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**INTERGROUP CONFLICT IN ORGANISATIONS:  
PREDICTORS AND RELATIONSHIPS WITH TEAM WORKING EFFECTIVENESS**

Andreas Wilhelm Richter

Thesis submitted to the University of Aston in part fulfilment of the requirements of  
the degree of Doctor of Philosophy

ASTON UNIVERSITY

October 2005

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**THESIS SUMMARY**

This thesis begins with a review of the conflict literature. It continues with an illustration of the nature of intergroup conflict between British health care teams, by presenting results from an interview study using the critical incident technique. Within the theory testing part, drawing upon a sample of 53 British health care teams from five organisations, an empirical test of both intergroup contact and social identity theory is provided. In a next step, a measure of intergroup effectiveness, the effectiveness with which dyads of groups perform on collaborative tasks, is developed. Finally, the moderating role of both resource interdependence and group boundary spanners' negotiation style for the relationship between intergroup competition and longitudinal change in group and intergroup effectiveness is examined.

**Key Words:** Intergroup conflict, intergroup effectiveness, conflict management

## PUBLICATIONS AND PRESENTATIONS RESULTING FROM THIS WORK

### PUBLICATIONS:

- Dawson, J. F., & Richter, A. W. (in press). Probing three-way interactions in moderated multiple regression analysis: Development and application of a slope difference test. *Journal of Applied Psychology*.
- Richter, A. W., West, M. A., van Dick, R., & Dawson, J. F. (in press). Boundary spanners' identification, intergroup contact and effective intergroup relations. *Academy of Management Journal*.
- Richter, A. W., Scully, J., & West, M. A. (2005). Intergroup conflict and intergroup effectiveness in organizations: Theory and scale development. *European Journal of Work and Organizational Psychology*, 14(2), 177-203.

### PRESENTATIONS:

- Dawson, J., & Richter, A. W. (2005). *A significance test of slope differences for three-way interactions*. Poster presented at the Annual Meeting of the Society for Industrial and Organizational Psychology, Los Angeles, CA.
- Richter, A. W., West, M. A., Sacramento, C. A., & Hirst, G. (2005). *The relationship between intergroup competition and longitudinal change in group effectiveness*. Poster presented at the Annual Meeting of the Academy of Management, Honolulu, HA.
- Richter, A. W., van Dick, R., & West, M. A. (2004). *The relationship between group and organizational identification and effective intergroup relations*. Paper presented at the Annual Meeting of the Academy of Management, New Orleans, LA (awarded best student paper division Conflict Management).
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## INTRODUCTION

Conflict between groups is an unavoidable reality for team based organisations. While it is widely acknowledged that the potential of organisational intergroup conflict is rooted in structural characteristics such as the diversification of work force (Burns & Stalker, 1968; Lawrence & Lorsch, 1967), social psychological factors, such as the categorisation of individuals into social groups, have more recently been discussed as triggers of intergroup rivalry and competition (e.g., Hogg & Terry, 2000; Kramer, 1991). Social psychological theories have received strong support as predictors of intergroup conflict in experimental settings, predominantly based on student ad-hoc groups (see Brewer & Brown, 1998; Brown & Hewstone, 2005, for overviews). Yet their validity and usefulness may be over-estimated in terms of power in predicting conflict between organizational groups sharing a past and a future. What contributions can social psychology make to the understanding of organizational intergroup conflict beyond structural characteristics? And to what extent may social psychological theories represent a useful guide for the management of the psychological side of intergroup conflict? One part of this thesis is an attempt to answer these questions.

On another front, theoretical and empirical work has discussed conflict and competition between groups as a pitfall for team based organisations (e.g., Schein, 1988; Tjosvold, 1991). Intergroup conflict can cost time and money: Groups compete with each other for limited organizational resources (Kramer, 1991); they fail to integrate their diverse activities into overarching organizational strategies (Lawrence & Lorsch, 1967); and departmental heads spend too much time negotiating conflicts of interest at the interface between groups (cf. Blake, Shepard, & Mouton, 1964). Conversely, researchers have also suggested that conflict may have beneficial effects for organisations: Competition between groups may stimulate motivation and enhance group performance (Erev, Bornstein, & Galili,

1993); conflict channels activities (Walton & Dutton, 1969); and dissent between and among groups may result in organizational change and innovation (Richter, Sacramento, & West, 2005). Yet beyond these theoretical considerations, empirical evidence systematically investigating the role of intergroup competition and how it affects aspects of organizational effectiveness is much needed (Guzzo & Shea, 1992; Rahim, 2001). How is competition between groups related to the effectiveness with which groups perform their tasks? And what can organisations do in order to manage conflict constructively to enhance team working effectiveness? Another part of this thesis provides an attempt to answer these questions.

