentzen, S., (2010). Sources accounting for alliance and cohesion at three stages in group psychotherapy: Variance component analyses. *Group Dynamics: Theory, Research, and Practice, 14*(4), 368-383.

III

Bakali, J. V., Wilberg, T., Klungsøyr, O., & Lorentzen, S. (in press). Development of group climate in short- and long-term psychodynamic group psychotherapy. *International Journal of Group Psychotherapy*.

Abbreviations

CFA	Confirmatory factor analysis
COH	Cohesiveness subscale of the Therapeutic Factors Inventory
CORE R	Clinical Outcome Results Standardized Measures – Revised Version
GCQ	Group Climate Questionnaire
GCQ-S	Group Climate Questionnaire – Short Version
LTG	Long-term groups
MINI	Mini International Neuropsychiatric Interview
PD NOS	Personality disorder not otherwise specified
SCID II	Structured Clinical Interview for DSM-IV Axis II Personality Disorders
STG	Short-term groups
TFI	Therapeutic Factors Inventory
TFI; COH	Therapeutic Factors Inventory; subscale Cohesiveness
WAI	Working Alliance Inventory
WAI-S	Working Alliance Inventory – Short Version

1. Introduction

1.1 Group psychotherapy

During the first half of the 20th century there was an increase of interest in how individual human behavior was influenced by the forces of group membership. Observations had been made of the potential of groups to positively (McDougall, 1920) or destructively (LeBon, 1920) influence individual actions and systematic theories were established to describe the complex activity of groups (Bales, 1950; Lewin, 1935). Basically, the study of groups falls under the rubric of *group dynamics*, a term advanced by Kurt Lewin (1935) to describe what he believed was the two most principal group components or forces: (a) cohesion: the maintenance and development of the group, and (b) locomotion: the activity by which the group seeks to achieve its objectives. Still today these remain core perspectives in the understanding of group processes (Carron, Widmeyer, & Brawley, 1985).

Group psychotherapy as a method of treatment seeks to extract the potential of positive influences that groups can affect on its members in order to regain health or function. Although most widely used in the field of mental health, the first known group intervention documented was within somatic medicine. Even at this early stage of group therapy a key process for later research was anticipated since "...the patients seemed to have a bond in a common disease" (Pratt, 1907, p. 758). Subsequently, the extraordinary need for mental health services in post-war Europe in the 1940s boosted the experimentation with the group format, and several models of group therapy emerged. There was a common belief within these approaches that the context of the group was psychotherapeutic in its own right (Bennis & Shepard, 1956; Bion, 1960; Foulkes, 1948), and "...not merely a 'watered down' version of individual therapy" (Burlingame, Fuhrman, & Johnson, 2001, p. 373). Many divergent formats find their home under the rubric of group psychotherapy. In an organizing attempt,

Ward (2012) suggested a division between (a) psycho-educative groups, (b) counseling groups, and (c) psychotherapy groups. Of these categories, the present research concerns the latter.

1.1.1 Therapeutic factors

The potential of curative influences on participants in group psychotherapy are commonly termed *therapeutic factors* (Yalom & Leszcz, 2005). Generally the sources of such factors may be therapists, other group members, or the individual; influences can be both intra- or interpersonal of nature; and contributions may be predominantly affective, cognitive, and/or behavioral (Crouch, Bloch, & Wanlass, 1994). The factors of insight, catharsis, reality testing, hope, disclosure, and identification are shared with individual therapy, whereas the factors of vicarious learning, role flexibility, universality, altruism, family reenactment and interpersonal learning are thought to be exclusive to the group format (Fuhriman & Burlingame, 1990). The unique supportive elements of sharing similar experiences, receiving acceptance from fellow group members, and getting the opportunity to help others, often function as an antidote to isolation and a boost to the experience of self-worth and self-esteem for the group members (MacKenzie, 1998). Recently, attempts have been made to describe the therapeutic factors more economically, since some of the original factors overlap somewhat in content and their relative importance may be unbalanced (Crouch et al., 1994). Thus, the processes of (a) instillation of hope, (b) secure emotional expression, (c) awareness of relational impact, and (d) social learning, has been suggested as summarizing the more global characteristics of therapeutic factors (Joyce, MacNair-Semands, Tasca, & Ogrodniczuk, 2011; MacNair-Semands, Ogrodniczuk, & Joyce, 2010).

From a clinical strategic perspective, the therapists of group psychotherapy will need to attend as much to the level of the group-as-a-whole as to the level of the individual member in order to contribute to the evolvment of therapeutic factors (Burlingame et al., 2001). By

contributing to the activation of group resources and the development of group climate the influence from therapists to outcome is more of an indirect mechanism in group psychotherapy (Kivlighan & Tarrant, 2001; Yalom & Leszcz, 2005), since other members are believed to be the major source of change for group participants (Crowe & Grenyer, 2008; Foulkes & Anthony, 1965; Holmes & Kivlighan, 2000; Yalom & Leszcz, 2005).

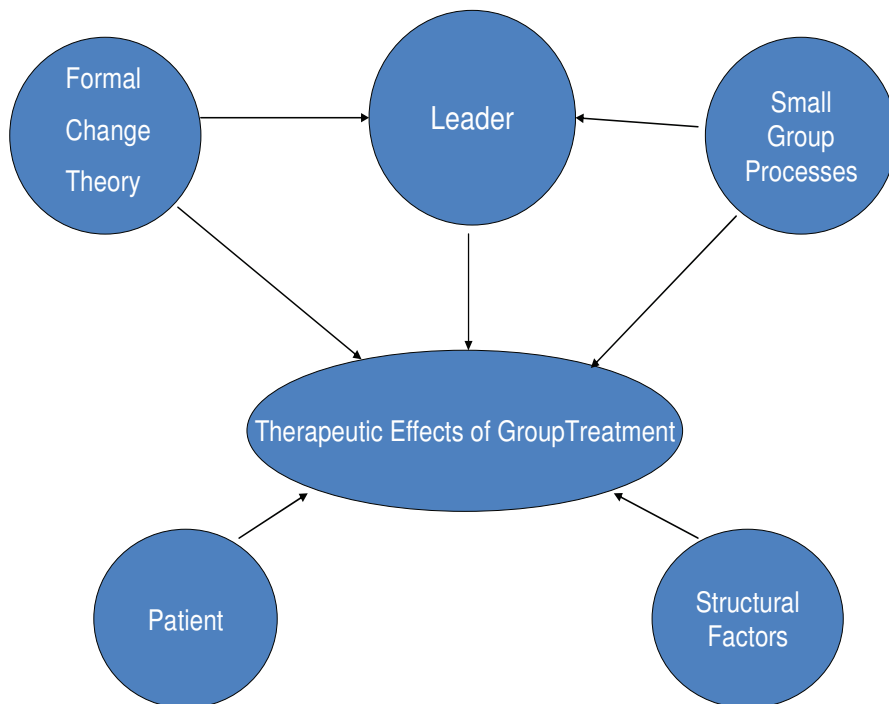
1.1.2 Small group research

In an attempt of organizing the field of small group research, Burlingame, MacKenzie, and Strauss (2004) summarized the main components of interest: (I) Formal change-theory (cognitive, psychodynamic, interpersonal, etc.), (II) Small group process (developmental stages, therapeutic factors, interpersonal feedback, etc.), (III) Leader (therapist characteristics, etc.), (IV) Patient (demographics, length of education, personality, diagnosis, etc.), (V) Structural factors (treatment duration, frequency and length of sessions, group size, etc.). All of these components contribute to the sixth component; (VI) Therapeutic effects of group treatment (see Figure 1), and may also mediate or moderate (Baron & Kenny, 1986) whether certain relationships between variables are valid. Relating to this map of small group research, the current thesis has a main focus on II (process), and V (structure), since the processes of alliance, cohesion, and group climate are examined at several time-points (II) within the context of short- and long-term (V) group psychotherapy. The theoretical orientation (I) was applied as a constant factor (psychodynamic), and the leader component (III) was controlled by letting each therapist conduct one short-term and one long-term group each (Kendal, Holmbeck, & Verduin, 2004). The patient sample (IV) included was heterogenous relative to most variables of clinical significance (e.g., diagnose, personality, age).

1.1.3 Efficacy

The research on the outcome of group psychotherapy generally concludes that the format is equally effective compared to individual psychotherapy in the treatment of mental disorders

Figure 1. Forces that govern the therapeutic outcomes of group psychology.



Burlingame, MacKenzie, & Strauss, 2004

(Burlingame, 2010; McRoberts, Burlingame, & Hoag, 1998), and that this conclusion holds for a diversity of clinical populations (DeLucia-Waack, Gerrity, Kalodner, & Riva, 2004). These statements are valid on the aggregate level, and more studies are needed to conclude on the interaction of format (individual vs. group) by specific diagnoses. That is, it may be that the group format produces more therapeutic gain than the individual format for some mental disorders, and vice versa. It is one of the current trends in psychotherapy research to elaborate these contexts more thoroughly (Burlingame et al., 2004).

1.1.4 Group length

In group psychotherapy, the middle and late stages of short-term therapy are believed to be more distinct as time periods contrasted to the therapeutic experience in the open-ended or long-term format (Been & Winston, 1998). Moreover, one study has indicated that the emergence of processes in short-term groups may be *accelerated*, both as a function of the time-limitation and as a result of the increased activity by therapists often present within that format (Joyce, Azim, & Morin, 1988). The significance of therapy length for the outcome of group therapy has to a little degree been studied systematically. Most of group therapy research is on short-term groups, and comparisons of short-term vs. long-term group psychotherapies are almost non-existent (Shapiro, 2012). One exception was found that favored the long-term format in producing outcome for group participants (Piper, Debbane, Bienvenu, & Garant, 1984). With respect to individual therapy, one large clinical study has indicated that the length of individual psychotherapy seems to be a better predictor of therapeutic gain than is theoretical orientation (Knekt, Lindfors, Härkänen, Välikoski, Virtala, Laaksonen, Marttunen, Kaipainen, & Renlund, 2008). A contribution from the present research is a direct comparison of processes in short- and long-term group psychotherapy through a RCT design.

1.1.5 Theoretical orientation

Traditionally, the typical theoretical orientation of group therapists has been psychodynamic or interpersonal, with the more structured cognitive behavioral approaches of group psychotherapy becoming increasingly common the later decades. Tasca, Balfour, Ritchie, and Bissada (2006) observed different patterns of group climate when comparing psychodynamic oriented groups with cognitive-behavioral groups for binge-eating disorder, since group cohesion (engagement) increased linearly across stages in the cognitive-behavioral groups in contrast to a cubic pattern of development (low-high-low-high)

identified in the psychodynamic groups. It may be that the interpretative interventions on dysfunctional interpersonal patterns experienced by group members of psychodynamic groups interrupts the linear increase of cohesion found in the CBT groups, where a more collaborative interaction is typical.

1.1.6 Patient characteristics

Different characteristics of patient samples may also moderate processes in groups. Several studies have demonstrated that the more severe psychological disturbances are associated with poorer alliances in therapy (Piper, Azim, Joyce, McCallum, Nixon, & Segal, 1991; Lindgren, Barber, & Sandahl, 2008), at least in the early stage (Budman, Soldz, Demby, Feldstein, Springer, & Davis, 1989). Moreover, Sarol-Kulka (2001) compared the processes in groups of patients with personality disorders with groups of patients with neurotic disorders, and was only able to demonstrate developmental stages in the latter. The former groups were continuously occupied with the handling of crises, which may have inhibited regular progress. The empirical basis for several important theoretical models of group processes partly rests on studies of non-clinical or counseling groups (e.g., Johnson, Burlingame, Olsen, Davies, & Gleave, 2005; MacKenzie, Dies, Coché, & Stone, 1987). The present thesis adopts a well described clinical sample of regular outpatients attending short- and long-term group psychotherapy.

1.2 Group processes

Knowledge of therapeutic processes is essential for the interpretation of change mechanisms and outcome (Fuhriman, Drescher, & Burlingame, 1984). At a general level, most clinicians and researchers would agree that group processes are complex. Beck and Lewis suggested the following definition of process research for group psychotherapy:

“Process research on group psychotherapy is the study of the group-as-a-whole systems and changes in its development, the interactions within the patient and therapist subsystems, the patient and patient (dyadic or subgroup) subsystems, the therapist and therapist subsystem if there are coleaders, and the way each of the subsystems interacts with and is influenced by the group as a whole” (Beck & Lewis, 2000, p. 8).

Evident from this definition are several interacting sources contributing to group processes.

- (I) Multilevel organization: The individual, dyad/subgroup, and the group-as-a-whole are levels hierarchically organized and may be understood as different subsystems within groups.
- (II) Roles/relationship: Within psychotherapy groups there are usually two different formal roles/agents: patient and therapist (also termed member and leader).
- (III) Development. The very nature of the concept of process implies a movement through time.

Changes in process can appear *within* each subsystem or *between* subsystems where both intra- and interpersonal processes interact over the passage of time (Agazarian & Janoff, 1993; MacKenzie, 1997a). From the perspective of complex systems theory the causal relations are multivariate, bidirectional, and nonlinear at the level of local dynamics (McGrath, Arrow, & Berdahl, 2000). These elements of multilevel organization, roles and relationships interacting across time may be termed the framework, or structure, of group processes.

A strategy of further organizing the structure of group processes has been to identify the different categories of *relationships* within group psychotherapy. By combining the two formal roles in the group (member and leader) and the two basic levels of organization (individual level and group level) the relationships within the group may be termed *member-member*, *member-leader*, or *member-group* relationships (Burlingame et al., 2001). A recent trend in group process research has been to study interactions and processes along several relationship dimensions simultaneously (e.g., Johnson et al., 2005; Pinosof & Catherall, 1986).

The focus is then on the overall qualities attributed to the relationship between members, which goes beyond any particular act, episode, or content (Greenberg, 1986). In effect, this strategy of organization offers a more *global* perspective to the complexity of group dynamics. The importance of studying the structure of therapeutic relationships is supported by its impact on outcome. Norcross and Lambert (2011) summarized that therapeutic relationship accounts for 12% of the outcome variance in psychotherapy research, which is more than the effect attributable to treatment method (8%) and the effect of therapists (7%).

The typical study of group processes, however, focus on the *content* of relationships in the group, either through the individual experiences (e.g., identification, sense of belonging), the more global group characteristics or climates (e.g., group cohesion, level of conflict), or as behavioral patterns (e.g. self-disclosure and feedback). One of the main challenges in the field today is to integrate research on the relationship content of group processes into a general framework or structure. The current thesis is an attempt to contribute to this endeavor.

Historically, there has been a myriad of measurement instruments applied to group therapy research, and it has been difficult to compare group psychotherapy studies directly. The research and methodological literature has neither been cumulative nor integrated (Burlingame, Kircher, & Taylor, 1994), and a recent review concluded that "...the study of group processes continues to lack cohesion" (Burlingame et al., 2004, p. 666). However, over the recent years group therapy researchers from North America and Europe have developed the CORE (Clinical Outcome Results Standardized Measures) battery (Strauss, Burlingame, & Bormann, 2008), which in its revised version recommends selected measures for (a) group selection and preparation, (b) assessing group processes, and (c) assessing member outcomes (CORE R; Burlingame, Strauss, Joyce, MacNair-Semands, MacKenzie, Ogrodniczuk, & Taylor, 2006). Through the use of a commonly accepted test battery, current and future

research on group psychotherapy may be easier to compare and the field can to a larger degree accumulate knowledge.

The most frequently studied concepts of group processes during the last decades are alliance, cohesion, and group climate (Burlingame et al., 2004; Marmarosh & Van Horn, 2012), and measures of these concepts are also the most central for assessing group process in the CORE R (Strauss et al., 2008). The question of what measures to select for the battery was partly answered through a conceptual model developed to describe the most central dimensions of group processes; *positive working relationship*, *positive bonding relationship*, and *negative relationship* (Johnson et al., 2005). Although this study has been central for the advancement of group process research, there are two serious limitations concerning its generalizability: (a) the sample used was a combination of non-clinical and counseling groups; this is problematic since one of the main targets for utilizing the CORE R are clinicians treating regular patients, and, (b) it examined the factor structure of the model at just one point in time; this underestimates the *development* of groups as an essential characteristic for understanding processes. The present research addresses these limitations by replicating the Johnson et al. study on a purely clinical sample across several time-points in group psychotherapy (Study I).

The concepts of working alliance, cohesion and group climate are presented in more detail below.

1.2.1 Working alliance

The *working alliance*¹ has been recognized as the most central therapeutic process in the field of individual psychotherapy. Although dyadic in its original definitions, the concept has later been applied to the group format. The processes of group psychotherapy with its multiple relationships are clearly more complex than the two-person processes of individual

¹ Synonymous with *therapeutic alliance*, *helping alliance*, and *alliance*.

psychotherapy, and it has been a challenge for group psychotherapy researchers to specify theoretically and empirically how the alliance operates within groups.

The concept of therapeutic alliance was originally developed within the psychoanalytical tradition to describe an atmosphere of collaboration between analysand and analyst in the therapeutic work. It included both an agreement on “how to work”, as well as an element of positive emotional relationship (Greenson, 1967). Within the psychodynamic theoretical framework, the therapeutic alliance has been considered to represent a part of the “real” relationship between patient and therapist, although it has been a source of discussion how alliance intertwine with the so-called transference neurosis (Been & Winston, 1998; Bordin, 1994), where clients perceive and experience the therapist in light of their early interpersonal patterns.

It was the work of Bordin (1979) that brought the concept of working alliance into a wider application and theoretical recognition as he suggested the alliance as the most important key to change in *all* psychotherapies. Consequently, the concept of working alliance became pantheoretical. Bordin included three features of collaboration between patient and therapist: (a) an agreement on goals, (b) an assignment of task or a series of tasks, and (c) the development of bonds (1979; p. 253). Bordin described task, goal, and bond as related and as interactive aspects of the alliance. Furthermore, the relative importance of goals, tasks and bonds was expected to vary across different therapies and across different phases in therapy.

There are many measures of alliance in use but the different operationalizations have a lot in common. In a review of alliance theory and research, Horvath and Bedi (2002) reported that cross-scale comparisons of the four most important measures (Penn Helping Alliance, Vanderbilt Therapeutic Alliance Scale, Working Alliance Inventory, and California-Toronto scales) revealed medium to high intercorrelations. Most commonly, the alliance is subdivided into a bonding dimension (represented by a warm, supportive, and accepting relationship),

followed by a working dimension (represented by a sense of collaboration, participation, and sharing of responsibilities). In the Working Alliance Inventory (WAI; Horvath & Greenberg, 1989), which is the most frequently used measure; work is even further subdivided into task and goal, parallel to Bordin's theory. However, when it comes to the perspective of the rater, Tichenor and Hill (1989) found that clients, therapists and observers did not agree on what working alliance was when rating the WAI, indicating that measures from different perspectives are not interchangeable. The present thesis applies patient ratings of the short version of the WAI (WAI-S; Tracey & Kokotovic, 1989).

There is a general consensus that the alliance between patient and therapist is the most robust predictor of therapeutic gain in individual psychotherapy (Muran & Safran, 1998), where several meta-analyses have indicated a moderately strong and highly reliable relationship between alliance and psychotherapy outcome (Horvath & Bedi, 2002; Horvath, Del Re, Flückiger, & Symonds, 2011; Martin, Garske, & Davis, 2000). The alliance-outcome relationship has been empirically supported as valid also for the group psychotherapy format (e.g., Budman et al., 1989; Joyce, Piper, & Ogrodniczuk, 2007; Marziali, Munroe-Blum, & McCleary, 1997), although some authors argue that the relationship is less strong in the group format compared to individual psychotherapy (Crowe & Grenyer, 2008).