### **Contribution to Knowledge**

In summary, the thesis addresses two sets of questions: First, factors predicting and explaining conflict between organizational groups are identified; and second, the relationship between intergroup competition and change in team working effectiveness is examined.

### **Thesis Overview**

This thesis has four parts. Part A aims to acquaint the reader with the phenomenon of organizational conflict between groups, as well as to provide an overview of this research project. It is subdivided into four chapters. Chapter 1 outlines a process model of the conflict episode, as an attempt of a definition of conflict; provides a literature review about conflict concepts and typologies commonly used in organizational research; and illustrates how the organizational context may shape conflict between work groups. Chapter 2 presents results from an interview study focusing on critical conflict incidents, in order to describe and illustrate what conflict between health care groups in this research sample actually looks like. As intergroup conflict is an aspect of intergroup relations, chapter 3 provides an overview of



intergroup relations theories relevant for organisations. The chapter continues by explicating and evaluating theories of intergroup conflict, grouped into theories that either predict intergroup conflict, or view intergroup conflict as a condition. Thereby the stage is set for the theory testing parts B and C of this thesis, which investigate intergroup conflict as either an outcome variable or a predictor. Before the theory testing part begins, chapter 4 provides an outline of the research project's design, procedure, sample, and the methodological strategies employed.

Part B is an attempt to revert to social psychological theories, such as social identity theory, in order to develop and test a theoretical model explaining how group representatives affect the amount of conflict between organizational groups (chapter 5).

Part C is concerned with the question of how intergroup competition may affect team working effectiveness. I posit that team working effectiveness embraces two aspects, first how well team members work together as a group (group effectiveness); and second how well different teams work jointly together as a group dyad in pursuit of common goals (intergroup effectiveness). Therefore I first develop a scale of intergroup effectiveness, and examine its psychometric properties (chapter 6). I continue by developing and testing a theoretical model of the relationship between intergroup competition and longitudinal change in group and intergroup effectiveness (chapter 7).

Part D aims to integrate and discuss the findings of this thesis (chapter 8). It starts by presenting refined models for predicting intergroup conflict, as well as the effect of intergroup competition on team working effectiveness. Study implications for theory and practice are discussed. The chapter concludes with study limitations, and how these may be addressed by future research.

## **Part A: INTERGROUP CONFLICT: THEORIES, CONCEPTS, AND METHODOLOGY**

### **Chapter 1: Intergroup conflict in organisations**

#### **1.0 CHAPTER SUMMARY**

The purpose of this chapter is to provide a review of the theoretical and empirical conflict literature, in order to acquaint the reader with the phenomenon of organizational conflict. The chapter has three parts. In the first part, definitional aspects of conflict, and a process model of the conflict episode are presented. The second part is concerned with attributes of intergroup conflict used within the literature, and an attempt is made to integrate those attributes into the conflict process. The third part outlines the role of the organizational context for intergroup conflict.

#### **1.1 TOWARD A DEFINITION OF CONFLICT?**

Conflict in organisations can emerge at different levels. Rahim (1986) distinguishes intergroup conflict from intrapersonal, interpersonal, and intragroup conflict. Intergroup conflict in particular can occur between vertical (e.g., labour management conflict) or horizontal levels (e.g., conflict between functional groups like sales and marketing). This raises the question of whether the conflict construct is the same at different layers. Experimental research on the “group discontinuity effect” suggests that, under equal interdependence conditions, groups behave more competitively than individuals do (see Schopler et al., 2001, for an overview). Similarly, conflict generating factors such as social

categorisation and interdependence over a pool of limited resources appear to be more pronounced for the emergence of intergroup than interpersonal conflict (cf. Kramer, 1991). Thus, research supports the view that interpersonal and intergroup conflict vary regarding both their intensity and conflict generating factors; yet conflict appears to be the same phenomenon irrespective of whether it occurs between individuals or groups. Analogously, reviews of organizational conflict do discuss different conflict generating factors, but do not distinguish interpersonal from intergroup conflict (e.g., De Dreu, Harinck, & van Vianen, 1999; Thomas, 1992; Wall & Callister, 1995). Therefore definitions and concepts of intrapersonal, interpersonal, and intragroup conflict are deemed relevant for an understanding of intergroup conflict.

#### 1.1.1 Definitions of Conflict

The starting point for understanding intergroup conflict often varies across different social science disciplines like anthropology, political science, sociology, or psychology (Jussim, Ashmore & Wilder, 2001). Definitions of conflict depend on the theoretical framework the research is embedded in. Within social psychology, conflict is often defined as some sort of *incompatibility* of goals, beliefs, attitudes, and/or behaviour (e.g., Myers, 1999; Jussim et al., 2001), and individual-level explanations are provided with laboratory experimentation as the method of choice. Based on social identity and self categorisation theory, social psychologists often refer to conflict between groups in terms of intergroup bias (Hewstone & Greenland, 2000; Tajfel & Turner, 2001). Conversely, based on the theory of cooperation and competition, Tjosvold (1998) and Deutsch (1969) define conflict as incompatible activities between parties, thereby separating conflict explicitly from goal interdependence, and challenging the common assumption that cooperation and conflict are opposites. Similarly, Putnam and Poole (1987) describe three general properties among more



inclusive definitions of conflict, being means interdependence between parties (such that one can interfere with the other), perceptions of incompatibility of goals or concerns, and interaction.

De Dreu et al. (1999) conclude that despite many attempts to define conflict, an academic definition of conflict does not exist. Instead, they describe conflict as a tension an individual or group experiences because of perceived differences with another party. Instead of attempting to define conflict more precisely, researchers reverted to describing the conflict episode or process, and defining elements thereof (e.g., De Dreu et al., 1999; Pondy, 1967; Thomas, 1992).

### 1.1.2 The Conflict Process

Thomas (1992) describes the conflict episode as a process that starts with one party's *awareness* of a conflict (Figure 1). This awareness may involve a variety of concerns or issues, e.g. a threat of a party's interest, or perceived goal differences. This awareness leads to diverse *cognitions* and *emotions*, which result in *behavioural intentions* regarding how to cope with the conflict (these are referred to as motivation by De Dreu et al., 1999). These intentions are the combined motivational forces produced by cognitions and emotions. Behavioural intentions in turn lead to observable *behaviour*, reacted upon by the other party. This reaction is represented by the loop in Figure 1, which affects and reshapes the thoughts and emotions. Finally, behaviour results in *conflict outcomes*. These outcomes may in turn set the stage on a subsequent episode about the same issue.

## **FIGURE 1**

**The Conflict Process (Adapted from Thomas, 1992, p. 658)**



## **1.2 CONFLICT TYPOLOGIES**

Researchers have used a variety of different conceptualisations and typologies of conflict. In the remainder of this chapter, I attempt to integrate most frequently used typologies into Thomas's model of the conflict process.

### 1.2.1. Conflict Awareness

Many conceptualisations of what conflict is about exist. The most commonly used may be conflict over issues, goals, and means.

*Conflict over issues.* De Dreu et al. (1999) argue that both an advantage and a problem pertain to classifying conflict as a function of the conflict issue. While the advantage is analytical, helping one to focus on and analyse specific process features, the drawback is that conflict issues normally both do not come alone and are quickly joined by others (Rubin, Pruitt, & Kim, 1994). A related drawback may be that focusing on a particular conflict issue might be deficient in describing and analysing the complex relationship between two parties sharing a past and a future. Several conflict typologies distinguished substantive or realistic conflicts rooted in divergence of interests from conflict concerned with affective or cognitive aspects. For example, Guetzkow and Gyr (1954) distinguished substantive conflict from affective conflict. While the former is concerned with the substance of the task a group is performing, the latter is concerned with the emotional aspects of interpersonal relationships (Jehn & Bendersky, 2003). Similarly, De Dreu et al. (1999) distinguish conflict over resources or interests from conflict over information. The former involves access to and distribution of resources. Examples may include a dispute between two team leaders about which health care team should cover a patient, or whether or not a nurse should take on patient treatment duties of another team. The latter contains both intellectual and evaluative issues. Intellectual issues have factual solutions according to commonly accepted standards, such as what is the most cost-efficient PC equipment. For intellectual issues, the task is to find the true or correct solution, and accuracy of resolution has priority over agreement (Brehmer, 1976). An example would be a disagreement about the solution to a statistical problem. Pinkley (1990) supported this dimension in his multidimensional scaling study, and found that intellectual cognitive frames define whether the conflict is about intellectual issues or about