1.2.2 Cohesion

Cohesion is generally viewed as the most important of the group level concepts in group psychotherapy (Burlingame et al., 2001) and is also the most frequently studied (Marziali et al., 1997). Cohesiveness represents an essential characteristic of successful therapy groups that both facilitate therapeutic processes and ultimately therapeutic gain. Despite the central position of cohesion, both clinically and in research, a univocal definition of cohesion has been hard to reach. At the core of the definitional challenges is the complexity of the group format, with its multiple relationships (member-member, member-leader, member-group),

levels (individual level, subgroups, group level), and contents (e.g. tasks/goals, social-emotional bonding), as well as the multiple perspectives available for process observation (member, leader, observer).

The early definitions of cohesion focused on the capability of a group to survive the internal and external challenges to the group's existence, or *the willingness to stick together* (Lewin, 1935). This consolidating "energy" of group dynamics was a characteristic of the group as a whole, and was either defined directly as *the total field of forces* which act on members to remain in the group, or indirectly as the *resultants* (effects) of such forces, or as *the resistance of a group to disruptive forces* (Dion, 2000; Gross & Martin, 1952; Festinger, 1950). One immediate challenge with these earlier definitions was that they were difficult to operationalize, and so attempts were made to measure cohesion indirectly as the attractiveness of the group for its members and as the extent to which the group mediated goals for its members. However, this strategy was soon to be criticized for measuring a group-level concept on an individual or interpersonal level (Dion, 2000; Mudrack, 1989). Several authors have argued that attraction-to-group is a lower level of abstraction than group cohesion and that it is necessary to differentiate between the two (Evans & Jarvis, 1980; van Bergen & Koekebakker, 1959).

These early definitional challenges anticipated later attempts of describing cohesion as a multidimensional construct. The two most common dimensions used in cohesion research is the division between individual level and group level cohesion (e.g. Carron et al., 1985), and the division between the task-related and the affective aspects of cohesion (e.g. Budman et al., 1989; Zaccaro, 1991). However, other dimensions have also been suggested: horizontal (member-member) vs. vertical (member-leader) cohesion (Griffith, 1988), and subjective vs. objective cohesion (Bollen & Hoyle, 1990). Also factors of (a) the behavior of risk-taking and self-disclosure within the group and (b) the instrumental value of the group for its members

(Braaten, 1990, Stokes, 1983a; Stokes, 1983b) have been proposed in some models. Although promising for the refinement of the cohesion construct, the challenge inherent in the multidimensional approaches is that different models present different factors. The research on uni- and multidimensional models is not conclusive (Cota, Evans, Dion, Kilik, & Longman, 1995; Marmarosh & Van Horn, 2012).

Definitions of cohesion also differ according to which relationship it appears in. MacKenzie and Tschuschke (1993) had a member-to-group definition, Budman et al. (1989) had a member-to-member application, and Sexton (1993) focused on the member-to-leader dimension. Recently, some researchers let cohesion apply to all of these relationships within groups (Burlingame, Fuhrman, & Johnson, 2002; Johnson et al., 2005). Thus, not all researchers apply cohesion as a process exclusive to the *group level* of dynamics.

In spite of the attempts of describing cohesion as multidimensional, the narrower one-dimension approach has been at least equally influential in the later decades. Here, cohesion is defined as a “basic bond” in groups (Piper, Marrache, Lacroix, Richardsen, & Jones, 1983), where the socio-emotional climate between members along with a sense of belonging is the “uniting force”. A consequence of this definition is that the experiences, feelings, and behaviors of individual members become relatively more central in defining cohesion than are group level characteristics.

As might be expected, the diversity of definitions of cohesion is also reflected in a diversity of operationalizations, and no single measure has been accepted as a standard by the field (Cota et al., 1995). On a general level, the perspective of the rater is of special importance in cohesion research (Johnson, 2007). This is partly because the perspective of the group member, the group leader, or a group observer does not necessarily correspond. And equally important; the behaviors or characteristics that are rated will need to correspond to the definition of cohesion at hand. Specifically, when defining cohesion as a group level

characteristic, you will need to rate the group as an entity (Budman, Soldz, Demby, Davis, & Merry, 1993; Evans & Jarvis, 1980). Alternatively, if defining cohesion more as an intra- or interpersonal phenomenon, the individual experiences and behaviors of group members will be more relevant (Piper et al., 1983). Cohesion research has often been criticized when data from individuals has been aggregated to draw conclusions about processes occurring at the group level (e.g. Mudrack, 1989). The operationalization of cohesion used in the current research defines cohesion (a) as a socio-emotional dimension (b) at the group level (c) rated by each of the individual members (Therapeutic Factors Inventory, subscale Cohesiveness; Lese & MacNair-Semands, 2000), concurrent to the majority of cohesion measures of today (Marmarosh & Van Horn, 2012).

Most studies and reviews have concluded that cohesion contributes to the therapeutic outcome in therapy groups (Bonsaksen, Lerdal, Borge, Sexton, & Hoffart, 2011; Burlingame et al., 2001; Crowe & Grenyer, 2008; Evans & Dion, 1991; Marmarosh & Van Horn, 2012; Taube-Shiff, Suvak, Antony, Bieling, & McCabe, 2007), including the most recent and comprehensive meta-analysis (Burlingame, McClendon, & Alonso, 2011). However, there are also examples of studies indicating more mixed results (e.g. Joyce et al., 2007; Marziali et al., 1997), and some authors have questioned the consensus of the cohesion-outcome relationship within the field (Hornsey, Dwyer, & Oei, 2007; Stokes, Fuehrer, & Childs, 1983), "...when a careful reading of the published evidence suggests that the story is not so simple" (Hornsey et al., 2007, p. 585). Given the definitional challenges and the multiple operationalizations of cohesion, the differences found in studies on the cohesion-outcome relationship may to some degree be expected (Johnson, 2007).

1.2.3 Group climate

The concept of *group climate* aims to describe the therapeutic climate, or atmosphere, within groups. In the precursor concept of *group atmosphere*, a core assumption is that

psychosocial environments are important in shaping individual behavior, and instruments were developed to measure the atmosphere in wards and groups (Silbergeld, Koenig, Manderscheid, Meeker, & Hornung, 1975). Yalom's description of therapeutic factors within groups was another source of inspiration to determine the content of group climate (Yalom & Leszcz, 2005). Most contributing to the development of the concept was the work of K. Roy MacKenzie (MacKenzie, 1981; MacKenzie, 1983; MacKenzie & Livesley, 1983) who defined three dimensions of group climate: *engagement*, *avoiding*, and *conflict*. Engagement is related to the concept of cohesion and also describes a positive working atmosphere; avoiding describes the reduced responsibility by the members for their own change process; and conflict deals with interpersonal conflict and distrust within groups. Through the operationalization of these concepts (Group Climate Questionnaire; MacKenzie, 1981; 1983), the three dimensions were demonstrated to operate as relatively independent group processes in these early studies. However, there was a tendency of Engaged and Avoiding to correlate negatively; Avoiding and Conflict to correlate positively; whereas Engagement and Conflict did not correlate (except for a negative correlation early in therapy; MacKenzie, 1983). And most importantly, there were variations in levels of the respective dimensions over time. GCQ-S could thus be used to identify developmental stages. Group climate is either expressed as the relative *pattern* of the three dimensions at points in time (stages) or as the *development* of each of the dimensions over time. It is an aggregate assessment which takes into account the behavior of all members. The results may be recorded either as individual members' impressions of the group or averaged into a group score based on the opinions of all the members.

With respect to therapeutic gain, Kivlighan and Lilly (1997) found that groups with a high level of cohesion and a low level of avoidance at mid-treatment had more favorable outcomes, and also that a low-high-low pattern of conflict across early, mid, and late therapy,

respectively, was associated with more positive outcomes. Similar observations have been reported in other studies (Castonguay, Pincus, Agras, & Hines, 1998; MacKenzie et al., 1987; Phipps & Zastowny, 1988). Thus, the mechanisms by which members manage to solve the conflicts that characterize the second stage seem to be important, and groups that do not overcome these interpersonal challenges tend to be less useful for the members (MacKenzie et al., 1987). Several other studies have measured the levels of the three group climate dimensions without measuring patterns or development, and these studies reveal more inconsistent results (Kivlighan & Tarrant, 2001).

1.3 Comparing concepts of group processes

As the field of group psychotherapy research has added the concepts of alliance, cohesion, and group climate into the theoretical “pool” of group processes, the question of how these processes *interrelate* theoretically and empirically have been increasingly important. Initially, several studies examined and compared alliance and cohesion. Later, attempts have also been made to describe a general model for processes in group psychotherapy.

1.3.1 Alliance and cohesion

Although therapeutic alliance and group cohesion have been established as the most important concepts describing positive processes in group psychotherapy (Bernard, Burlingame, Flores, Greene, Joyce, Kobos, Leszcz, MacNair-Semands, Piper, Slocum-McEaney, & Feirman, 2008), many issues concerning the theoretical and empirical relationships between these two processes are still unsettled (Johnson, 2007). Theoretically, several authors have argued that cohesion and alliance are equivalent concepts (Fuhriman & Burlingame, 1990), in that cohesive groups consist of multiple alliances across all of the within-group relationships (Burlingame et al., 2002). Others researchers differentiate, arguing

that cohesion is a more complex process than alliance (Joyce et al., 2007; Marziali et al., 1997).

Empirically, several studies have explored the interrelations between cohesion and alliance in group psychotherapy. Different degrees of overlap between cohesion and alliance have been reported, including weak to moderate (Joyce et al., 2007; Lorentzen, Sexton, & Høglend, 2004), moderate (Marziali et al., 1997), moderate to strong (Gillaspy, Wright, Campbell, Stokes, & Adinoff, 2002; Johnson, et al., 2005), and strong (Budman et al., 1989). However, all of these studies defined and measured cohesion and alliance in different ways, thereby complicating comparisons of results. Variations occur as to whether alliance and cohesion (a) included either working or bonding processes, or both, (b) operated within the relationships of member-member, member-leader, member-group, or combinations of these, or (c) in whether the measures were rated by patients, therapists, or independent observers. Differences in operationalizations and results are presented a table in Paper I (Bakali, Baldwin, & Lorentzen, 2009, p. 334).

1.3.2 Modeling group process constructs

Recently, a general model for group therapy processes has been proposed (Johnson et al., 2005). Based on several commonly used process measures (alliance, cohesion, group climate, empathy), and by using a combination of exploratory and confirmatory factor analysis, Johnson and colleagues (2005) determined that three factors accounted for the relationship between these processes. The *positive bonding relationship* factor encompassed group cohesion, engagement, and the emotional bond between patient and therapist, thus describing all of the socio-emotional aspects of the therapeutic relationships in groups. Engagement and cohesion loaded on the same factor, and thus supported the argument that these concepts are quite similar, as often has been suggested theoretically (e.g., Kivlighan & Lilly, 1997). The *positive working relationship* factor included the agreement on therapeutic tasks and goals

between patient and therapist. The fact that the third sub-element of the working alliance, bond, had loaded on the positive bonding factor in this study might indicate that the conceptual division between working and bonding therapeutic processes is primary to the division between alliance and cohesion, when these measures are used simultaneously in groups. The *negative relationship* factor included conflict and distrust. The emergence of this factor indicated that intra-group friction can operate independently of the positive therapeutic processes. One of the limitations of the generalizability of the Johnson et al. (2005) study was the use of non-clinical and counseling groups. Therefore, a similar study applied these measures to inpatient psychotherapy groups in Germany and Switzerland (Bormann & Strauss, 2007). The three-factor structure of the model described above was confirmed. As a part of international collaborative efforts (McClendon & Burlingame, 2012), Study I in this thesis applied similar measures and methodology to a clinical outpatients sample. Moreover, within the present design factor structures was measured at several time-points. This strategy was intuitively important given the developmental nature of therapeutic processes, especially since the possibility of different factor structure over time was not examined in the previous two studies.

1.3.3 Present challenges

Concepts addressing group processes could be organized in a more economic and essential manner, thereby minimizing conceptual confusion and overlap. At present, there are several challenges: First, the relationship between the concepts of cohesion and alliance is unsettled. Second, the position of the concepts of working and bonding processes, relative to the concepts of cohesion and alliance, is unclear. Third, the implications of applying process measures to the different relationships in groups (member-member, member-leader, and member-group) are not known. Fourth, many studies have not systematically reflected upon which aspects of the therapeutic relationships the dimensions represent. Fifth, no previous

study has addressed how the interrelatedness between measures may change during different phases of therapy. Sixth, since only two previous studies has tried to conceptualize group processes more economically (Bormann & Strauss, 2007; Johnson et al., 2005); a replication would be of interest, especially with a purely clinical outpatient sample. Seventh, most studies of group psychotherapy are on short-term groups, restricting the generalizability of results.

1.4 Influences on processes in groups

One alternative strategy to help clarify the interrelation between alliance and cohesion in groups is to examine how patients, therapists, and groups account for the variability in these processes. The relative strength of contribution from these sources may inform on how the processes are operating. In the case of alliance, if therapists and patients contribute the most, and the influence of the group-as-a-whole is small, alliance may operate equivalently in individual and group therapy since the process then is less susceptible to influences by the group context. Regarding cohesion, if the significance of the group-as-a-whole is strong, this may support the validity of the concept as operating on the group level. On the other hand, if patient variability accounts for most of the variance in cohesion this indicates that cohesion is more of an individual level process. Study II in the present thesis examined how these sources (i.e., patients, therapists, and group) accounted for variance in alliance and cohesion. These relationships has not previously been examined simultaneously in group psychotherapy research (Baldwin, Stice, & Rohde, 2008), and no study has addressed how these contributions may alter across phases of therapy.

1.4.1 Therapist influences

Therapist influences on processes can either be examined through how therapists differ in their contribution, or as an estimation of the *total amount* of process variability attributable to the therapist factor. Concerning the former strategy of study, Ackerman and Hilsenroth (2001;

2003) made a comprehensive literature review of the therapist factors that contribute to the therapeutic alliance in individual therapy. Results suggested that therapists who are rigid, self-focused, critical, moralistic, defensive, cold, or unconfident contribute negatively to the alliance, and that attributes such as flexibility, honesty, respectfulness, confidence and warmth contribute positively. It is uncertain to what degree these results can be transferred to the format of group therapy (Crowe & Grenyer, 2008), but a recent study suggested that therapist variability may predict both the early level and the subsequent development of the alliance in psychodynamic groups (Lorentzen, Bakali, Hagtvet, Ruud, & Høglend, 2009). It is also believed that therapist behaviors and personal characteristics can contribute to cohesion, although there is a scarcity of studies demonstrating this. However, one study found that a positive and structured leadership style contributed to more cohesive group climates in psychotherapeutic groups (Kivlighan & Tarrant, 2001).

Concerning the magnitude of the therapist factor, reviews have suggested that 5-7 % of psychotherapy outcome variance is attributable to therapists (Norcross & Lambert, 2011; Wampold & Brown, 2005). It is not known whether these results are transferable to the group context. Concerning the process-outcome relationship in individual therapy, one recent study indicated that therapists was the more important source of influence compared to patients (Baldwin, Wampold, & Imel, 2007). In psychotherapy groups, however, the effect of the group-as-a-whole is thought to reduce therapist effects on processes and outcome, since so many processes operate on the group level (MacKenzie, 1998). Nevertheless, the therapist in groups represents a “common fate” and a possible factor of influence on group members (Kenny, Mannetti, Pierro, Livi, & Kashy, 2002). No study to date has identified if contributions from a therapist to cohesion goes beyond the impact of the group itself (Baldwin et al., 2008), although it is generally accepted that the therapist’s pre-group preparations and early interventions may facilitate these developments (Burlingame et al., 2001).

1.4.2 Group influences

From a theoretical and clinical perspective, it is the mutual influences between group members that lay the ground for specific group processes to develop (Kenny et al., 2002), and it is generally assumed that it is the factors of universality, acceptance, and altruism that contribute to the early development of cohesion in therapeutic groups (MacKenzie, 1998; Yalom & Leszcz, 2005). One line of research has been to identify within-group behaviors associated positively or negatively with the level of cohesion. Of special interest has been the so-called “risk-taking” behaviors of self-disclosure, interpersonal feedback, and group confrontation, which in two studies have been shown to contribute positively to cohesiveness, as long as these behaviors don’t appear too early in a group’s life (Budman et al., 1993; Stokes et al., 1983). However, it is troublesome to delineate the causal paths in this line of research (Hornsey et al., 2007), since these in-group behaviors may as well be *a part* of cohesion, more than a precursor to it (Braaten, 1990; Stokes, 1983). In fact, some view self-disclosure even as an *effect* of cohesion (Burlingame et al., 2001).

Imel, Baldwin, Bonus, and Maccoon (2008) reported that group level accounted for 7% of the outcome variance in mindfulness stress-reduction groups. This magnitude of effect for outcome is comparable to the therapist effect reported for individual therapy (Norcross & Lambert, 2011; Wampold & Brown, 2005).

1.4.3 Patient influences

Patient characteristics has been shown to predict the levels of alliance, since increased severity of psychological problems or certain personality features typically leads to poorer alliances (Hersoug, Høglend, Havik, von der Lippe, & Monsen, 2009; Piper et al., 1991), also within the context of group psychotherapy (Lindgren et al., 2008). These findings are in contrast to the study of Baldwin and colleagues (2008) which indicated that patient variability was unimportant to the alliance-outcome relationship. With respect to cohesion, several

authors have pointed out that each individual member seems to have their own perception of group level processes (e.g. Johnson, Pulsipher, Ferring, Burlingame, Davies, & Gleave, 2006; MacKenzie, 1983). As Mallinckrodt (2000) put it: "...perceptions of support from fellow group members [are] as much a function of individual differences in the perceiver as they [are] a function of the group environment" (p. 242). Norcross and Lambert (2011) argued that researchers in the field probably have underestimated the contributions from patients in explaining process variation, and reported the patient variability accountable for psychotherapeutic outcome to be approximately 30%.

1.5 Group development

Logically inherent in every group process is the passage of time, and theories that describe the sequential stages of group process development are central to the practice of group psychotherapy (Brabender & Fallon, 2009). Empirical evidence supports the existence of these stages (Burlingame, et al., 2004), although patterns have been easier to identify early in therapy (MacKenzie, 1994). Most research on group development has been conducted on short-term groups, leaving progress in long-term formats less studied. Group development during short-term and the full length of long-term treatment have not previously been explored, and such a study design was recently requested to better understand how length of treatment influences therapeutic processes (Marmarosh & Van Horn, 2012). Paper III of the present thesis relates directly to this request.

1.5.1 Theories of stage progression

Most models of group development adhere to the stage progression paradigm, which states that groups move through stages of group processes that result in a stepwise increase in group complexity and maturity (Brabender & Fallon, 2009). For the first stage, most models describe a group climate of dependency in which members orient toward leader guidance to

identify group norms and boundaries (Bennis & Shepard, 1956; Brower, 1989; Foulkes & Anthony, 1965; Sarol-Kulka, 2001; Tuckman, 1965). The individual member will typically hesitate to become too involved in interpersonal issues, and behavioral patterns of avoidance tend to develop (Agazarian & Gantt, 2003; MacKenzie, 1998). However, various models put forward somewhat discordant explanations of this initial within-group conformity. Some models emphasize an initial positive atmosphere characterized by engagement, universality, and members searching for common issues (Kaplan & Roman, 1963; MacKenzie, 1998), whereas other models recognize a more competitive climate in which issues of power and control regulate member behavior (Bennis & Shepard, 1956; Agazarian & Gantt, 2003).

In the second stage of group development, there is a broad theoretical consensus that member-member relationships become more important than authority and dependency issues, and that the individual needs and preferences of group members come to the fore. This evolution typically leads to polarization around interpersonal issues, with an increase in negative affects and conflicts (Agazarian & Gantt, 2003; Beck, 1983; Brower, 1989; MacKenzie, 1983; MacKenzie & Livesley, 1983; MacKenzie, 1998; Tuckman, 1965; Sarol-Kulka, 2001; Wheelan, 1997).

Progressive models also tend to agree considerably in their descriptions of the third stage of development, the stage of consensual validation and structuring of group norms (Bennis & Shepard, 1956; Brower, 1989; Tuckman 1965; Sarol-Kulka, 2001) that generates a cooperative climate and a task-oriented work phase (Agazarian & Gantt, 2003; Beck, 1983, MacKenzie, 1998). Some models also highlight the development of deeper appreciations of each member's complexity (MacKenzie & Livesley, 1983) as well as intimacy (Tuckman, 1965) within this stage.

Progressive models are more difficult to compare beyond the third stage of group development, partly because the models differ in the number of proposed stages, ranging from

three to nine (Brabender & Fallon, 2009). Group processes are believed to become increasingly complex and dynamic later in group life (MacKenzie & Livesley, 1983). Some models emphasize the further deepening of empathy, intimacy, and communication within later developmental stages (Kieffer, 2001; Foulkes & Anthony, 1965), in contrast to descriptions of less-emotional investment in group work in other models (e.g., Tuckman, 1965). However, several theories have identified a last stage of termination (Kaplan & Roman, 1963; MacKenzie, 1997a; Tuckman & Jensen, 1977) characterized by cohesiveness and intimacy. The speed of progression through stages are loosely defined in most or all of the models, since the exact transfer from one stage to the next is generally believed to vary from group to group.

1.5.2 Empirical support

Several literature reviews have concluded that the evidence supports the existence of general stages in group therapy (Burlingame et al., 2004; Brabender & Fallon, 2009; MacKenzie, 1994), although various studies have revealed a somewhat mixed picture of how the stages unfold. The most agreed-upon findings seem to be that an early group atmosphere is characterized by a strong avoidance of the therapeutic tasks and is relatively free of within-group conflicts, and that avoidance decreases and conflict increases toward the second stage (Joyce et al., 1988; MacKenzie, 1983; MacKenzie, 1997a). However, there have been diverging reports of whether group cohesiveness (engagement) starts out relatively low (Tasca et al., 2006) or high (Kivlighan & Goldfine, 1991), and whether it has an increasing (Joyce et al., 1988), or decreasing trend (MacKenzie, 1983) toward the next stage. Beyond these two initial stages of group development, consistent patterns across time have been difficult to identify (MacKenzie, 1994). For instance, Kivlighan and Goldfine (1991) found that the third stage was characterised by high cohesiveness combined with low conflict and avoidance, as predicted by theory. By contrast, Brossart, Patton, and Wood (1998) reported high levels of

conflict during later stages of group development as well. Taken together, studies of group climate development indicate that there may be differences in patterns relative to contexts (e.g., theoretical orientation, patient sample), and research in this area has only started to elaborate these variations. Paper III investigates group climate development in the psychodynamic short- and long-term format.

1.6 Methodological issues

In group psychotherapy research, it has been troublesome to operationalize the group-as-a-whole as an entity (Fuhrman et al., 1984; Mudrack, 1989). Researchers have nevertheless acknowledged that the specific context of a psychotherapy group commonly affects its members, since individual responses (actions, processes, outcomes) are often more similar within groups than across groups (Kenny et al., 2002). There are several circumstances leading to this increased within-group similarity. A *compositional effect* occurs if the members are non-randomly sorted into groups, for instance if the members share the same psychiatric disorder. A *common fate* refers to members being part of the same environment, e.g., the therapist conducting the group, the type of therapy (psychodynamic, CBT, etc.), and the length of the therapy (short- or long-term). *Mutual influences* are the effects of specific interactions among members within a group (Kenny et al., 2002), for instance when group members work with the interpersonal problems of each member. In statistical terms, this increased similarity among patients of a group leads to correlations between within-group observations, reflecting a *nonindependence* of observations. Although sometimes representing a statistical challenge to be controlled for, the within-group correlations offers an indication of group impact on patient responses, that is, the proportion of variance accounted for by groups (Baldwin et al., 2008).

Through the multilevel confirmatory factor analyses of Paper I, the variance component analyses of Paper II, and the linear mixed models of Paper III, the nonindependence of observations has been corrected for or more explicitly examined. The strategy chosen in each case depends on whether identification of the source of nonindependence relates directly to the primary research question, or if it is more secondary to the analyses at hand. For instance, the common fate of sharing the same therapist or participating in short- versus long-term format was *explicitly examined* in Paper II, whereas effect of the mutual influences within specific groups was *controlled for* in Paper I. In the latter case, the nonindependence perspective was secondary to the modeling of processes measures.

If studies do not apply multilevel methodology when intraclass correlations are present, the statistical assumption of the nonindependence of observations will be undermined. The calculations will "...distort the estimate of the error variance, so standard errors, p values, confidence intervals, and most effect-size measures are invalid" (Kenny et al., 2002, p. 128). In spite of this, multilevel statistical tools are rarely used in group process research (Hoyle, Georgesen, & Webster, 2001; Kivlighan, Miles, & Paquin, 2012; Tasca, Illing, Joyce, & Ogrodniczuk, 2009).

2. The aims of the present study

2.1 The dimensions of group processes

The first aim of the project (Study I) was to examine the interrelations between the process measures Working Alliance Inventory – Short Form (WAI-S; Tracey & Kokotovic, 1989), Group Climate Questionnaire – Short Form (GCQ-S; MacKenzie, 1983), and the cohesiveness subscale of the Therapeutic Factors Inventory (COH; Lese & MacNair-Semands, 2000), when applied to nine short-term and nine long-term psychodynamic therapy groups. Five hypothesized models of different factor structures were tested by multilevel confirmatory factor analyses, where dimensions of quality, work, bond, alliance, cohesion, and negative relationship were organized in different combinations across member-leader and member-group relationships. All five models were tested early in therapy, and then the preferred model was tested at two later time-points.

2.2 The sources of influence on alliance and cohesion

The second aim (Study II) was to investigate the amount of variance in alliance and cohesion that was accounted for by patients, therapists, and groups, respectively, in a sample of patients attending short- or long-term psychodynamic group psychotherapy. Furthermore, we wanted to explore if the relative contributions from therapists, groups, and patients changed as therapy progressed. Variance component were estimated for all the sources of variation identifiable by the research design.

2.3 Group climate development

The third aim (Study III) was to compare the development of group climate (engagement, conflict, avoidance) within short- and long-term psychodynamic group psychotherapy,

examining whether these processes unfold in a similar way in the two group formats. Two modes of comparison were applied. The first model compared the development of group climate across the first 18 sessions of the short- and long-term formats (comparison relative to time). The second model compared group climate across the early, middle, and late stages within both the short-term and long-term groups (comparison relative to stage).

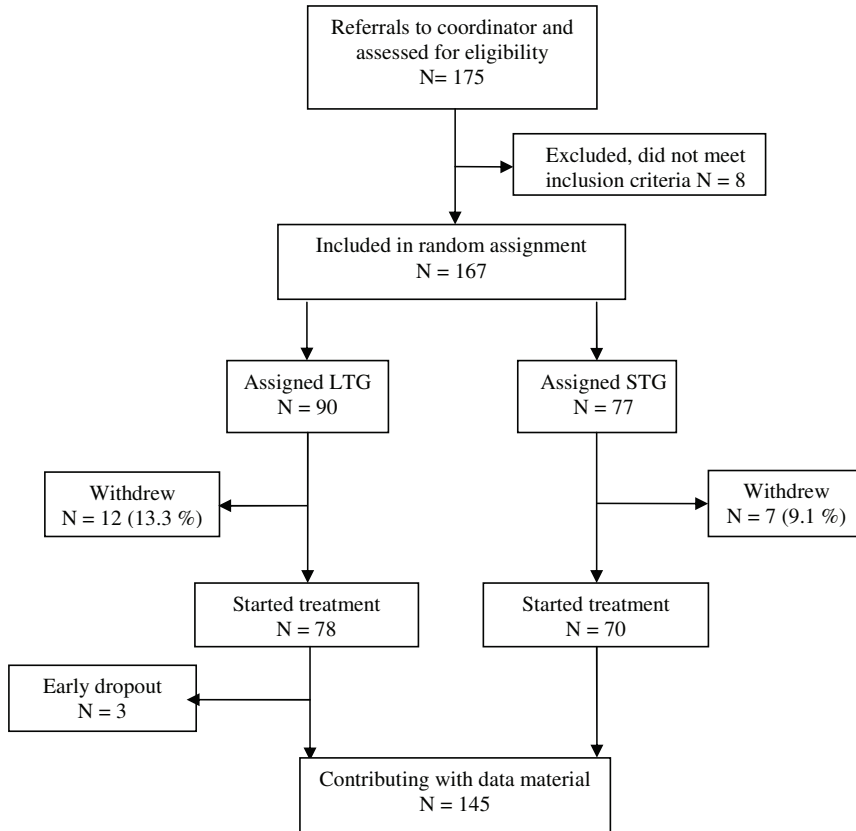
3. Material and methods

3.1 Participants

The patients in our sample were participating in a study of the efficacy of short- and long-term psychodynamic group psychotherapy (Lorentzen, Høglend, & Ruud, 2008), and were recruited from three urban areas in Norway (Ålesund, Sandnes/Stavanger, and Oslo). One project coordinator and 2-4 group therapists were involved at each site. The participants were regular patients initially referred to outpatient mental health services or to psychiatrists/psychologists in private practice. Exclusion criteria were overt psychosis, alcohol/drug addiction, or organic brain disease. After evaluation by the coordinators, 167 patients were randomized to the two treatment conditions and stratified by gender to ensure that each group contained at least two men. Nineteen patients withdrew after the randomization procedure, leaving 148 patients who started therapy (short-term: $N = 70$, long-term: $N = 78$). Three of these patients dropped out of the study early in therapy and thus did not contribute to the analysis, reducing the final sample size to 145 patients (see Figure 2).

Sixty-two percent were female, the mean patient age was 38.5 years ($SD = 9.4$ years, range = 20-61 years), and the mean length of education was 13.6 years ($SD = 3.2$ years, range = 8-23 years). Forty-five percent were single at the onset of therapy, with the remainder married/cohabiting. The mean duration of the chief complaint was 175 months ($SD = 144$ months, range = 5-648 months). Twelve percent of the patients had previously been hospitalized for a psychiatric disorder. Diagnostically, 97% of the patients had an axis I disorder according to DSM-IV, and the mean number of axis I disorders per patient was 2.8 ($SD = 1.6$). The distributions of various axis I disorders, relative to the total sample, were: major depression (single episode) 10%, major depression (recurrent) 67%, dysthymia 7%, panic disorder with agoraphobia 19%, agoraphobia without panic attacks 7%, social phobia

Figure 2. Patient flow in a Randomized Controlled Trial of short- and long-term psychodynamic group psychotherapy.



35%, specific phobia 18%, obsessive-compulsive disorder 16%, generalized anxiety disorder 24%, somatoform disorder 23%, bulimia 4%, and substance abuse (lifetime) 21%. Other axis I diagnoses were represented by less than 4% of the sample. Axis I disorders were diagnosed

using an extended version of the *Mini international neuropsychiatric interview* (MINI Plus; Leiknes, Leganger, Malt, & Malt, 2001). Inter-rater agreement for axis I disorders was not estimated. Forty-eight percent of the patients had at least one axis II disorder, with a mean number of 1.3 axis II diagnoses per patient for this sub-sample. Inter-rater agreement for the presence/absence of axis II diagnoses was $\kappa = 0.77$, indicating a good level of agreement (Landis & Koch, 1977). The mean number of positive SCID II criteria (First, Gibbon, Spitzer, Williams, & Benjamin, 1997) for the total sample was 8.1 ($SD = 6.6$, range = 0-31). The distributions of the specific personality disorder diagnoses, relative to the total sample, were: avoidant 28%, obsessive 9%, paranoid 5%, borderline 5%, dependent 4%, anti-social 1%, and PD NOS 9%. Nearly all participants were Caucasians, with Norwegian as the primary language. See Table 1 for a detailed sample description, both for the total sample and for the short- and long-term samples after randomization. Informed written consent was obtained from all patients. This study was approved by the Norwegian Committee for Medical Research Ethics.

3.2 Therapies

This study encompassed 18 psychotherapy groups, nine short-term (20 sessions) and nine long-term (80 sessions), each including eight patients at therapy onset. Both formats were run with a weekly session of 90 minutes. The groups were closed, but to secure the “survival of the group” in case of extensive early attrition, new patients could be admitted in the long-term groups during the first six months. Both therapy formats were manualised psychodynamic group psychotherapies (Lorentzen, 2004). The short-term format was partly built on MacKenzie’s (1997b) generic, time-limited, phase-oriented group psychotherapy, and the long-term format was a modification of Foulkes’ group analytic therapy (Foulkes & Anthony, 1965). Although these therapeutic approaches have a lot in common, therapists were

Table 1. Pre-treatment characteristics of 148 patients assigned to short- or long-term psychodynamic group psychotherapy.

	Short-Term Group N=70		Long-Term Group N=78		All patients N=148	
	Mean	Sd	Mean	Sd	Mean	Sd
Age	38.8	9.4	38.5	9.5	38.5	9.4
Education	13.6	3.2	13.6	3.2	13.6	3.2
Expectations ^a	7.9	2.4	7.5	2.8	7.7	2.6
Number of axis I diagnoses	2.6	1.4	2.9	1.7	2.8	1.6
SCID-II criteria	7.1	6.6	8.8	6.5	8.0	6.6
	N	%	N	%	N	%
Female	44	62.9	48	61.5	92	62.2
Single	30	42.9	36	46.2	66	44.6
Formerly hospitalized	6	8.6	11	14.1	17	11.5
Axis I diagnosis						
Major dep. single	5	7.1	9	11.5	14	9.5
Major dep., recurrent	48	68.6	51	65.4	99	66.9
Dysthymia	7	10.0	3	3.8	10	6.8
Panic disorder	20	14.3	32	20.5	52	18.6
Agoraphobia	8	11.4	2	2.6	10	6.8
Obs.-comp. disorder.	7	10.0	17	21.8	24	16.2
Social phobia	22	31.4	30	38.5	52	35.1
Generalized anxiety	11	15.7	24	30.8	35	23.6
PTSD	4	5.7	1	1.3	5	3.4
Somatoform disorder	12	17.1	22	28.2	34	23.0
Other					5	3.4
No axis I diagnosis	1	1.4	4	5.1	5	3.4
Axis II diagnosis						
Avoidant	15	21.4	26	33.3	41	27.7
Dependent	1	1.4	5	6.4	6	4.1
Obsessive compulsive ^c	2	2.9	11	14.1	13	8.8
Paranoid	5	7.1	3	3.8	8	5.4
Borderline	3	4.3	4	5.1	7	4.7
PD NOS	4	5.7	9	11.5	13	8.8
Antisocial	0	0	2	2.6	2	1.4

^a After randomisation.

instructed to intervene somewhat differently. According to the manual for short-term groups, therapists should facilitate the evolution of Mackenzie's stages of engagement, differentiation, interpersonal work, and termination. This structuring element was not explicit in the manual for long-term groups; the Foulkesian approach of gradual development and deepening of communication was encouraged.

Nine therapists (two men, seven women) each conducted one short-term and one long-term group. The therapist pool consisted of two psychiatrists, three psychologists, three psychiatric nurses, and one social worker, with an average time of practice of 20 years ($SD = 4.4$ years) and a mean age of 53 years ($SD = 3.7$ years). All therapists were formally trained group analysts who were trained in the experimental treatments before the start of the project and received supervision during treatment.

3.3 Measures

3.3.1 Working Alliance Inventory – Short Form

The Working Alliance Inventory – Short Form (WAI-S; Tracey & Kokotovic, 1989) is a 12-item self-report questionnaire designed to measure different aspects of the patient-therapist relationship. It is a simplified version of the original 36-item version (WAI; Horvath & Greenberg, 1989), and the interchangeability of the two has been supported (Busseri & Tyler, 2003), although a revision to the short version using only the positive worded items has also been suggested (WAI-SR; Hatcher & Gillaspay, 2006). All these versions of the WAI are based on Bordin's (1979) conceptualization of the working alliance, which divided the construct into collaboration on task, agreement on goal, and the affective bond between patient and therapist. Accordingly, the WAI-S has three subscales: Task, Goal, and Bond, including 4 items each, and these categories represented our operationalizations of alliance in the present study. WAI-S is rated on a 7-point Likert scale, ranging from *not at all true* to *very true*. Research has provided strong support for the reliability of WAI (see Horvath, 1994, for a review). It corresponds well with other client-rated alliance measures, indicating adequate convergent validity; it corresponds less to other measures of the global therapeutic relationship, supporting its discriminant validity; and, the predictive value of alliance ratings for outcome is well established (Horvath, 1994; Martin, et al., 2000). WAI-S can be rated

both by patients and therapists. The present study used only the patient-rated WAI-S. The estimate of Cronbach's alpha coefficients at waves 1, 2, and 3, were: WAI-Task .83, .87, .89; WAI-Goal .87, .86, .91; WAI-Bond .55, .79, .76. This indicates acceptable internal consistency reliability, except for WAI-Bond at wave 1.

3.3.2 Therapeutic Factors Inventory, subscale Cohesiveness

The Therapeutic Factors Inventory, subscale Cohesiveness (TFI, Coh; Lese & MacNair-Semands, 2000) is a 9-item self-report questionnaire. Items are rated on 7-point Likert scales, ranging from *strongly disagree* to *strongly agree*. The subscale is part of a larger battery with 11 different subscales, developed to measure the therapeutic factors in group psychotherapy (Yalom & Leszcz, 2005). Using a sample from a counseling center population, Lese and MacNair-Semands (2000) found a test-retest reliability of .93 over one week, and a Cronbach's alpha of .90 for this measure. The evidence supporting the construct validity of the TFI measure is only tentative (MacNair-Semands & Lese, 2000). However, the content of the Coh scale covers socio-emotional aspects of group cohesion that corresponds well with definitions of cohesion in the literature (Johnson, et al., 2005), and has a good face validity (Greene, 2003). Moreover, in a study that examined the interrelations between frequently used scales in group processes research (Johnson et al., 2005), the Coh scale loaded on the same factor as Engaged from the Group Climate Questionnaire – Short Form (MacKenzie, 1983), which is a measure of group cohesion (Kivlighan & Lilly, 1997). These findings add support to the convergent validity of the Coh scale. The estimated Cronbach's alpha coefficients for the Coh scale across the first three waves were: .83, .87, and .90, indicating acceptable internal consistency reliability.