emotional issues. On the other hand, evaluative or judgmental issues may involve ethical or aesthetic judgements for which there are no demonstrably correct answers (Kaplan & Miller, 1987). Thus, for evaluative issues, the “right” answer is achieved by reaching consensus. An example might be a conflict between two employees about what colour to choose for painting the office wall, a disagreement about behavioural norms within a Business School, or a dispute about the dressing code within a consultancy company.

Further aspects by which a conflict issue may be characterised are its scope and integrative potential. The *scope* of the incident assessed whether conflicts are perceived as more serious, i.e. involve larger numbers of people, more events, or greater influence over future interactions (cf. Thomas, 1992; Jehn, 1997). Thomas (1992) concludes that very large issues raise the motivation to make integrative outcomes seem impossible, to raise the stakes dramatically, and to generate high levels of threat and defensiveness. The *integrative potential* measures the capability of a situation to integrate the interests of both parties (i.e., both parties could potentially reach a win-win situation; Pruitt & Carnevale, 1993). If an incident has high integrative potential, it would be possible to integrate the interests of both parties. If integrative potential is low, it is hardly possible to integrate the interests of both parties.

**Conflict over goals.** Cosier and Rose (1977) distinguish goal conflict from cognitive conflict, the former involving disagreements that focus on competition for rewards or status. Klar, Bar-Tal and Kruglanski (1987; in Pinkley, 1990) even suggested that the core of the conflict schema is the belief that the parties involved have incompatible goals. Using Multidimensional Scaling, Pinkley (1990) supported a related dimension which he labelled *cooperate vs. win*, and concluded that people make different attributions regarding blame for the conflict. Some disputants see both parties responsible for the conflict and therefore seek a compromise solution. Others assign blame to the other party while expecting to be compensated for their victimisation, therefore maximising their own gains even at the expense of the other party.

Studies examining the roots of individuals' conclusions about conflicting goals between groups and departments identified both a structural and psychological basis. For instance, Tjosvold's (1988a) critical incident study with managers and employees of an engineering consulting firm showed that reasons for employees' perceptions of competitive goals were a party's lack of concern for each other's interests, conflict defined as win lose contests, and competition over scarce resources between departments. Similarly, Tjosvold (1988b) found in a public health agency that reasons for cooperative goals between groups were predominantly employees' perceptions of a shared purpose and common tasks.

*Conflict over means.* Two issues question whether incompatible goal approaches fully explain the dynamics of intergroup conflict. First, individuals sharing cooperative goals can be, and often are in conflict (Deutsch, 1969, p. 8; Tjosvold, 1998, p. 287). Second, alternative factors unrelated to the perceived goal structure, such as status differences (Terry & O'Brien, 2001), social categorisation (Insko & Schopler, 1998; Kramer, 1991), and group identification (e.g., Brown, Connor, Mathews, Wade, & Williams, 1986), appear to operate as conflict generating factors.

Jehn examined intragroup conflict in organisational groups using multiple methods (Jehn, 1994; 1995; 1997). Confirming Pinkley's task vs. relationship dimension for work groups, she distinguishes relationship conflict from task conflict. *Relationship conflict* mainly includes affective components, such as dislike and feelings of annoyance and irritations. *Task conflict* is characterised as an awareness of differences in viewpoints and opinions pertaining to a task *without* the personal animosities germane to relationship conflict. It may coincide with animated discussions and personal excitement, but is void of the intense interpersonal negative emotions associated with relationship conflict. Jehn's concept of task conflict displays some conceptual overlap with concepts such as cognitive conflict (Brehmer, 1976; Cosier & Rose, 1977), devil's advocacy (see Schwenk, 1990; Schweiger, Sandberg, & Ragan, 1986), constructive controversy (Tjosvold & Deemer, 1980), or minority dissent (see De Dreu



& De Vries, 1997, for an overview). In concordance with these concepts, task conflict refers to a form of constructive disagreement or controversy, proposed to have beneficial effects on the quality of team decision making. These differences in viewpoints may facilitate dialectically styled discussions which prevent group think. The controversy may also enhance the scrutinization and utilisation of different perspectives, which is considered pivotal for the quality of strategic decision-making and innovation (cf. Tjosvold, 1998).