3.3.3 Group Climate Questionnaire – Short Form

The Group Climate Questionnaire – Short Form (GCQ-S; MacKenzie, 1983), a shortened 12-item version of the original 32-item questionnaire (GCQ-L; MacKenzie, 1981), is a self-

report measure rated on a 7-point Likert scale (values from 0 to 6), ranging from *not at all* to *extremely*. The GCQ-S contains three subscales (Engaged, Avoiding, and Conflict) that were factor-analytically derived from the original GCQ-L measure. Engaged is related to the concept of cohesion, but also contains elements of cognitive understanding, confrontation, self-disclosure, and empathy. Avoiding is related to avoidance of responsibility for the change process. Conflict involves elements of interpersonal conflict and distrust. The subscales are relatively independent of each other (MacKenzie, 1983); ratings have been found to differentiate types of group therapy (Joyce et al., 1988), and to correspond well with developmental group therapy theory (Tasca et al., 2006). Reports from non-hospitalized psychiatric samples show that patients tend to score Engaged at the upper half of the 7-point Likert scale, Avoiding in the low or middle region, and Conflict in the lower region of the scale. For instance, in two studies the group climate item means reported were 3.83, 2.23, and 1.32 (Tasca, Flynn, & Bissada, 2002), and 4.18, 2.48, and 1.22 (Tasca et al., 2006) for the Engaged, Avoiding, and Conflict subscales, respectively. However, in a sample of patients with social phobia, an engagement level in the middle region of the scale was reported (Bonsaksen et al., 2011), perhaps due to the degree of social inhibition characteristic of this disorder.

In the present study, the Cronbach's alphas across the five waves of data collection were .68, .74, .79, .76, and .77 for the Engaged scale, .49, .64, .61, .69, and .68 for the Conflict scale, and .44, .52, .58, .61, and .76 for the Avoiding scale. These calculations indicate acceptable internal consistency reliability for the Engaged scale, but less than optimal coefficients for the Conflict and Avoiding scales within several waves. Cronbach's alpha coefficients are a function of the number of items within a scale, and the Conflict and Avoiding scales include only three and four items, respectively. An alternative measure of internal consistency is the mean inter-item correlation; these coefficients across the five

waves were .35, .39, .38, .42, and .43 for the Engaged scale, .36, .38, .28, .42, and .44 for the Conflict scale, and .20, .23, .23, .27, and .46 for the Avoiding scale. All of these coefficients of mean inter-item correlation indicate acceptable internal consistency reliability, since the optimal range for these coefficients is .20 - .50 (Clark & Watson, 1995). Low values indicate that the scale represents a relatively wide concept, and high values indicate that the scale represents a rather narrow concept. Higher reliability than .50 may occur at the expense of the validity of that scale, as the latent construct then may correspond too closely to the observed variables.

3.4 Procedures

The three questionnaires were administered to the patients by their therapists at the end of the following sessions, defined as five waves of data collection: 3 and 4 (Wave 1), 10 and 11 (Wave 2), 17 and 18 (Wave 3), 39 and 40 (Wave 4), and 77 and 78 (Wave 5). Waves 1-3 were included in the analyses of Study I and II, and all 5 waves were included in the analyses of Study III. The patients usually completed these measures before they left the room. When participants did not attend either of the two sessions in a given wave, the ratings from the session that was as close in time as possible to the missed session were included in order to ensure that most patients were represented in each wave. In the many cases in which participants attended both sessions within a particular wave, only one response per instrument was included in the analysis by choosing from the session with the highest group member attendance for a particular group within a wave. The numbers of patient ratings included in waves 1-5 were 139, 130, 126, 58, and 43, respectively.

3.5 Analyses

3.5.1 Study I

Study I used multilevel confirmatory factor analysis (CFA) to address the hypotheses (Heck & Thomas, 2000; Hox, 2002). The patients were nested within groups, and intraclass correlations were calculated for the subscales of the included measures, and ranged from .08 – .35 across waves. Ignoring the correlation among group members, no matter how slight, can lead to biased statistical tests. Multilevel CFA allows researchers to model the correlation among group members and produces accurate statistical tests. All analyses were conducted using Mplus v5.2 (Muthén & Muthén, 2007) and used full information maximum likelihood procedures to account for the very small amount of missing data.

Multilevel CFA separated the covariance matrix of observed variables into two parts: (a) the between-groups covariance matrix, which represents the relationships among the group means for each variable and (b) the within-groups covariance matrix, which represents the relationships among the patients' scores for each variable. Patients' scores in the within-groups matrix are deviations of each score from the respective group mean (i.e., group centered).

Typically, multilevel CFA involves fitting the proposed factor structure at the within-groups and between-groups levels. Because our sample included only 18 groups, we had limited degrees of freedom and were only able to fit the factor structure at the patient level (i.e., the within-groups covariance matrix). However, we included a random intercept for each observed variable, which accounted for the statistical nonindependence within groups. In a supplementary analysis we tested whether group means for each of the process measures differed across treatment conditions (short-term, long-term). None of the *t*-tests was significant or even approached significance, suggesting that there was no relationship between treatment condition and outcome at the between-groups level.

The analyses proceeded in two steps. First, we fit each of the hypothesized models using data from Wave 1. To identify the best fitting model, we used four fit indices: (a) chi-square, (b) Tucker-Lewis fit index (TLI), (c) comparative fit index (CFI), and (d) the root-mean square error of approximations (RMSEA). Good fit was indicated by a non-significant chi-square, TLI and CFI values greater than .95, and RMSEA values less than .05 (cf. Kline, 2005). Once we identified the best fitting model at Wave 1, we tested whether that model provided a good fit to the data at Waves 2 and 3. This allowed us to examine whether the relationships observed early in therapy continued as therapy progressed.

3.5.2 Study II

Study II estimated the relative importance of the sources of variation identified in the present measurement design, as they accounted for alliance and cohesion. These sources were estimated in terms of variance components within the framework of generalizability theory (Shavelson & Webb, 1991). In our design, patients (p) rated items (i). These sources of variance are *crossed* (p x i), since all patients rated all items. The design further specified that items were *nested* within their subscale category (i:c), since no item was represented within more than one category. Furthermore, patients (p) were *nested* within unique combinations of therapists (t) and groups (g); denoted (p:tg). These combinations of therapists in groups were *crossed* (t x g), since each therapist ran both short- and long-term groups. The total design then reads as follows: Patients nested within crossed combinations of therapists and groups crossed with items nested within categories, denoted (p:tg) x (i:c). The design is termed multifacet, since patients (p), therapists (t), groups (g), items (i), and categories (c) all are facets of the design. The identifiable sources of variance are derived from these facets, absorbing a total of 14 sources of variance that are designated as t, g, p:tg, c, i:c, tg, tc, ti:c, gc, gi:c, pc:tg, tgc, tgi:c, and pi:tcg (see table in Paper II; Bakali, Wilberg, Hagtvet, & Lorentzen,

2010, p. 374). All of the variability in measurements can be accounted for by these sources, and their relative strength of contribution was estimated.

The measurement of alliance consisted of the three subscales Task, Goal and Bond, whereas the cohesion construct was represented by the two scales Cohesiveness and Engaged. Due to the randomization procedure, where patients were drawn into short- or long-term groups, the groups (g) in our design stands for group format or group length.

The variance components display their relative size in *one* single, typical, or average observation in the populations of therapists, groups, and patients, and the universes of items and subscales (Brennan, 2001). In these universes, therapists and patients are considered random facets, since we are interested in therapists and patients in general, and not only those participating in our study. Also, items within categories (subscales) are considered a random facet, since items are thought to be replaceable with other similar items in representing their category. On the other hand, group length and categories of items are assumed fixed facets, since it is the specific formats of short- and long-term group psychotherapy, and the specific scales of Task, Goal, Bond, Cohesiveness, and Engaged, we are interested in.

Although the design of the present analyses allow for a total of 14 different sources of variation for alliance and cohesion, where none of the sources were defined as error variance as such, four variance components were of special interest to the present research aims. The first was the main effect of belonging to a specific therapist (t). The second was the main effect of the group therapy format: short- or long-term (g). Our third variance component of special interest was the therapist x group interaction (tg), which was interpreted as the influence from groups². The fourth variance component of special interest was patients nested

² In a narrow interpretation, the variance component tg represents the contribution from therapists that is relative to group length and vice versa. However, since each therapist run only one group of each length, the tg component does not differentiate group length from other aspects of the group. This would only have been possible if therapists had at least 2 short- and long-term groups each. Therefore, all aspects of variability of the group-as-a-whole interacting with therapists are confounded within the tg variance component. Furthermore,

within combinations of therapists and groups (p:tg), as an estimate of the degree of patient variability accounting for variance in alliance and cohesion.

3.5.3 Study III

The three subscales of the GCQ-S were analyzed with respect to development over time and development across stages within the two formats of group therapy (short-term, long-term). Comparisons relative to time, regarding the first 18 sessions of short- and long-term therapy, included Waves 1-3 of data collection for both formats. Comparisons relative to stage refer to the same time points within the short-term format (Waves 1-3), representing early, middle, and late therapy. For the long-term format, Waves 1, 4, and 5 were included to represent the early, middle, and late stages, respectively.

A linear mixed model (Fitzmaurice, Laird, & Ware, 2004) was used to account for potential dependencies in these multilevel data with a nested structure. The “lowest” level described the longitudinal time dimension, with each patient measured at several time points, and with time represented by the index i . Next was the patient level, indexed by j . Each patient belonged to a group (short- or long-term, index k), and a therapist l . Linear splines were used to capture the main feature of the time course, with random intercepts and slopes included when they enhanced the model. In a similar way, random intercepts were included at the group and therapist levels to account for variation/dependence across groups and therapists, respectively. A richest possible model was fitted, and model comparisons, estimation, and goodness of fit were based on maximum likelihood (and restricted maximum likelihood) and Akaike Information Criterion.

The time-course model was piecewise linear, with one spline from time-point 1 to time point 2 (slope 1), and another spline from time point 2 to time point 3 (slope 2).

since the therapists are members of their own groups, one could argue that the interaction between therapists and groups (the tg variance component) *approaches* an operationalization of the group-as-a-whole within this study.

Each of the six analyses addressed the following questions:

- I) Are the initial subscale scores different in the two formats (β_3 - called *group length*)?
- II) For both formats combined, is the change in subscale scores from time point 1 to time point 2 different from zero (β_1 - called *slope 1*)?
- III) For both formats combined, is the change in subscale scores from time point 2 to time point 3 different from zero (β_2 - called *slope 2*)?
- IV) Is there an interaction effect of slope 1 and group length (β_4 - called *slope 1 x group length*)?
- V) Is there an interaction effect of slope 2 and group length (β_5 - called *slope 2 x group length*)?

The significance level used in this study was $p < .05$. All statistical analyses were performed with the statistical package SPSS version 15 (SPSS Inc., Chicago, IL, USA).

4. Results

4.1 Summary of Paper I

Paper I examined the relationships among group therapy processes measured by the Working Alliance Inventory – Short Form, the Therapeutic Factors Inventory, subscale Cohesiveness, and the Group Climate Questionnaire – Short Form. Five hypothesized models were tested early in therapy (Sessions 3 and 4) using multilevel confirmatory factor analysis.

Two three-factor models approached conventional standards of model fit. We inspected the modification indices in both models to see whether there were any theoretically justifiable changes we could make. For both models, the modification indices suggested that WAI Bond should load on the first and second factors, which essentially merged the two three-factor models. This three-factor model consisted of *member-leader alliance*, *positive bonding relationship*, and *negative relationship*. Fit was excellent. Later in therapy, the WAI Bond was no longer associated with the member-group cohesion scales, indicating that cohesion and alliance and the member-leader versus member group bonding represent different processes. The model at Wave 2 and 3 was then better described as *member-leader alliance*, *member-group cohesion*, and *negative relationship*. The process of member-leader bonding served a special function by bridging alliance, cohesion, and the multiple group relationships early in therapy.

4.2 Summary of Paper II

Paper II examined patient, therapist, group length, and therapist x group interaction as sources accounting for variability in alliance and cohesion over three stages in short- and long-term psychodynamic group psychotherapy. G-study variance components were estimated for the 14 sources of variation identifiable by the research design. Patient variability

represented the strongest clinically relevant contribution to both alliance and cohesion. This indicates that although these processes are defined as operating at dyadic and group levels, respectively, the individual level perception explains most of the process variability. Therapist variance was important to alliance at all stages, but for cohesion mostly in the middle stage. The therapist x group interaction was important to the alliance early in therapy and for cohesion within the first two stages, but these contributions then decreased. Group length did not account for any variability in the process measures. Therapist versus the therapist x group interaction as sources of influence accounted differently for alliance and cohesion at several stages. This supports the hypothesis of alliance and cohesion as related but different processes of group psychotherapy.

4.3 Summary of Paper III

Paper III examined the development of group climate (GCQ-S; Engaged, Conflict, and Avoiding) in short- and long-term psychodynamic group psychotherapy. Linear mixed models were used to compare changes in group climate over time.

The development of Engaged was similar in the two psychotherapy formats, and was scored by patients at a high level throughout therapy. When compared relative to time during the first 18 sessions, Conflict and Avoiding decreased toward the termination of the short-term groups, in contrast to an increase in this still-early stage of the long-term groups. When compared relative to the early, middle, and late stages of therapy, a low-high-low pattern for Conflict and Avoiding emerged in both psychotherapy formats, with a stronger decrease toward termination in long-term groups. There seemed to be an accelerated progress of development within the short-term groups, and a delayed but strengthened process in the long-term groups. The stage progression paradigm of group development was supported,

although the developmental models may have a more narrow range of validity than proposed theoretically.

5. General discussion

5.1 Discussion of methods

5.1.1 Study design

The present research adopts a RCT design where group length (short-term, long-term) is the experimental variable. There exist very few studies of long-term group psychotherapy, especially beyond the small scale format of case studies. Only a few direct comparisons of short- and long-term group psychotherapies exist in the literature (Joyce et al., 1988; Piper et al., 1984), and the present RCT design for short- and long-term group psychotherapy is the first of its kind. This thesis asks common questions of group process research: (a) what are the most important dimensions in group therapy processes?, (b) what is the interrelation between alliance and cohesion in group psychotherapy?, and (c) how do processes evolve over time in group psychotherapy? These questions have been elaborated relative to group length; mostly for the first time in this field of research.

Another important feature of the current research design is repeated measurement. The five defined waves of data collection allowed the process measures to be examined at different stages of therapy. Due to the developmental nature of therapeutic processes, measurement at several time-points is essential, and without it any study of group processes will have limited validity. Two different modes of comparison relative to time were applied in the present thesis: (a) Study I and Study II performed separate analyses at different time-points. This cross-sectional strategy does not directly measure development, but does so indirectly by comparing the selected time-points (cross-sections). The strength of this strategy is the detailed examination of the *interrelations* of the variables. The cost is that the development is not directly tailored. The strategy chosen for Study I and Study II reflects that interrelatedness of variables was the more important perspective within these studies. By

contrast, (b) Study III applied a *direct* measure of the time factor by the piecewise linear slopes embedded in the statistical formulas. This strategy of analysis corresponded to the aim of tracking the *development* of group climate dimensions within this study. However, the five selected time points does not represent a continuous monitoring of time, and we might have missed micro-patterns of process development between the selected waves of data-collection.

The patients were randomly selected to participate in a particular group, and the act of *group composition* could not be implemented (with the exception of gender, which was stratified to secure at least two men in each group). Clinically, group therapists will often seek to obtain homogeneity on some variables (often severity of mental illness), and heterogeneity on other variables (personality, gender, age, life experiences). The psychodynamic or interpersonal oriented group therapies are often explicit in their ambition of composing a microcosm where challenges and resources present in the relationships of normal life are also represented in the mini-format of the group (Bennis & Shepard, 1956; Foulkes & Anthony, 1965; Yalom & Leszcz, 2005). Although the strategy of group composition is common in clinical practice, this is one of the least studied factors in all the group empirical history (Burlingame, Fuhrman, & Mosier, 2003), and the consequences of not selecting group members through a perspective of group composition are not clear. It might randomly have given some of the groups in the sample a harder start, but this effect should be equally distributed within each format (short, long). However, the overall characteristics of the present sample to some degree balance the elements of homogeneity and heterogeneity as described above, and: the interpersonal profiles of group members are after all a starting point in the therapy process, not destiny.

5.1.2 Sample

With respect to the severity of mental disorders, the participants in the present sample may be characterized as moderately disturbed. Nearly half of the participants were diagnosed

with a personality disorder. Most of these fell within the so-called cluster C of anxious or fearful personality disorders (Avoidant, Dependent, Obsessive-compulsive), leaving the clusters A (odd or eccentric; Paranoid, Schizoid, Schizotypal) and B (dramatic, emotional, or erratic; Antisocial, Borderline, Histrionic, Narcissistic) less represented. Generally, clusters A and B are regarded as more severe and difficult-to-treat than the cluster C of personality disorders. Furthermore, diagnoses related to psychosis, drug-addiction, or brain damage were excluded. Therefore, the more extreme ends of mental illness severity are not widely represented in this sample, and in this respect the sample can be viewed as relatively homogenous.

For most other relevant variables, however, the sample can be described as heterogeneous (e.g., specific disorders, combinations of disorders, age, gender, etc.). This plurality of personalities, life experiences, and problem areas of the participants are often preferred by group therapists, and in the present case it corresponds to the target groups of the treatment models (Foulkes & Anthony, 1965; MacKenzie, 1997b), which do not tailor a specific type of problem or symptom, but rather aim to cover the more general relational/interpersonal problems present in most mental disorders.

The participants were recruited from ordinary community mental health centers at three different rural areas in Norway, from which they were originally referred for treatment. In addition, some patients were recruited from psychiatrists and psychologists in private practice. Therefore, the sample is representative for the clinical population of outpatients attending psychotherapy in Norway, thus strengthening the ecological validity of results. Some of the influential studies of group process dimensions (e.g., Johnson et al., 2005) or patterns of group development (e.g., MacKenzie et al., 1987) have applied non-clinical or counseling group samples. Although the field of group dynamics covers more than the area of group

psychotherapy, it is important that the empirical foundation of the theories of group psychotherapy rests mainly on clinical investigations.

5.1.3 Therapies

The two group psychotherapeutic approaches in this study are similar in most respects, but they are not identical. Treatment manuals (Lorentzen, 2004) were developed to increase treatment integrity and to enhance internal validity (Kendal et al., 2004), and were applied as modifications of MacKenzie's generic group psychotherapy (short-term) and the Foulkesian group analysis (long-term). Thus, the short- and long-term format was not separated by the time-factor alone. Perhaps the most important difference between the manuals was the implementation of the specific stage-orientation in MacKenzie's model (1997b). Here, therapists more explicitly are instructed to draw group members' attention to the stages of engagement, differentiation, interpersonal work, and termination than is the case in a long-term group analysis. Because of this thematic structure in the short-term format, one could argue that there is a confounding between group lengths on the one hand, and the therapeutic strategies and techniques on the other hand. If this is the case, we cannot be sure whether the differences found between short- and long-term therapies are due to the experimental variable of group length or due to the difference in interventions.

Most short-term psychotherapies, if not all, are characterized by an increased amount of focus and/or structure (Been & Winston, 1998; McCallum & Piper, 1990). It would be fair to say that the very nature of a short-term therapy is to extract certain perspectives in a structuring manner (Shapiro, 2012). Consequently, to run a short-term psychodynamic group psychotherapy without a degree of increased focus would not have been ecological valid. Moreover, some theorists argue that the time-frame of a group in itself regulates group member behavior through a punctuated equilibrium in the middle of the time-frame, leading to increased productivity towards termination (Brabender & Fallon, 2009; Gersick, 1989). If

one accepts this perspective, an earlier onset of structured interactions in short-term groups would be expected independently of the manuals at hand.

The question of confounding is an ambiguous one. On the one hand, if one views short-term and long-term group psychotherapies as *categorical* variables, where the difference of time-frame is the most important but not the only difference between the formats, it would not be meaningful to state the argument of confounding, especially since the present versions of group therapy are representative and ecologically valid. On the other hand, however; if one view short- and long-term therapies as representing a *continuous* variable through the time-axis, there would be a degree of confounding due to a more explicit stage related focus in the short-term format, even though the therapies are equivalent in most other respects.

5.1.4 Measures

Two of the measures examined in the present study are of the most frequently used process measures worldwide (WAI-S; Tracey & Kokotovic, 1989; and GCQ-S; MacKenzie, 1983), and the results of the current investigation are therefore easily comparable with other similar studies. The third instrument is of more recent development, but is included in the CORE R (Burlingame et al., 2006) as the recommended measure of cohesiveness (TFI, Coh; Lese & MacNair-Semands, 2000). In the literature, all three measures have been examined for their psychometric properties, reliability, and validity and have been recommended for further use.

In the present study, less than optimal Cronbach's alpha coefficients were reported for some of the scales (see Table 2 for an overview). Specifically, this concerned the WAI Bond at the first wave of data collection, along with GCQ-S Conflict and GCQ-S Avoiding at several waves. This was in contrast to the rest of the scale measurements at the different waves, where good or adequate internal consistency reliability was reported.

Table 2. Cronbach's alpha coefficients for the scales of WAI-S, TFI COH, and the GCQ-S across five waves of data collection.

Subscales	Cronbach's alpha coefficients				
	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
WAI-S Task	.83	.87	.89		
WAI-S Goal	.87	.86	.91		
WAI-S Bond	.55	.79	.76		
TFI Cohesiveness	.83	.87	.90		
GCQ-S Engaged	.68	.74	.79	.76	.77
GCQ-S Conflict	.49	.64	.61	.69	.68
GCQ-S Avoiding	.44	.52	.58	.61	.76

The Cronbach's alpha coefficient is a function of the (a) average covariance between items and (b) the number of items within a scale. Since the WAI Bond include the same number of items as WAI Task and WAI Goal (4 items each), we can derive that the lowered alpha of WAI Bond at Wave 1 (.55) has to do with the covariance between items and not the number of items. One possible interpretation may be that the items of WAI Bond are perceived as representing something heterogenous by patients. However, the low alpha of WAI Bond is specific to Wave 1 (early in therapy), since the measurement of internal consistency reliability increased to an acceptable/good level later in therapy. The more plausible interpretation, therefore, may be that WAI Bond was measuring something different at different time-points. As Study I demonstrated, the factor structure may change over time. The factor structure at Wave 1 indicated that WAI Bond was important both to the member-leader alliance and the member-group cohesion; whereas the factor structure at Waves 2-3 indicated that WAI Bond was important only to the former dimension. This special position of WAI Bond at Wave 1 may explain some of the "confusion" in patient ratings in this early stage, and feasible conceptual justifications for this phenomenon will be further elaborated in the "Discussion of results"-section below.

The relatively low alpha coefficients for Conflict across waves may be partly explained by the few items (3) of this scale. Interestingly, for both Conflict and Avoiding there is an increasing trend of internal consistency over time. This indicates that the patients increasingly perceive the items within these scales as indicators of a common process. Low alpha for the Avoiding scale has been reported in some (e.g. Johnson et al., 2005), but not all (e.g., Kivlighan & Tarrant, 2001), previous studies. In a recent review of group climate theory and measurement, this scale was no longer recommended for use within pure clinical settings (McClendon & Burlingame, 2012).

The operationalizations of alliance, cohesion, and group climate through the scales of WAI-S, GCQ-S, and COH describe specific qualities of relationships operating in groups. Specifically, ratings are not of the therapist as such, but of the alliance in the patient-therapist *dyad*. Likewise, ratings are made of qualities and interactional patterns of the *total* group. Moreover, the ratings of dyad and group qualities are made from the perspective of the patient. This perspective is the most frequently used in group therapy research, but it is not without limitations. Several studies have shown that rating perspectives (patient, therapist, or observer) are not interchangeable; the scorings depends on which perspective you observe from (e.g., Tichenor & Hill, 1989). In addition, patients within the same therapy group often have different perceptions of the group climate (Johnson et al., 2006; MacKenzie, 1983), indicating that perceptions are colored by personality more than by process (Mallinckrodt, 2000), at least early in therapy (Lindgren et al., 2008). These findings threaten the validity of these measures, since processes seem to be operating on the individual level rather than on the dyadic or group level, even though they are defined as the latter. These findings echo the research challenges debated in the 1950s; the ambiguity of measuring a group level concept (cohesion) with an individual level operationalization (van Bergen & Koekebakker, 1959). However, patient process ratings has been shown to correlate more strongly to outcome,

relative to therapist and observer ratings, partly legitimating the continued use of this rater perspective.

The traditional conceptualization of alliance and cohesion is to define these as member-leader and member-group relationships, respectively, and these are the operationalizations used in the current research. If one accepts the recent trend of letting both alliance and cohesion to operate across all group relationships (member-leader, member-member, and member-group) then there is a confounding in our studies between content (alliance, cohesion) and relationships (member-leader and member-group). That is, in our member-leader alliance we cannot differentiate between effects from member-leader aspects on the one hand, and alliance aspects on the other hand, since these only appear in concert. Likewise, in our member-group cohesion, we cannot differentiate effects from the member-group relationship versus effects from cohesion, since these aspects also appear in concert.

From a conceptual perspective, however, the trend of applying alliance to member-group relationships is a controversial one. Alliance is defined partly as a working agreement between patient and therapist on the tasks and goals of therapy. Is it meaningful to speak of an alliance between the individual member and the group-as-a-whole? Can one establish and negotiate an alliance with an entity, or does one need to tailor the process into a specific relationship? Clearly, this is beyond the intensions of the original definitions of alliance. Moreover, what is meant by describing cohesion with therapist? Can a two-person relationship acquire a group level characteristic? Such operationalizations of alliance and cohesion push definitional limits and theoretical unclarity may be a consequence.

5.1.5 Analyses

The three studies in this thesis are based on the same sample, although there are minor variations due to different statistical procedures of inclusion/exclusion of participants in the studies, and the fact that the third study has a different time-frame than the first two. The

studies apply three different statistical methodologies: (I) Multilevel confirmatory factor analyses (Hox, 2002), (II) Variance component analyses (Shavelson & Webb, 1991), and (III) Linear mixed model (Fitzmaurice, Laird, & Ware, 2004). The research aims of the respective studies corresponded to the methods chosen: (I) the modeling of theoretically sound factors of group processes, (II) untangling the sources accounting for processes in groups, and (III) to track the developmental pattern of processes. Each of these statistical methods was adequate for answering the research questions relative to the three studies.

All three statistical methods applied a multilevel perspective, and thus handled the “unit-of-analysis-problem” that have been recognized within group therapy research for the last decades. Observations of individuals in group psychotherapy are nonindependent; and ratings of members of the same group tend to correlate (Baldwin et al., 2008; Kenny et al., 2002). Many statistical tests rest on a premise of independent observations from a homogeneous random sample. This premise is not accommodated in the present design. Even relatively small correlations between grouped data can have large consequences and produce invalid results (Baldwin, Murray, & Shadish, 2005). Therefore, multilevel methodology was required for all our analyses.

The concrete application of the multilevel perspective varied somewhat over the three studies. In the first study, a two-level model was applied: patients (level 1) nested within groups (level 2). Here, the treatment condition (short-term, long-term) was not directly included within the multilevel model, but was controlled for in a separate analysis. In the second study, the single group was not treated as a level. Rather, it was the group format (short, long) that was applied as the level above the group member, where patients were nested within crossed combinations of therapists and group length, and further crossed with items nested within scales (p:tg) x (i:c). In this second study, it was of importance to the research question to extract the variance component of therapist, and this could be done since

each therapist ran one short-term and one long-term group each. If we had defined the specific groups as the second level in Study II, then therapist and group effect would have been confounded. Common for the first two studies were the one-point-in-time attribute of the cross-sectional methodology. Study III, however, tracked development over time. Thus, in this third study there was another level relevant to the multilevel perspective, since scorings at different time-points were nested within patients.

As can be seen from the different applications of the multilevel perspective, data can be nonindependent in a number of ways, and the research questions are to some degree directive for the levels focused. The given sample and design (e.g. number of groups) also restrict the number of levels that can be included relative to degrees of freedom in the calculations. One level that was not included in any of the three studies was geographical area (site). Patients, groups, and therapists were located in one of three sites (Oslo, Ålesund, Sandnes/Stavanger), and we did not model whether this nesting of data produced nonindependence in the data sampling.

There are two main strategies when confronted with nonindependent data. The first is to correct for the bias in statistical tests, and the second is to both correct for bias and increase the range of hypotheses that can be tested (Hoyle et al., 2001). In Paper I and III, the former was the main strategy used, whereas in Paper II the dependencies of observations was at the core of the research questions and explicitly analyzed.

5.2 Discussion of results

5.2.1 Towards a model for group process constructs

As described and elaborated by McClendon and Burlingame (2012), Paper I is part of an international collaboration (USA, Germany, Norway) intended to provide a solid theoretical and empirical fundament for modeling the processes of group psychotherapy. Measurements

of alliance, cohesion, group climate, and empathy³ were applied to 30 non-clinical process groups and 81 groups at counseling centers (Johnson et al, 2005), 67 inpatients groups (Bormann & Strauss, 2007), and 18 clinical outpatient groups (Paper I; Bakali et al., 2009), with a total of 1257 group members participating across the three studies.

In this chain of related investigations, Paper I added a third distinct context for the examination of these research questions, thereby contributing to the robustness of conclusions that can be drawn from results. More importantly, our study included detailed descriptions of a sample comprising regular patients in an outpatient setting, which is a main area of application for group psychotherapy. The adding of such a sample is vital to the ecological validity of the total results. Moreover, our examined factor structures of processes were tested at three different time-points (cross-sections) in short- and long-term group psychotherapy. Given that (a) therapeutic processes by definition involves the passage of time, and that (b) factor structures need not be equal at different time-points, this was a much needed sophistication of analyses.

The first two studies (USA and Germany) univocally concluded that the most important processes in groups can be more economically reorganized into the three basic dimensions of *positive bonding relationship*, *positive working relationship*, and *negative relationship*. Here, the first factor comprised cohesion, engagement, bonding to leader, and empathy; the second included member-leader agreements on task and goal; and the third represented conflict and avoiding in the group. This model structure was only partly replicated in the current research.

On the one hand, our results confirmed the suitability of a three-factor model. In the primary analyses we tested models with one, two, or three dimensions (see figure in Paper I; Bakali, et al., 2009, p. 336), and only the three-factor models approached conventional fit. The negative relationship dimension of conflict and avoiding corresponded to the third factor

³ Measurement of empathy was only applied in the studies of Johnson et al. (2005) and Bormann & Strauss (2007), but not in the present Paper I.

in the model presented earlier (Bormann & Strauss, 2007; Johnson et al., 2005). On the other hand, regarding the two factors describing the positive relationship processes, our results diverged from the previous studies. In our study, excellent model fit was reached when the WAI Bond was allowed to load both on the factor comprising agreement on tasks and goals (work dimension) of therapy, *and* on the factor including engagement and cohesion (bond dimension) for the group as a whole. Our interpretation was that the member-leader bonding served a *bridging function* between the positive working relationship and the positive bonding relationship of group therapy processes. Consequently, the factors that emerged early in therapy were labeled *positive bonding relationship* and *member-leader alliance*, along with *negative relationship*. When interpreting this result for the early stage of therapy, the main diverging point compared to the model of Johnson et al. (2005) and Bormann and Strauss (2007) was that we could not confirm that the processes of collaborating on tasks and goals of therapy operates independently of the emotional bond to the therapist.

This point of divergence between the studies grew even more explicit at later stages of therapy, as we tested this preferred model early in therapy (Wave 1) at two later time-points (Wave 2, Wave 3). Here, the emotional bonding between patient and therapist (WAI Bond) loaded exclusively on the *member-leader alliance* factor along with WAI Task and WAI Goal. Thus, WAI Bond no longer loaded on the *positive bonding relationship* factor. As a consequence, this latter dimension was better described as a *member-group cohesion* factor, since only member-group bonding scales remained (Engagement, Cohesion). Our two dimensions expressing positive relationship constructs for the later stages in group psychotherapy was then best described as *member-leader alliance* and *member-group cohesion* (see figure in Paper I; Bakali et al., 2009, p. 339).

From a conceptual perspective, one plausible interpretation of this result is that the processes of alliance and cohesion were more important for patients than the division between

working and bonding processes. This is either because of the content of the process as such (alliance, cohesion), or as a function of the relationships involved (member-leader, member-group), since our measures of alliance and cohesion were confounded within member-leader and member-group relationships, respectively. In any case, our model organized the processes of working and bonding as conceptually *subordinated* alliance and cohesion, a finding in direct contrast to the previously suggested model (Bormann & Strauss, 2007; Johnson et al., 2005). The exception was at the early stage of therapy, where patient-therapist bonding bridged the competitive hypotheses for representing the primary factors of the positive relationship processes: the alliance/cohesion division versus the work/bond division.

As indicated by the special position of the WAI Bond in our model, a further examination of the patient-therapist relationship may help explain how our two positive relationship factors turned out differently from previous studies. As part of the procedures, patients met for pre-group preparation consultations with their future group therapist; an empirically supported activity that is recommended before group therapy onset (Burlingame et al., 2001). For participants, this most likely enhanced the collaboration with their therapist. This may relate to the finding that patients perceived the member-leader alliance as a relatively independent dimension as group psychotherapy progressed. This tendency for group participants to distinguish therapeutic processes related to other members from those that relate to the therapist, even if similar content is involved (in our case: bonding), was also reported in a study by Dierick and Lietaer (2008). Moreover, the general emphasize on relationships and interpersonal problems in psychodynamic therapy (Lorentzen, 2004; Shedler, 2010), along with the specific use of transference interpretations as a technique (Høglend, Amlo, Marble, Bøgwald, Sørbye, Sjaastad, & Heyerdahl, 2006), may have further increased the importance of the member-leader relationship in our study. For sure, the significance of the therapeutic relationship to the group leader must have been relatively

weaker in the non-clinical and counseling groups of Johnson et al. (2005), and may perhaps also have turned out differently in the inpatient settings of Bormann and Strauss (2007). In addition, it may be that the division between therapeutic tasks and therapeutic bonding is somewhat more complicated in psychodynamic therapy, since the socio-emotional part in a sense *is* the task (MacKenzie, 1994).

Early in therapy, however, patients perceived the socio-emotional climate as one dimension and did not sharply divide into which relationship it appeared. That is, member-leader bonding and member-group bonding converged. All scales that measured positive bonding relationship (WAI Bond, TFI Cohesiveness, GCQ-S Engaged) had their lowest Cronbach's alpha coefficients at this *first* wave of data collection (.55, .83, .68, respectively); all the later coefficients revealed a higher internal consistency (e.g., Wave 3: .76, .90, .79, respectively; see Table 2). This may indicate difficulties for patients to discriminate between bonding processes and relationships early in therapy. From a clinical point of view, patients are typically tense and anxious in the early stage of group life, and these sessions can be experienced by many as emotionally overwhelming. The leader will often contribute to an early focus on common themes and support, which may explain how the socio-emotional climate is perceived as one dimension initially. Furthermore, it is generally viewed as a core characteristic of group development that members mature in their capacity to differentiate the information (cognition, affect, relationship) in focus (Agazarian & Gantt, 2003).

5.2.2 Alliance and cohesion in group psychotherapy

The second major topic in this thesis was to study the relationship between the concepts of alliance and cohesion in a group psychotherapy setting. In addition to the theoretical discussions in Paper I and II, this interrelation was empirically tested both through the factor analyses of the first study, and through the variance component analyses of the sources (patients, therapists, format, groups) accounting for alliance and cohesion in the second study.

Over the last decades, researchers have been unable to agree on whether alliance and cohesion remain discrete processes when both are applied to the group therapy format, or if they alternatively collapse into one phenomenon. Empirical investigations have brought no conclusion to this debate, partly because of the differences in operationalization (see table in Paper I, Bakali et al., 2009, p. 334).

Drawing attention to the factor analyses of Paper I, there are at least four plausible outcomes on how to best organize the positive relationship processes of group psychotherapy (of which alliance and cohesion are parts): Positive relationship process can be described as factors of (a) alliance and cohesion, (b) work and bond, (c) quality, or (d) relationships. The most straightforward conclusion is to reject alternative (c) quality, since this one-factor possibility has been univocally rejected in all the relevant empirical studies (McClendon & Burlingame, 2012). More puzzling is the finding of our study that the concepts of alliance and cohesion (a) better organize the positive processes than the concepts of work and bond (b), contrary to what have been found in other studies. A special characteristic of alternative (d) is that it does not describe relationship *content* between participants; rather, it describes the relationship *structure* (member-leader, member-member, and member-group) of the group. Logically, it is important to notice that the different aspects of content and structure can apply in concert. For instance, one can have the content of alliance within the member-leader relationship, or the content of bonding within the member-group relationship, and so on. Although this perspective of content combined with structure has been recognized and discussed in several previous publications (e.g., Pinosof & Catherall, 1986; Burlingame et al., 2011), it was only recently put explicitly to the fore by McClendon & Burlingame (2012) as *the prime organizing matrix* of group therapeutic processes altogether (see Table 3). I will return to a further discussion of this model later.

Table 3. *The 3 x 3 matrix of relationship content and relationship structure in group psychotherapy (McClendon & Burlingame, 2012).*

		Relationship structure		
		Member-to-member	Member-to-leader	Member-to-group
Relationship content	Positive bonding relationship			
	Positive working relationship			
	Negative relationship			

Paper II elaborated the interrelation between alliance and cohesion through examining its possible sources of influence. The rationale was that this research strategy could shed light on whether alliance and cohesion are basically equal or different processes in groups. Does alliance remain a dyadic transaction in group psychotherapy? And, does cohesiveness truly operate on the group level? The results indicated that the major source accounting for the variance in both alliance and cohesion was patients (proportion of variability explained ranged from 26-39% and 19-25%, respectively), confirming that the quality of these processes largely depends on the eye of the beholder (Johnson et al., 2006; Lindgren et al., 2008). The magnitude of patient variability accounting for processes is comparable to the patient variability accountable for outcome, which in a recent review was estimated to approximately 30% (Norcross & Lambert, 2011).

For alliance, the therapist contribution was moderate early in therapy (explaining 6 % of the variability). However, the group factor also accounted for an equal amount of variability at this stage. This may support the point made earlier, that patients in the early processes do not sharply distinguish between the different relationships involved. The experience of

alliance with therapist interacts with the newly established experience of group membership. Later in therapy, however, therapist variability that accounted for the alliance increased (then explaining up to 10% of the variability) whereas the contribution from groups on the alliance almost weaned completely (2%). The increased leader significance across time is similar to what was reported by Kivlighan and Goldfine (1991), but is somewhat counterintuitive to the commonly held belief that the importance of the leader decreases at later stages in group therapy, when group member interaction increases (Burlingame et al., 2004; MacKenzie, 1998).