In addition to these two dimensions, Jehn discovered a third dimension, labelled *process conflict* (Jehn, 1997; Jehn & Bendersky, 2003; Jehn & Mannix, 2001). Process conflict is the least examined type of conflict in the literature and refers to how task accomplishment should be proceeded. It might be best marked by issues of duty and resource delegation, such as “who should do what and how much responsibility different people should get” (Jehn & Mannix, 2001).

### 1.2.3 Thoughts and Emotions

A strong contribution toward understanding conflict has been made by studies that investigated how individuals cognitively frame and make sense of the conflict they experience. Frames can be described as thematic perceptual dispositions that increase the salience of frame-irrelevant information, and are related to both cognitions and emotions (De Dreu et al., 1999). Frames are perceptual sets of orientations that are pre- or meta-schematic and serve to guide how information is perceived and interpreted in terms of these schemata (Pinkley & Northcraft, 1994). Research has identified outcome frames, which refer to whether outcomes are coded as gains or losses (e.g., De Dreu & McCusker, 1997), and conflict frames, which refer to how people cognitively frame everyday conflict they are involved in, the latter being of interest for this thesis. Using Multidimensional Scaling, Pinkley (1990) revealed three dimensions of conflict frames: The *task vs. relationship* dimension illustrates

that people differ in the extent to which they attribute the conflict to problems in the relationship and, consequently, how concerned they are about the other party and maintaining the relationship. While disputants with a task orientation focus more on material aspects of a dispute, such as money or property settlements, relationship oriented disputants rather focus on interpersonal concerns and the relationship involved. The second dimension was labelled *cooperate vs. win*, and implied that a discrepancy exists in the attributions made regarding blame for the conflict. Some disputants attribute blame to both parties and seek a compromise solution. Others concentrate on winning the conflict, as the other party is to blame. The third dimension was labelled *emotional vs. intellectual*, and emphasises the variance in degree of attention paid to the affective component of conflict. Although some disputants focus on the feelings involved (e.g., anger and frustration), others seem to attend only to the specific behaviour and thoughts involved. Disputants' conflict frames interestingly tend to converge during negotiation toward a consensual perspective (Pinkley & Northcraft, 1994).

Related to Pinkley's last dimension is the concept of *emotionality of the incident*, which refers to the extent that individuals have feelings such as jealousy, hatred, anger, and frustration. Jehn and Bendersky's (2003) review and comprehensive model identify emotionality as a separate dimension that moderates the conflict-outcome relationship for within group conflict. Conflict is often associated with stress and threat, which increase emotional responses and negative arousal (Jehn, 1997).

#### **1.2.4 Intentions (Motivation)**

De Dreu et al. (1999) describe that motivation is frequently concerned with the desired contribution of outcomes between the parties involved. The authors distinguish three motivations (cf. Deutsch, 1949, 1973). A disputant's competitive motivation is characterised by reaching a relative advantage over the other party. Individualistic motivation is

characterised by an ignorance of the other party's outcome, and disputants are concerned with their own outcome. Finally, prosocial motivation is characterised by disputants concern for both the own and the other party. De Dreu et al. (1999) outline that social motives are partially rooted in individual differences, but may also be triggered by features of the situation, or may be adopted for genuine or instrumental reasons (cf. Steinel & De Dreu, 2004). Similarly, negotiators' motivation to consider opponent's emotions can affect whether or not they are influenced by them (van Kleef, De Dreu, & Manstead, 2004).