For cohesion, group variability accounted moderately (6%) for these processes at the early stages, as expected. To our surprise, however, this influence decreased somewhat at stage three (4%). The therapist variability had the strongest relation to cohesion in the middle stage (7%), but this influence also decreased at stage three (3%). The lost share of variability for both the therapist and the group accounting for alliance and cohesion at stage three was parallel to the patient variability becoming more important. See tables and figures describing and illustrating sources accounting for both alliance and cohesion in Paper II (Bakali et al., 2010, pp. 376-378).

The results of Study II relates to the question of whether alliance are largely determined by pre-therapy patient characteristics (e.g., Piper et al., 1991) or therapist influences (e.g., Baldwin et al., 2008). If the alliance is basically an *interpersonal* process, then the therapist's skill may play an important role in shaping the quality of the alliance. However, if the alliance is more of an *intrapersonal* process, the quality of the therapeutic relationship may to some degree be predestined, at least initially (Henry & Strupp, 1994). Our results indicate that the possibility for both therapist influences and group membership effects to overcome this pretreatment patient variability is by the early more than the later stages.

In Paper II, results suggest that alliance and cohesion are relatively distinct processes, since the sources accounting for the variability of the two processes were unequal at several stages. In our study, alliance was confounded with member-leader relationships and cohesion was confounded with member-group relationships, in line with the common definitions of these constructs. Some authors argue that the alliance *by definition* should operate only within the member-leader relationship, and that the concept of cohesion belong exclusively to the member-group relationship (e.g., Crowe & Grenyer, 2008), in line with the current operationalization. If one accepts this argument, then the confounding is not a matter of ambiguity, but of necessity.

As mentioned in the introduction, Baldwin and colleagues (2008) suggested that future research should investigate if therapists produce nonindependence beyond the effect of the group itself. Results from Study II indicate that the answer to this research question is 'yes', since there was a separable non-trivial contribution from both therapists and groups. In the variance component analyses, the components may be considered as direct estimations of the degree of nonindependence attributable to the sources. And, in combinations, they are to be considered as *additive* in their explanation of variance. Therefore, the effect from therapists is produced beyond the effect of groups.

5.2.3 Suggestions for model improvement

A problem for the content-structure model (Table 3) presented by McClendon and Burlingame (2012) is that two of the most important concepts of processes within groups (alliance and cohesion) are not explicitly included. Although some studies support the 3 x 3 matrix of relationship content (*positive bond*, *positive work*, and *negative relationship*) and relationship structure (*member-member*, *member-leader*, and *member-group*), the present research suggest that the alliance/cohesion distinction is more important than the bond/work distinction. Our study is of course to some degree context-specific, just as the Johnson et al.

(2005) sample of non-clinical and counseling groups was. As discussed above, some of the components of our study may add explanation to the differences in results: (a) pre-preparation with member-leader sessions (strengthening member-leader alliance), (b) psychodynamic format (increased significance of member-leader interactions), and (c) measurement at different time-points (capturing differences in factor-structure over time). It has been a clear ambition of the international collaboration of modeling group processes that the model should apply to multiple contexts. So, can these results be integrated?

A rethinking of the concepts at hand might be of value. At first glance, the task/bond vs. the alliance/cohesion distinction might be seen as “competitive” within the relationship content domain. Specifically, is it the factors of task/bond *or* the factors of alliance/cohesion that best explain positive relationships in groups? However, when looking at the typical definitions of alliance, work and bond is a *part of* the alliance (e.g., Bordin, 1979; 1994). Theoretically then, the presence of work/bond does not rule out the presence of alliance; they may interrelate as hierarchically organized concepts. In addition, although defined as dyadic in most contexts, the elements of the alliance (tasks, goals, bonding) are not *logically* restricted to the patient-therapist relationship; these are transactions and experiences that principally can apply to a number of relationships. Within the specific patient-therapist relationship of a psychotherapeutic context, however, we call it alliance. When applied to other relationships they may represent different processes. The same goes for the elements typically inherent in the descriptions of cohesiveness; one can experience “a basic bond” in several constellations of relationships, although it might relate somewhat unlike within different relationships. As Dierick and Lietaer (2008) argued; patients seem to differentiate processes of similar content when operating within different relationships.

Keeping these conceptual arguments in mind, we attend once again to the relationship content – structure matrix in Table 3. One feature of the 3 x 3 matrix is that most boxes are

empty. McClendon and Burlingame (2012) suggest that when positive bond, positive work and negative relationship are applied to the member-group relationship they may be termed group climate. However, these boxes may be more specifically contained if we derive the consequences of combining the element of the horizontal rows with the vertical columns. This could help integrate alliance and cohesion with the model, along with other proposed concepts of important group processes and qualities. To deepen this line of reasoning, I will below specifically attend to the empty boxes of the matrix. Some of the rubrics will be relatively straightforward to define, whereas others may be unclear and disputable.

Starting with the first line, *positive bonding relationship*, the most straightforward definition will be that when positive bonding applies to the member-leader relationship we are referring to the concept of alliance, represented by the bonding element of the member-leader relationship. What constitutes bonding to other members and bonding to the group-as-a-whole is not so clear cut. Obviously, cohesiveness is related to these processes. But is cohesion a member-member process and/or a member-group process? That depends on the definition at hand. As mentioned earlier, some of the recent definitions of cohesion are more *interpersonal* than strictly group level (e.g., Piper et al., 1983). Moreover, items within questionnaires also ask participants to rate the behavior of other members, not always referring exclusively to the group-as-a-whole (see the items of GCQ-S and COH in the appendix). The concept of *group identification* has recently been proposed as an alternative to group cohesiveness (Hornsey et al., 2007). Group identification is clearly a member-group concept, whereas recent definitions of cohesion capture a mixture of member-member and member-group relationship. There are also several other relevant concepts possible to include within the positive bonding relationship domain, for instance the term 'attraction-to-group' (Evans & Jarvis, 1980, van Bergen & Koekebakker, 1959).

The second line in Table 3 refers to *positive working relationship*. Like above, the most uncontroversial interpretation is to define work in the member-leader relationship as related to the concept tasks/goals of alliance, in line with most theories of alliance (Horvath & Bedi, 2002). As long one keeps the definition of alliance exclusive to the relationship between patient and therapist, the process will be restricted to its original dyadic form also within groups. Of course, agreement or common dependency on tasks may also apply to other relationships, but it may then be a different phenomenon than the “contract” of alliance as defined. Interestingly, Hornsey and colleagues (2007) proposes the concept of *task interdependence* when referring to member-member working relationships in groups; the degree to which group members must rely on each other to perform their tasks effectively and to satisfy their self-interests. This intuitively seems to be a more precise conceptualization than to term member-member relationships as working alliances parallel to the member-leader agreement. Finally, in the third column of member-group relationships, how do positive working processes apply to this group level? Is it related to productivity, or perhaps commitment to group work? Another possibility is that a positive working relationship to the group level may be related to the instrumental value of the group for its members (Braaten, 1990, Stokes, 1983a; Stokes, 1993b) or the degree in which the group mediates goals for the participants.

The third line of Table 3, *negative relationship*, is related to the concepts of Avoiding and Conflict (Bakali et al., 2009; Bormann & Strauss, 2007; Johnson et al., 2005), and are usually defined within the member-group relationship as group climate dimensions. For these two concepts, it is difficult to delineate precisely if they are member-member or member-group phenomena. Intuitively, conflict may represent an interpersonal process relating more closely to the member-member dimension. Avoiding may perhaps apply to several relationship dimensions, possibly most strongly expressing a member-group process (avoiding of the

Table 4. Illustrative model of relationship contents suggested within each relationship structure.

		Relationship structure		
		Member-to-member	Member-to-leader	Member-to-group
Relationship content	Positive bonding relationship	Cohesion	Alliance – bond	Group identification
	Positive working relationship	Task interdependence	Alliance – work	Group mediated goals
	Negative relationship	Conflict	Rupture in alliance	Avoiding

“group project”). It is also less obvious how the negative relationship content may be associated to the member-leader dimension. One possibility might be to include the process of alliance *ruptures* (Safran & Muran, 2000) within this rubric.

These preliminary suggestions as delineated above are presented in Table 4. Some of the boxes are relatively straightforward to determine, whereas others are highly tentative or speculative. The main function of the model as presented is mostly to be illustrative on the *opportunities* of elaboration. Researchers could enrich the model of relationship content across relationship structures if elaborating more closely each of the nine variations of this matrix. In doing this, we are challenged to deliver more concrete definitions, i.e., when referring to cohesiveness; do we refer to a member-member process or a characteristic of the group as an entity?

In previous incorporations of the multiple relationships in groups, it has been assumed that the concepts are distributed equally across these relationships, i.e., member-leader alliance, member-member alliance, and member-group alliance (Burlingame et al., 2002), or member-leader cohesion, member-member cohesion, and member-group cohesion (Burlingame et al., 2011; Piper et al., 1983). I believe this is a less useful strategy in the building of a group

process theory. The broadening of these concepts' application may be at the expense of precision. To some degree, the concepts can also lose their intended meaning. For instance, if we refer to cohesion between patient and therapist, what is then left of the original concept describing the connectedness of the group? As Forsyth (2012) argue; cohesion comes about if, and only if, a group exists. Also, how can patients have agreement on therapy goals with the non-personified characteristics of the group-as-a-whole? After all, the concept of alliance does not equal the broader concept of therapeutic relationships (Horvath et al., 2011). My suggestion would be to theoretically and empirically elaborate on differences of contents throughout the multiple relationships in groups. This strategy may in turn make it possible to include other important concepts of therapeutic processes in groups (e.g., task interdependence and group identification).

The member-member relationship versus the member-group relationship may sometimes be difficult to differentiate theoretically. Some studies also report empirical overlap between these dimensions, leading some researchers to question if member-member and member-group relationship in fact represent one dimension (Burlingame et al., 2011).

5.2.4 Group development: The significance of time

All three studies within this thesis involve repeated measurements so that results from each study can be interpreted relative to time. The analyses from Paper I told us that patients perceive the dimensions of group processes differently later in therapy compared to the early stage. The variance component analyses of Paper II suggested that the variability of the positive relationship processes accounted for by therapists, patients, and groups also differ over time. However, it was Paper III that explicitly tracked the movement of group processes along the time-line by comparing the development of group climate in the short- and long-term format.

Several research questions were informed by the examination of group climate development in our study. One was the question of general stages in group therapy. As outlined in the introduction, there is a relatively high degree of consensus among many progressive models of group development on how the first two or three stages unfold. And, since (a) MacKenzie's model of stage development is generic in its ambitions, taking into account the most important theories of group development within the field, and (b) the Group Climate Questionnaire is designed to be sensitive of measuring these predicted stages, it was possible to link developmental theory with empirical findings in our study. Related to the question of general stages is the probability of specific (differentiated) stage configurations distinctive to formats, samples, and contexts of groups. Previous empirical studies of group climate development support the perspective of context-specific patterns rather than global patterns valid for all contexts (Bonsaksen et al., 2011; Sarol-Kulka, 2001; Tasca et al., 2006). The specific format distinction in our design was short-term vs. long-term therapy within a psychodynamic framework.

Results from Study III suggested both a 'yes' and 'no' answer to the question of a universal⁴ stage paradigm. This ambiguity of conclusions was related to the two modes of comparison applied to the short- and long-term formats in the study design. The first mode of comparison was relative to time: Is group climate development similar when comparing the 6 months of short-term therapy with the first six months of long-term therapy? The second mode of comparison was made relative to stages: Is group climate development similar when comparing early, middle, and late stages of short- and long-term therapy format?

The time-comparison across the first six months revealed that there were no differences in levels of Engagement (Cohesion) between the two lengths of group therapy; there was a relatively high level of cohesion throughout the time-period in both short- and long-term

⁴ Here, *universal* is not applied in the absolute sense of the word, meaning patterns of development valid for all groups in all contexts. Rather, universal is applied in a more limited sense, meaning predictable patterns of development given a set of premises and characteristics of the groups.

groups. However, in the examination of both Avoiding and Conflict scales there was an interaction between group length and developmental slope in the period between three and six months, as both these negative relationship processes was decreasing toward termination in short-term groups and increasing towards the half year of the long-term groups. This result suggested that group climate in short- and long-term groups between three and six months after onset can be differentiated, indicating that group members are engaged in different “projects” during this time-period. It should be noted, however, that it was only the scales of the negative relationship processes (Conflict, Avoiding) that were sensitive to this difference in development.

The stage comparison across the early, middle, and late stages of short- and long-term group psychotherapy revealed that there was a *parallel pattern* of all three group climate scales (Engaged, Conflict, Avoiding), with a general high level of engagement throughout therapy, and a low-high-low pattern of the development of Conflict and Avoiding from early to middle and late stages. Moreover, the decrease of these negative relationship processes was significantly stronger towards termination of long-term groups than was the case in short-term groups. Figures presenting the comparisons of group climate development in short- and long term group psychotherapy are found in Paper III (Bakali, Wilberg, Klungsøyr, & Lorentzen, in press, pp. 32-35).

If we compare these findings with Mackenzie’s theory of group climate development (MacKenzie, 1983; 1997a; MacKenzie & Livesley, 1983), some results support the theory whereas other findings corresponded less. The pattern for Conflict resembled perfectly the hypothesized low-high-low pattern. The pattern of Engaged revealed high levels both at early and late stages, as suggested by theory. However, we could not detect the temporary drop in engagement in the second stage, as these levels were relatively constant throughout. This does not rule out the possibility that such an interim micropattern may have occurred, or the

possibility that this pattern is valid for a subgroup of patients. Our procedures did not monitor group climate after each therapy session, rather; there was strategically chosen ‘waves’ of data collection. Therefore, our points of measurement may have missed the proposed micropattern of MacKenzie. The Avoiding scale corresponded to theory by a medium level at the middle stage and by a low level in the late stage. In contrast to theory, however, there was an early level of relatively low Avoiding in groups. As a consequence, our findings could not confirm the proposed gradual decrease of avoidance over time, since this process operated with a low-high-low pattern parallel to Conflict.

To some extent, the stage progression paradigm was supported by these results, since there were some parallels in identifiable patterns of group climate across the time-axis. Within this line of reasoning, it was important that the pattern was found in *both* formats, improving generalizability of the stages. Although not all results corresponded perfectly to the proposed theories of development, it was nevertheless important that the emerged patterns seemed clinically plausible with face validity. The results from Study III are also informative on what may be contributing mechanisms of stage progression. Our findings suggest that absolute time elapsed from therapy onset is not the core operator for identifying the actual stage of the group. Rather, the time elapsed *relative to the total time-frame* seems to be a more informative perspective for identifying when a given pattern will emerge. Previously, the so-called *punctuated equilibrium approach* to group development has been applied mainly to task-groups (Brabender & Fallon, 2009), suggesting that a group will reorganize its resources in the middle of the time-frame to increase its productivity in the second half of group life towards the time limit. Although the present research did not include task groups aiming at productivity in a strict sense, the results nevertheless supported the hypothesis of a punctuated equilibrium, where dynamics seemed to be affected by the anticipated termination of that particular group. As such, the processes of therapeutic work in psychodynamic groups may

perhaps parallel the productivity issues in task groups. MacKenzie (1997a) suggested that his developmental model may be particularly useful in time-limited brief groups. Our study indicates that the perspective may apply to time-limited long-term groups as well.

5.2.5 Negative relationship processes

Process research studies of individual and group psychotherapy alike have mostly focused on the positive relationship processes, typically through the concepts of alliance and cohesion, respectively. However, partly due to the widespread use of the Group Climate Questionnaire (MacKenzie, 1981; 1983) within group psychotherapy, the negative relationship processes of conflict and avoidance have also been a part of the research focus within this field. The scales of Conflict and Avoiding were applied in Study I and III of the present thesis, and the results indicate that the processes represented by these scales are important in the understanding of psychodynamic groups.

Results of Paper I confirmed what has previously been reported (Bormann & Strauss, 2007; Johnson et al., 2005): the negative relationship processes of conflict and avoidance represent a relatively independent factor of group processes. The negative relationship processes are not the opposite of the positive processes, and they operate in a dynamic interplay with the positive relationship processes. However, the modeling of the three factors in Paper I do not directly inform us on *how* this interplay appears.

It might be tempting to approach the negative relationship process construct as if it were, in fact, *negative*. One might get the impression that the positive processes (alliance, cohesion, work, bond) are the constructive and ‘real’ processes, and that conflict and avoiding mainly represent an interfering with the progression towards a positive outcome. From a psychodynamic point of view, resistance towards therapeutic progression and defenses against openness or insight serves natural parts of the therapeutic process (Been & Winston, 1998), and these dynamics corresponds to the concept of avoidance in the present research. Avoiding

may certainly represent a challenge or even an obstacle to therapeutic progress, but this process also serves as an important protection for immature disclosure. In group psychotherapy research, several studies have suggested that openness and self-disclosure from group participants need to be portioned and balanced, as reduced alliance and cohesiveness in group therapy is predicted when these, by definition positive processes, come too soon (Budman et al., 1993; Stokes et al., 1983). In fact, a few studies have reported that avoiding in therapy was positively related to outcome (Castonguay et al., 1998; Ryum, Hagen, Nordahl, Vogel, & Stiles, 2009). In this respect, avoidance (by individuals or through the collective dynamics) may serve important *protective* functions, which in suitable portions may in fact contribute to therapeutic gain.

Moreover, most group therapies with an interpersonal or psychodynamic approach will aim to activate the problematic patterns of each individual, which in turn often leads to inter-member friction. These evolving potentials of conflict within the group climate are not considered as something to avoid, but is rather valued as a necessity for activating the very material needed for therapeutic (interpersonal) work and gain. Of course, conflict in itself need not be therapeutic, but within these frictions lies the potential of new learning if the group manages to handle these often middle-stage challenges (Kivlighan & Lilly, 1997). As MacKenzie and colleagues argue (1987); conflict need not be negative, but it needs to be solved. Although Paper III did not investigate the relationship between group climate dimensions and outcome, there was a clear pattern of negative relationship process increasing in the mid-life of groups, followed by a decrease of these processes towards termination, especially in the long-term groups. This may indicate that the groups largely managed to solve the challenge of *interpersonal work* (MacKenzie, 1997a) that typically follows the interpersonal friction evolving in process groups.

5.2.6 Short-term versus long-term group psychotherapy

By design, group length (20 sessions, 80 sessions) was the experimental variable in the research project at large. However, the distinct function of this variable was somewhat different relative to the diverse research questions in the three studies of this thesis. In the factor analyses of Paper I, group length as a variable served a subordinated function as the main target was to model group process constructs applicable to both formats. Therefore, the variable of group length functioned as a variable to be controlled for. In Paper II, however, the two formats of group length was applied more explicitly through the variance component g , which measured the proportion of variance in alliance and cohesion accounted for by group length. Results from Study I and II indicated that the group length moderator was not important for the processes examined. That is, the factor structure of processes was not differentiated by group length, and alliance and cohesion did not vary as a function of group length, respectively. When including the results from Study III, where conflict and avoidance operated differently in short- and long-term groups from three to six months, we may then deduce that this developmental difference did not affect the *factor structure* described in Paper I. That is, the differences between short- and long-term formats found in Paper III reflect divergences in measured levels, and not in factor structure (interrelatedness).

Almost all of group therapy research is on short-term groups (Shapiro, 2012). As a consequence, results from brief group treatments have been generalized to group treatment as a whole. The present comparison of short- and long term group format helps to specify how processes operate similar or dissimilar due to group length.

6. Conclusions

Below, the most important results and conclusions from the present research are shortly punctuated, followed by a few suggested implications for clinical practice and perspectives for future directions in this field of research.

- Early in therapy, the most important factors of group processes may be termed *member-leader alliance*, *positive bonding relationship*, and *negative relationship*. At later stages these dimensions are better described as *member-leader alliance*, *member-group cohesion*, and *negative relationship*.
- Early in therapy, the patient-therapist bonding serves a bridging function between patients' experience of the member-leader and the member-group relationships, and their experience of alliance and cohesion. As a consequence, patients perceive only one process of emotional bonding early in therapy, and do not differentiate between the relationships involved.
- At later stages in group psychotherapy, patients increase their differentiation of member-leader and member-group relationships, and between alliance and cohesion. The socio-emotional bonding is then perceived specific to the relationship involved. Therefore, patients are able to perceive the member-group relationship and the member-leader relationship as distinct in group psychotherapy, even if the process is of similar content.
- The patients represent the largest clinically relevant source accounting for alliance and cohesion variance in groups.
- Therapists are important for the variance of alliance with a tendency of increased influence over time. For the variance of cohesion in groups, therapists give their strongest contribution in the middle stage.

- Group effects (therapist x group interaction) are important for alliance only in the early stage of therapy, but for cohesion also in the second stage.
- Alliance and cohesion are perceived by patients as related but different processes within group psychotherapy.
- Therapists produce nonindependence beyond the effect of the group itself.
- There is evidence for the existence of general stages of group development. However, variations may occur due to theoretical orientation, patient sample, etc.
- Relative to time, short- and long-term psychodynamic therapy reveals different patterns of group climate development.
- Relative to stage, however, the two formats of group length reveal *parallel patterns* of group climate development.
- It is the negative relationship processes of conflict and avoidance that are sensitive in differentiating the stages of group climate development, basically through a low-high-low pattern over time. The positive relationship processes are at a general high level over time within both short- and long term formats.
- The low-high-low pattern of avoidance and conflict over time is delayed but strengthened in long-term groups compared to short-term groups.
- There is some support for the so-called punctuated equilibrium approach, which suggests that characteristics of processes change in mid-life of time-limited groups.

From a clinical perspective, group therapists need to attend several group therapeutic processes simultaneously, and the relative importance of these processes may alter as therapy progresses. Early on, group therapist should contribute to the development of a positive socio-emotional climate and working alliances, so that the group can tolerate the interpersonal friction that will configure later on. The activation of these emotional investments; the

positive group engagement on the one hand, and the negative affects of resistance and conflicts on the other hand, seems to be the core precursors of the interpersonal work, deepening of involvement, differentiation, and maturity characteristic of later group life towards termination.

The differences of results found in studies that model group processes constructs raise several questions for future research. Are there differences in model structure relative to theoretical orientation? Does the model apply to non-clinical and clinical groups alike? Does factor structure change over time? Is the one-model-fits-all strategy an oversimplification of group process dimensions? Moreover, the organization of processes through the matrix of relationship content – relationship structure seems promising. Future research should elaborate theoretically and empirically the different combinations of process content across different relationship structures in group. This will increase the level of precision in defining group processes, and will enrich the number of known group phenomenon that can be included in the model. Finally, the developmental perspective is essential for small group research, and future investigations will need to apply the strategy of repeated measurements so that valid conclusions can be drawn from results. Perhaps the ultimate challenge of future group process research would be to integrate a model of relationship content/structure with a model of group development.

7. References

- Ackerman, S. J., & Hilsenroth, M. J. (2001). A review of therapist characteristics and techniques negatively impacting the therapeutic alliance. *Psychotherapy, 38*(2), 171-185.
- Ackerman, S. J., & Hilsenroth, M. J. (2003). A review of therapist characteristics and techniques positively impacting the therapeutic alliance. *Clinical Psychology Review, 23*(1), 1-33.
- Agazarian, Y., & Gantt, S. (2003). Phases of group development: Systems-centered hypotheses and their implications for research and practice. *Group Dynamics: Theory, Research, and Practice, 7*(3), 238-252.
- Agazarian, Y. M., & Janoff, S. (1993). Systems theory and small groups. In I. Kaplan & B. Sadock (Eds.), *Comprehensive textbook of group psychotherapy* (3rd ed., pp. 33-44). Maryland: Williams & Wilkins, Division of Waverly.
- Bakali, J. V., Baldwin, S. A., & Lorentzen, S. (2009). Modeling group process constructs at three stages in group psychotherapy. *Psychotherapy Research, 19*(3), 332-343.
- Bakali, J. V., Wilberg, T., Hagtvet, K. A., & Lorentzen, S., (2010). Sources accounting for alliance and cohesion at three stages in group psychotherapy: Variance component analyses. *Group Dynamics: Theory, Research, and Practice, 14*(4), 368-383.
- Bakali, J. V., Wilberg, T., Klungsøyr, O., & Lorentzen, S. (in press). Development of group climate in short- and long-term psychodynamic group psychotherapy. *International Journal of Group Psychotherapy*.
- Baldwin, S. A., Murray, D. M., & Shadish, W. R. (2005). Empirically supported treatments or Type I errors? Problems with the analysis of data from group-administered treatments. *Journal of Consulting and Clinical Psychology, 73*, 924-935.

- Baldwin, S. A., Stice, E., & Rohde, P. (2008). Statistical analysis of group-administered intervention data: Reanalysis of two randomized trials. *Psychotherapy Research, 18*(4), 365-376.
- Baldwin, S. A., Wampold, B. E., & Imel, Z. E. (2007). Untangling the alliance-outcome correlation: Exploring the relative importance of therapist and patient variability in the alliance. *Journal of Consulting and Clinical Psychology, 75*(6), 842-852.
- Bales, R. F. (1950). *Interaction process analysis: A method for the study of small groups*. Cambridge, MA: Addison-Wesley.
- Baron, R. M., & Kenny, D.A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182.
- Beck, A. P. (1983). A process analysis of group development. *Group, 7*(1), 19-26.
- Beck, A. P., & Lewis, C. M. (2000). Introduction. In A. P. Beck & C. M. Lewis (Eds.), *The process of group psychotherapy: Systems for analyzing change* (pp. 3-19). Washington, DC: American Psychological Association.
- Been, H., & Winston, A. (1998). The therapeutic alliance in brief psychoanalytic psychotherapy: A drive-conflict perspective. In J. D. Safran & J. C. Muran (Eds.), *The therapeutic alliance in brief psychotherapy* (pp. 15-37). Washington, DC: American Psychological Association.
- Bennis, W. G., & Shepard, H. A. (1956). A theory of group development. *Human Relations, 9*, 415-437.
- Bernard, H., Burlingame, G., Flores, P., Greene, L., Joyce, A., Kobos, J. C., Leszcz, M., MacNair-Semands, R. R., Piper, W. E., Slocum-McEaney, A. M., & Feirman, D. (2008). Clinical practice guidelines for group psychotherapy. *International Journal of Group Psychotherapy, 58*(4), 455-542.

- Bion, W. R. (1960). *Experiences in groups*. New York: Basic books.
- Bollen, K. A., & Hoyle, R. H. (1990). Perceived cohesion: A conceptual and empirical examination. *Social Forces*, 69(2), 479-504.
- Bonsaksen, T., Lerdal, A., Borge, F-M., Sexton, H., & Hoffart, A. (2011). Group climate development in cognitive and interpersonal group therapy for social phobia. *Group Dynamics: Theory, Research, and Practice*, 15(1), 32-48.
- Bordin, E. S. (1979). The generalizability of the psychoanalytic concept of the working alliance. *Psychotherapy: Theory, Research, and Practice*, 16(3), 252-260.
- Bordin, E. S. (1994). Theory and research on the therapeutic working alliance: New directions. In A. O. Horvath and L. S. Greenberg (Eds.), *The working alliance: Theory, research, and practice* (pp. 13-37). New York: John Wiley & Sons, Inc.
- Bormann, B., & Strauss, B. (2007). Gruppenklima, Kohäsion, Allianz und Empathie als Komponenten der therapeutischen Beziehung in Gruppenpsychotherapien – Überprüfung eines Mehrebenen-Modells. [Group climate, cohesion, alliance, and empathy as components of the therapeutic relationship within group psychotherapy – Test of a multilevel model]. *Gruppenpsychotherapie und Gruppendynamik*, 43, 1-20.
- Braaten, L. J. (1990). The different patterns of group climate critical incidents in high and low cohesion sessions of group psychotherapy. *International Journal of Group Psychotherapy*, 40, 477-93.
- Brabender, V., & Fallon, A. (2009). *Group development in practice: Guidance for clinicians and researchers on stages and dynamics of change*. Washington, DC: American Psychological Association.
- Brennan, R. L. (2001). *Generalizability theory*. New York: Springer
- Brossart, D. F., Patton, M. J., & Wood, P. K. (1998). Assessing group process: An illustration using Tuckerized growth curves. *Group Dynamics*, 2, 3-17.

- Brower, A. M. (1989). Group development as constructed social reality: A social-cognitive understanding of group formation. *Social Work with Groups, 12*(2), 23-41.
- Budman, S., Soldz, S., Demby, A., Davis, M., & Merry, J. (1993). What is cohesiveness? An empirical investigation. *Small Group Research, 24*, 199-216.
- Budman, S. H., Soldz, S., Demby, A., Feldstein, M., Springer, T., & Davis, M. S. (1989). Cohesion, alliance and outcome in group psychotherapy. *Psychiatry, 52*, 339-350.
- Burlingame, G. M. (2010). Small group treatments: Introduction to special section. *Psychotherapy Research, 20*(1), 1-7.
- Burlingame, G. M., Fuhriman, A., & Johnson, J. E. (2001). Cohesion in group psychotherapy. *Psychotherapy: Theory, Research, Practice, Training, 38*, 373-379.
- Burlingame, G. M., Fuhriman, A., & Johnson, J. E. (2002). Cohesion in group psychotherapy. In J. C. Norcross (Ed.), *Psychotherapy relationships that work* (pp. 71-87). New York: Oxford University Press.
- Burlingame, G. M., Fuhriman, A., & Mosier, J. (2003). Differential effectiveness of group psychotherapy: A meta-analytical perspective. *Group Dynamics: Theory, Research, and Practice, 7*(1), 3-12.
- Burlingame, G. M., Kircher, J. C., & Taylor, S. (1994). Methodological considerations in group psychotherapy research: Past, present and future perspectives. In A. Fuhriman & G. M. Burlingame (Eds.), *Handbook of group psychotherapy: An empirical and clinical synthesis*. New York: Wiley.
- Burlingame, G. M., MacKenzie, K. R., & Strauss, B. (2004). Small-group treatment: Evidence for effectiveness and mechanisms of change. In M. J. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (pp. 647-696). New York: Wiley.

- Burlingame, G. M., McClendon, D. T., & Alonso, J. (2011). Cohesion in group therapy. *Psychotherapy, 48*(1), 34-42.
- Burlingame, G. M., Strauss, B., Joyce, A., MacNair-Semands, R., MacKenzie, K. R., Ogrodniczuk, J., & Taylor, S. (2006). *CORE Battery – Revised: An assessment tool kit for promoting optimal group selection, process, and outcome*. New York: American Group Psychotherapy Association.
- Busseri, M. A., & Tyler, J. D. (2003). Interchangeability of the Working Alliance Inventory and Working Alliance Inventory, Short Form. *Psychological Assessment, 15*(2), 193-197.
- Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1985). The development of an instrument to assess cohesion in sport teams: The Group Environment Questionnaire. *Journal of Sport Psychology, 7*, 244-266.
- Castonguay, L. G., Pincus, A. L., Agras, W. S., & Hines, C. E. (1998). The role of emotion in group cognitive-behavioral therapy for binge-eating disorder: When things have to feel worse before they get better. *Psychotherapy Research, 8*, 225-238.
- Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*(3), 309-319.
- Cota, A. A., Evans, C. R., Dion, K. L., Kilik, L., & Longman, R. S. (1995). The structure of group cohesion. *Personality and Social Psychology Bulletin, 21*, 572-580.
- Crouch, E. C., Bloch, S., & Wanlass, J. (1994). Therapeutic factors: Interpersonal and intrapersonal mechanisms. In A. Fuhriman & G. M. Burlingame (Eds.), *Handbook of group psychotherapy: An empirical and clinical synthesis* (pp. 269-315). New York: Wiley.
- Crowe, T. P., & Grenyer, B. F. S. (2008). Is therapist alliance or whole group cohesion more influential in group psychotherapy outcomes? *Clinical Psychology and Psychotherapy, 15*, 239-246.

- DeLucia-Waack, J. L., Gerrity, D. A., Kalodner, C. R., & Riva, M. T. (Eds.) (2004). *Handbook of group counseling and psychotherapy*. Thousand Oaks, CA: Sage.
- Dierick, P., & Lietaer, G. (2008). Client perception of therapeutic factors in group psychotherapy and growth groups: An empirically-based hierarchical model. *International Journal of Group Psychotherapy, 58*(2), 203-230.
- Dion, K. L. (2000). Group cohesion: From “field of forces” to multidimensional construct. *Group Dynamics: Theory, Research, and Practice, 4*, 7-26.
- Evans, C. R., & Dion, K. L. (1991). Group cohesion and performance. A meta-analysis. *Small Group Research, 22*(2), 175-185.
- Evans, N. J., & Jarvis, P. A. (1980). Group Cohesion. A Review and reevaluation. *Small Group Behavior, 11*, 359-370.
- Festinger, L. (1950). Informal social communication. *Psychological Review, 57*, 271-282.
- First, M. B., Gibbon, M., Spitzer, R. L., Williams, J. B. W., & Benjamin, L. S. (1997). Structured Clinical Interview for DSM-IV Axis II Personality Disorders, (SCID II). Washington, DC: American Psychiatric Press, Inc.
- Fitzmaurice, G. M., Laird, N. M., & Ware, J. H. (2004). *Applied longitudinal analysis*. New Jersey: Wiley.
- Forsyth, D. R. (2012). The nature and significance of groups. In R. K. Conyne (Ed.), *The Oxford handbook of group counseling* (pp. 19-35). New York: Oxford University Press.
- Foulkes, S. H. (1948). *Introduction to group-analytic psychotherapy*. London: Heinemann.
- Foulkes, S. H., & Anthony, E. J. (1965). *Group psychotherapy: The psychoanalytic approach* (2nd ed.). Harmondsworth: Penguin Books.
- Fuhriman, A., & Burlingame, G. (1990). Consistency of matter: A comparative analysis of individual and group process variables. *Counseling Psychologist, 18*, 6-63.

- Fuhrman, A., Drescher, S., & Burlingame, G. (1984). Conceptualizing small group process. *Small Group Behavior, 15*, 427-440.
- Gersick, C. (1989). Marking time: Predictable transitions in task groups. *Academy of Management Journal, 32*, 274-309.
- Gillaspy Jr., J. A. G., Wright, A. R., Campbell, C., Stokes, S., & Adinoff, B. (2002). Group alliance and cohesion as predictors of drug and alcohol abuse treatment outcomes. *Psychotherapy Research, 12*(2), 213-229.
- Greenberg, L. S. (1986). Change process research. *Journal of Consulting and Clinical Psychology, 54*, 4-9.
- Greene, L. R. (2003). The state of group psychotherapy process research. *International Journal of Group Psychotherapy, 53*, 130-134.
- Greenson, R. (1967). *The technique and practice of psychoanalysis*. New York: International Universities Press.
- Griffith, J. (1988). Measurement of group cohesion in U. S. Army units. *Basic and Applied Social Psychology, 9*, 149-171.
- Gross, N., & Martin, W. E. (1952). On group cohesiveness. *American Journal of Sociology, 57*, 546-564.
- Hatcher, R. L., & Gillaspay, J. A. (2006). Development and validation of a revised short version of the Working Alliance Inventory. *Psychotherapy Research, 16*(1), 12-25.
- Heck, R. H., & Thomas, S. L. (2000). *An introduction to multilevel modeling techniques*. Mahwah, NJ: Erlbaum.
- Henry, W. P., & Strupp, H. H. (1994). The therapeutic alliance as interpersonal process. In A. O. Horvath & L. S. Greenberg (Eds.), *The working alliance: Theory, research, and practice* (pp. 51-84). New York: John Wiley & Sons, Inc.

- Hersoug, A. G., Høglend, P., Havik, O. E., von der Lippe, A., & Monsen, J. T. (2009). Pretreatment patient characteristics related to the level and development of working alliance in long-term psychotherapy. *Psychotherapy Research, 19*, 172-180.
- Holmes, S. E., & Kivlighan Jr., D. M. (2000). Comparison of therapeutic factors in group and individual treatment processes. *Journal of Counseling Psychology, 47*(4), 478-484.
- Hornsey, M. J., Dwyer, L., & Oei, T. P. S. (2007). Beyond cohesiveness: Reconceptualizing the link between group process and outcomes in group psychotherapy. *Small Group Research, 38*(5), 567-592.
- Horvath, A. O. (1994). Empirical validation of Bordin's pantheoretical model of the alliance: The Working Alliance Inventory perspective. In A. O. Horvath & L. S. Greenberg (Eds.), *The Working Alliance: Theory, Research, and Practice* (pp. 108-128). New York: Wiley.
- Horvath, A. O., & Bedi, R. P. (2002). The Alliance. In J. C. Norcross (Ed.), *Psychotherapy Relationships that Work* (pp. 37-69). New York: Oxford University Press.
- Horvath, A. O., Del Re, A. C., Flückiger, C., & Symonds, D. (2011). Alliance in individual psychotherapy. In J. C. Norcross (Ed.), *Psychotherapy relationships that work: Evidence-based responsiveness* (pp. 25-69). New York: Oxford University Press.
- Horvath, A. O., & Greenberg, L. S. (1989). Development and validation of the Working Alliance Inventory. *Journal of Counseling Psychology, 36*(2), 223-233.
- Hox, J. (2002). *Multilevel analysis: Techniques and applications*. Mahwah, NJ: Erlbaum.
- Hoyle, R. H., Georgesen, J. C., & Webster, J. M. (2001). Analyzing data from individuals in groups: The past, the present, and the future. *Group Dynamics, 5*, 41-47.
- Høglend, P., Amlo, S., Marble, A., Bøgwald, K-P., Sørbye, Ø., Sjaastad, M. C., & Heyerdahl, O. (2006). Analysis of the patient-therapist relationship in dynamic psychotherapy: An experimental study of transference interpretations. *American Journal of Psychiatry, 163*, 1739-1746.

- Imel, Z., Baldwin, S., Bonus, K., & Maccoun, D. (2008). Beyond the individual: Group effects in mindfulness-based stress reduction. *Psychotherapy Research, 18*(6), 735-742.
- Johnson, J. (2007). Cohesion, alliance, and outcome in group psychotherapy: Comments on Joyce, Piper, & Ogrodniczuk. *International Journal of Group Psychotherapy, 57*(4), 533-540.
- Johnson, J. E., Burlingame, G. M., Olsen, J. A., Davies, D. R., & Gleave, R. L. (2005). Group climate, cohesion, alliance, and empathy in group psychotherapy: Multilevel structural equation models. *Journal of Counseling Psychology, 52*(3), 310-321.
- Johnson, J. E., Pulsipher, D., Ferring, S. L., Burlingame, G. M., Davies, D. R., & Gleave, R. (2006). Measuring group processes: A comparison of the GCQ and CCI. *Group Dynamics: Theory, Research and Practice, 10*(2), 136-145.
- Joyce, A. S., Azim, H. F. A., & Morin, H. (1988). Brief crisis group psychotherapy versus the initial sessions of long-term group psychotherapy: An exploratory comparison. *Group, 12*(1), 3-19.
- Joyce, A. S., MacNair-Semands, R., Tasca, G. A., & Ogrodniczuk, J. S. (2011). Factor structure and validity of the Therapeutic Factors Inventory – Short Form. *Group Dynamics: Theory, Research, and Practice, 15*(3), 201-219.
- Joyce, A. S., Piper, W. E., & Ogrodniczuk, J. S. (2007). Therapeutic alliance and cohesion variables as predictors of outcome in short-term group psychotherapy. *International Journal of Group Psychotherapy, 57*(3), 269-296.
- Kaplan, S. R., & Roman, M. (1963). Phases of development in an adult therapy group. *International Journal of Group Psychotherapy, 13*(1), 10-26.
- Kendal, P. C., Holmbeck, G., & Verduin, T. (2004). Methodology, design, and evaluation in psychotherapy research. In M. J. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (pp. 16-43). New York: Wiley.

- Kenny, D. A., Mannetti, L., Pierro, A., Livi, S., & Kashy, D. A. (2002). The statistical analysis of data from small groups. *Journal of Personality and Social Psychology*, 83(1), 126-137.
- Kieffer, C. C. (2001). Phases of group development: A view from self psychology. *Group*, 25, 91-105.
- Kivlighan, D. M., Jr., & Goldfine, D. C. (1991). Endorsement of therapeutic factors as a function of stage of group development and participant interpersonal attitudes. *Journal of Counseling Psychology*, 38(2), 150-158.
- Kivlighan, D. M., Jr., & Lilly, R. L. (1997). Developmental changes in group climate as they relate to therapeutic gain. *Group Dynamics: Theory, Research, and Practice*, 3, 208-221.
- Kivlighan, D. M., Jr., Miles, J. R., & Paquin, J. D. (2012). Therapeutic factors in group-counseling: Asking new questions. In R. K. Conyne (Ed.), *The Oxford handbook of group counseling* (pp. 121-136). New York: Oxford University Press.
- Kivlighan, D. M., Jr., & Tarrant, J. M. (2001). Does group climate mediate the group leadership - group member outcome relationship? A test of Yalom's hypotheses about leadership priorities. *Group Dynamics: Theory, Research, and Practice*, 5(3), 220-234.
- Kline, R. B. (2005). *Principles and practice of structural equation modelling* (2nd ed.). New York: Guilford Press
- Knekt, P., Lindfors, O., Härkänen, T., Välikoski, M., Virtala, E., Laaksonen, M. A., Marttunen, M., Kaipainen, M., & Renlund, C. (2008). Randomized trial on the effectiveness of long- and short-term psychodynamic psychotherapy and solution-focused therapy on psychiatric symptoms during a 3-year follow-up. *Psychological Medicine*, 38(5), 689-703.
- Landis, J. R., & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics*, 33, 159-174.

- LeBon, G. (1920). *The crowd: A study of the popular mind*. New York: Fisher, Unwin.
(Original work published in 1895).
- Leiknes, K. A., Leganger, S., Malt, E. A., & Malt, U. (2001). *Mini International Neuropsychiatric Interview* (Norwegian version 5.0.0). Oslo University Hospital (Rikshospitalet): Department of neuropsychiatry and psychosomatic medicine.
- Lese, K. P., & MacNair-Semands, R. R. (2000). The Therapeutic Factors Inventory: Development of a scale. *Group, 24*(4), 303-317.
- Lewin, K. (1935). *A dynamic theory of personality: Selected papers by Kurt Lewin*.
- Lindgren, A., Barber, J. P., & Sandahl, C. (2008). Alliance to the group-as-a-whole as a predictor of outcome in psychodynamic group psychotherapy. *International Journal of Group Psychotherapy, 58*(2), 163-184.
- Lorentzen, S. (2004). Short- and long-term psychodynamic group psychotherapy. Treatment manuals. Institute of Clinical Medicine. University of Oslo, Norway.
- Lorentzen, S., Bakali, J. V., Hagtvet, K. A., Ruud, T., & Høglend, P. (2009, June). *The therapeutic alliance in psychodynamic group psychotherapy: Impact of group length, patients' perception of the therapist, and selected patient characteristics*. Panel presentation at the annual meeting of the Society for Psychotherapy Research, Santiago, Chile.
- Lorentzen, S., Høglend, P., & Ruud, T. (2008, June). *The efficacy of short- and long-term psychodynamic group psychotherapy. A Norwegian multi-center study*. Panel presentation at the annual meeting of the Society for Psychotherapy Research, Barcelona, Spain.
- Lorentzen, S., Sexton, H. C., & Høglend, P. (2004). Therapeutic alliance, cohesion and outcome in a long-term analytic group. A preliminary study. *Nordic Journal of Psychiatry, 58*, 33-40.

- MacKenzie, K. R. (1981). Measurement of group climate. *Journal of Group Psychotherapy*, 31, 287-296.
- MacKenzie, K. R. (1983). The clinical application of a group climate measure. In R. R. Dies & K. R. MacKenzie (Eds.), *Advances in group psychotherapy: Integrating research and practice* (pp. 159-170). American Group Psychotherapy Association, Monograph Series.
- MacKenzie, K. R. (1994). Group development. In A. Fuhriman & G. M. Burlingame (Eds.) *Handbook of group psychotherapy: An empirical and clinical synthesis* (pp. 223-268). New York: Wiley.
- MacKenzie, K. R. (1997a). Clinical application of group developmental ideas. *Group Dynamics: Theory, Research, and Practice*, 1(4), 275-287.
- MacKenzie, K. R. (1997b). *Time-managed group psychotherapy: Effective clinical applications*. Washington, DC: American Psychiatric Association.
- MacKenzie, K. R. (1998). The alliance in time-limited group psychotherapy. In J. D. Safran & J. C. Muran (Eds.), *The therapeutic alliance in brief psychotherapy* (pp. 193-215). Washington, DC: American Psychological Association.
- MacKenzie, K. R., Dies, D. D., Coché, E., Rutan, J. S., & Stone, W. N. (1987). An analysis of AGPA institute groups. *International Journal of Group Psychotherapy*, 37, 55-74.
- MacKenzie, K. R., & Livesley, W. J. (1983). A developmental model for brief group therapy. In R. R. Dies & K. R. MacKenzie (Eds.), *Advances in group psychotherapy: Integrating research and practice*. Madison, CT: International Universities Press.
- MacKenzie, K. R., & Tschuschke, V. (1993). Relatedness, group work, and outcome in long-term inpatient psychotherapy groups. *Journal of Psychotherapy: Practice and Research*, 2, 147-156.
- MacNair-Semands, R. R., & Lese, K. P. (2000). Interpersonal problems and the perception of therapeutic factors in group therapy. *Small Group Research*, 31(2), 158-174.

- MacNair-Semands, R. R., Ogrodniczuk, J. S., & Joyce, A. S. (2010). Structure and initial validation of a short-form of the Therapeutic Factors Inventory. *International Journal of Group Psychotherapy, 60*, 245-281.
- Mallinckrodt, B. (2000). Attachment, social competencies, social support, and interpersonal process in psychotherapy. *Psychotherapy Research, 10*, 239-266.
- Marmarosh, C. L., & Van Horn, S. M. (2012). Cohesion in counseling and psychotherapy groups. In R. K. Conyne (Ed.), *The Oxford handbook of group counseling* (pp. 137-163). New York: Oxford University Press.
- Martin, D. J., Garske, J. P., & Davis, M. K. (2000). Relation of the therapeutic alliance with outcome and other variables. A meta-analytic review. *Journal of Consulting and Clinical Psychology, 68*, 438-50.
- Marziali, E., Munroe-Blum, H., & McCleary, L. (1997). The contribution of group cohesion and group alliance to the outcome of group psychotherapy. *International Journal of Group Psychotherapy, 47*, 475-497.
- McCallum, M., & Piper, W. E. (1990). A controlled study of effectiveness and patient suitability for short-term group psychotherapy. *International Journal of Group Psychotherapy, 40*, 431-52.
- McClendon, D. T., & Burlingame, G. M. (2012). Group climate: Construct in search of clarity. In R. K. Conyne (Ed.), *The Oxford handbook of group counseling* (pp. 164-181). New York: Oxford University Press.
- McDougall, W. (1920). *The group mind*. New York: Putnam.
- McGrath, J. E., Arrow, H., & Berdahl, J. L. (2000). The study of groups: Past, present, and future. *Personality and Social Psychology Review, 4*(1), 95-105.

- McRoberts, C., Burlingame, G. M., & Hoag, M. J. (1998). Comparative efficacy of individual and group psychotherapy: A meta-analytic perspective. *Group Dynamics: Theory, Research, and Practice*, 2(2), 101-117.
- Mudrack, P. E. (1989). Defining group cohesiveness: A legacy of confusion? *Small Group Behavior*, 20, 37-49.
- Muran, J. C., & Safran, J. D. (1998). Negotiating the therapeutic alliance in brief psychotherapy: An introduction. In J. D. Safran & J. C. Muran (Eds.), *The therapeutic alliance in brief psychotherapy* (pp. 3-14). Washington, DC: American Psychological Association.
- Muthén, L. K., & Muthén, B. O. (2007). *Mplus users guide* (5th ed.). Los Angeles: Muthén & Muthén.
- Norcross, J. C., & Lambert, M. J. (2011). Evidence-based therapy relationships. In J. C. Norcross (Ed.), *Psychotherapy relationships that work: Evidence-based responsiveness* (pp. 3-21). New York: Oxford University Press.
- Phipps, L. B., & Zastowny, T. R. (1988). Leadership behavior, group climate and outcome in group psychotherapy: A study of outpatient psychotherapy groups. *Group*, 12, 157-171.
- Pinsof, W. M., & Catherall, D. R. (1986). The integrative psychotherapy alliance: Family, couple and individual therapy scales. *Journal of Marital and Family Therapy*, 12, 137-151.
- Piper, W. E., Azim, H. F., Joyce, A. S., McCallum, M., Nixon, G. W., & Segal, P. S. (1991). Quality of object relations versus interpersonal functioning as predictors of therapeutic alliance and psychotherapy outcome. *Journal of Nervous and Mental Diseases*, 179, 432-38.

- Piper, W. E., Debbane, E. G., Bienvenu, J. P., & Garant, J. (1984). A comparative study of four forms of psychotherapy. *Journal of Consulting and Clinical Psychology, 52*, 268-279.
- Piper, W. E., Marrache, M., Lacroix, R., Richardsen, A. M., & Jones, B. D. (1983). Cohesion as a basic bond in groups. *Human Relations, 36*(2), 93-108.
- Pratt, J. H. (1907). The class method of treating consumption in the homes of the poor. *Journal of the American Medical Association, 49*, 755-799.
- Ryum, T., Hagen, R., Nordahl, H. M., Vogel, P. A., & Stiles, T. C. (2009). Perceived group climate as a predictor of long-term outcome in a randomized controlled trial of cognitive behavioral group therapy for patients with comorbid psychiatric disorders. *Behavioral and Cognitive Psychotherapy, 11*, 1-14.
- Safran, J. D., & Muran, J. C. (2000). *Negotiating the therapeutic alliance: A relational treatment guide*. New York: The Guilford Press.
- Sarol-Kulka, A. (2001). Group dynamics in psychotherapy of patients with personality disorders. *Archives of Psychiatry and Psychotherapy, 3*(1), 31-41.
- Sexton, H. (1993). Exploring a psychotherapeutic change sequence: Relating process to intersessional and posttreatment outcome. *Journal of Consulting and Clinical Psychology, 61*, 128-136.
- Shavelson, R. J., & Webb, N. M. (1991). *Generalizability theory*. London, UK: Sage.
- Shapiro, J. L. (2012). Brief group treatment. In R. K. Conyne (Ed.), *The Oxford handbook of group counseling* (pp. 487-510). New York: Oxford University Press.
- Shedler, J. (2010). The efficacy of psychodynamic psychotherapy. *American Psychologist, 65*(2), 98-109.

- Silbergeld, S., Koenig, G. R., Manderscheid, R. W., Meeker, B. F., & Hornung, C. A. (1975). Assessment of environment-therapy systems: The Group Atmosphere Scale. *Journal of Consulting and Clinical Psychology, 43*(4), 460-469.
- Stokes, J. P. (1983a). Components of group cohesion: Intermember attraction, instrumental value, and risk taking. *Small Group Behavior, 14*(2), 163-173.
- Stokes, J. P. (1983b): Toward an understanding of cohesion in personal change groups. *International Journal of Group Psychotherapy, 33*(4), 449-467.
- Stokes, J., Fuehrer, A., & Childs, L. (1983). Group members' self-disclosures: Relation to perceived cohesion. *Small Group Behavior, 14*(1), 63-76.
- Strauss, B., Burlingame, G. M., & Bormann, B. (2008). Using the CORE-R battery in group psychotherapy. *Journal of Clinical Psychology: In Session, 64*, 1225-1237.
- Tasca, G. A., Balfour, L., Ritchie, K., & Bissada, H. (2006). Developmental changes in group climate in two types of group therapy for binge-eating disorder: A growth curve analysis. *Psychotherapy Research, 16*(4), 499-514.
- Tasca, G. A., Flynn, C., & Bissada, H. (2002). Comparison of group climate in an eating disorders partial hospital group and a psychiatric partial hospital group. *International Journal of Group Psychotherapy, 52*(3), 409-417.
- Tasca, G. A., Illing, V., Joyce, A. S., & Ogradniczuk, J. S. (2009). Three-level multilevel growth models for nested change data: A guide for group treatment researchers. *Psychotherapy Research, 19*, 453-461.
- Taube-Schiff, M., Suvak, M. K., Antony, M. M., Bieling, P. J., & McCabe, R. E. (2007). Group cohesion in cognitive-behavioral group therapy for social phobia. *Behavior Research and Therapy, 45*, 687-698.
- Tichenor, V., & Hill, C. E. (1989). A comparison of six measures of working alliance. *Psychotherapy, 26*, 195-199.

- Tracey, T. J., & Kokotovic, A. M. (1989). Factor structure of the Working Alliance Inventory. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 1*(3), 207-210.
- Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological Bulletin, 63*(6), 384-399.
- Tuckman, B., & Jensen, M. (1977). Stages of small group development revisited. *Group and Organizational Studies, 2*, 419-427.
- van Bergen, A., & Koekebakker, J. (1959). Group cohesiveness in laboratory experiments, *Acta Psychologica, 16*, 81-98.
- Wampold, B. E., & Brown, G. S. (2005). Estimating variability in outcomes attributable to therapists: A naturalistic study of outcomes in managed care. *Journal of Consulting and Clinical Psychology, 73*(5), 914-923.
- Ward, D. E. (2012). Definition of group counseling. In R. K. Conyne (Ed.), *The Oxford handbook of group counseling* (pp. 36-51). New York: Oxford University Press.
- Wheelan, S. A. (1997). Group development and the practice of group psychotherapy. *Group Dynamics: Theory, Research, and Practice, 1*(4), 288-293.
- Yalom, I. D., & Leszcz, M. (2005). *The theory and practice of group psychotherapy* (5th ed.). New York: Basic Books.
- Zaccaro, S. J. (1991). Nonequivalent associations between forms of cohesiveness and group-related outcomes: Evidence for multidimensionality. *Journal of Social Psychology, 131*, 387-399.

8. Papers I-III

9. Appendix

The Working Alliance Inventory – Short Form

1 = never, 2 = rarely, 3 = occasionally, 4 = sometimes, 5 = often, 6 = very often, 7 = always

1. The therapist and I agree about the things I will need to do in therapy to help me improve my situation.

1 2 3 4 5 6 7

2. What I am doing in therapy gives me new ways of looking at my problem.

1 2 3 4 5 6 7

3. I believe the therapist likes me.

1 2 3 4 5 6 7

4. The therapist does not understand what I am trying to accomplish in therapy.

1 2 3 4 5 6 7

5. I am confident in the therapist's ability to help me.

1 2 3 4 5 6 7

6. The therapist and I are working towards mutually agreed upon goals.

1 2 3 4 5 6 7

7. I feel that the therapist appreciates me.

1 2 3 4 5 6 7

8. We agree on what is important for me to work on.

1 2 3 4 5 6 7

9. The therapist and I trust one another.

1 2 3 4 5 6 7

10. The therapist and I have different ideas of what my problems are.

1 2 3 4 5 6 7

11. We have established a good understanding of the kind of changes that will be good for me.

1 2 3 4 5 6 7

12. I believe the way we are working with my problems is correct.

1 2 3 4 5 6 7

Cohesiveness Scale

This measure asks you to focus on your experiences in your therapy group. Use the following rating scale to respond to each of the following items:

- 1 = not at all
- 2 = a little bit
- 3 = somewhat
- 4 = moderately
- 5 = quite a bit
- 6 = a great deal
- 7 = extremely

1. Even though others may disagree with me sometimes, I feel accepted in group.
1 2 3 4 5 6 7
2. We cooperate and work together in group.
1 2 3 4 5 6 7
3. I feel accepted by the group.
1 2 3 4 5 6 7
4. The members distrust each other.
1 2 3 4 5 6 7
5. I feel a sense of belonging in this group.
1 2 3 4 5 6 7
6. I feel good about being a part of this group.
1 2 3 4 5 6 7
7. Group members don't express caring for one another.
1 2 3 4 5 6 7
8. We trust each other in my group.
1 2 3 4 5 6 7
9. Even though we have differences, our group feels secure to me.
1 2 3 4 5 6 7

Group Climate Questionnaire – Short Form

This measure asks you to focus on your impressions of **your therapy group as a whole**. Use the following rating scale to respond to each of the following items:

- 0 = not at all
- 1 = a little bit
- 2 = somewhat
- 3 = moderately
- 4 = quite a bit
- 5 = a great deal
- 6 = extremely

1. The members have liked and cared about each other.
0 1 2 3 4 5 6
2. The members have tried to understand why they do the things they do, tried to reason it out.
0 1 2 3 4 5 6
3. The members have avoided looking at important issues going on between themselves.
0 1 2 3 4 5 6
4. The members have felt that what was happening was important and there has been a sense of participation.
0 1 2 3 4 5 6
5. The members have depended upon the group leader for direction.
0 1 2 3 4 5 6
6. There has been friction and anger between the members.
0 1 2 3 4 5 6
7. The members have been distant and withdrawn from each other.
0 1 2 3 4 5 6
8. The members have challenged and confronted each other in their efforts to sort things out.
0 1 2 3 4 5 6
9. The members have appeared to do things the way they thought would be acceptable to the group.
0 1 2 3 4 5 6
10. The members have distrusted and rejected each other.
0 1 2 3 4 5 6
11. The members have revealed sensitive personal information or feelings.
0 1 2 3 4 5 6
12. The members have appeared tense and anxious.
0 1 2 3 4 5 6