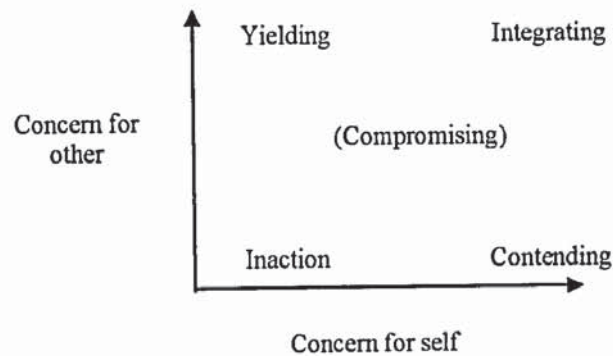
### **1.2.5 Conflict Behaviour**

Conflict behaviour is a core aspect of the conflict episode (Thomas, 1992), as captured by dual concern theory (Blake & Mouton, 1964; Deutsch, 1973; Pruitt & Rubin, 1986), which represents an extension of Blake and Mouton's (1964) Managerial Grid.

The theory considers negotiation style as a function of the two motivations high or low concern for the own, combined with high or low concern for the other party. It suggests individuals' and groups' negotiation behaviour can be characterised by combinations of both concerns yielding five negotiation styles, which have been confirmed empirically in a number of studies (see Van de Vliert & Kabanoff, 1990; Pruitt & Carnevale, 1993, for an overview; see Figure 2). The strategies were used empirically to assess the way people most commonly deal with conflict (e.g., De Dreu & Van Vianen, 2001) as well as how people handle particular conflict incidents (Van de Vliert & Kabanoff, 1990; Callister & Wall, 2001). The strategies were found empirically relevant for negotiation between individuals (e.g., De Dreu & Van Vianen, 2001) and also between groups (Nauta & Sanders, 2000; Lawrence & Lorsch, 1967).



**FIGURE 2**  
**The Dual Concern Model**



*Contending* refers to imposing one's will on the other party. Alternative terms used are competing, win-lose, dominating, and forcing. Thomas (1992) explains that in goal conflicts the intention is to achieve one's goal at the sacrifice of the other's goal. In intellectual conflicts, an attempt is made to convince the other party that one's conclusion is right and the other is wrong. During evaluative conflict, Thomas describes that "one tries to make the offending party accept blame for some perceived transgression, together with any responsibilities attached to blame (guilt, punishment, restitution, etc.)". The flip side of contending is *yielding*, which refers to accepting and incorporating the other's will. Alternative terms are accommodating, obliging, smoothing over, and yielding-losing. Thomas describes that in goal conflicts this intention may represent "an attempt to attain the other's goals at the sacrifice of the own goals, and in intellectual and evaluative conflict to support the other's opinion despite one's own reservations, or to forgive the other for a perceived transgression and to allow subsequent ones." *Avoiding* involves active withdrawal and passive avoidance. Other expressions used within the literature are withdrawing, lose-leave, and inaction. By using this technique, "one tries to avoid involving oneself in an issue, allowing events to take their own course without attempting to steer the outcome toward the concern of

either party.” *Problem solving* is characterised by an attempt of a party to achieve a settlement that satisfies the concerns of both parties. Other terms used have been collaborating, synergy, integrating, and confronting, i.e. confrontation in order to work the conflict through (Thomas, 1992). While during goal conflicts one attempts to find a win-win solution that allows both parties’ goals to be completely achieved, in intellectual conflicts the goal is to achieve a synthesis (Hegel, 1964), a new conclusion or idea that incorporates the valid insights of both parties. In evaluative conflict one might try to arrive at a shared set of expectations and an interpretation of the transgression in question that meets both parties’ standards of what is proper in a given situation (De Dreu et al., 1999). There is some disagreement in the literature as to whether *compromising* reflects a fifth negotiation style, or rather a form of tentative problem solving (Pruitt & Rubin, 1986). Compromising is also referred to as splitting the difference, or sharing, as it is intended to seek an outcome between the preferred outcomes and positions of both parties. It involves attaining moderate but incomplete satisfaction of both parties’ concerns.

Alternative conceptualisations of conflict management include the use of Deutsch's (1949, 1973) one-dimensional dichotomy of cooperation and competition, or Horney's (1945) trichotomy of moving away, moving toward, and moving against (for an overview of taxonomies, see Van de Vliert & Euwemaa, 1994).

Additionally, Walton and McKersie (1965) have made a crucial distinction between integrative and distributive dimensions. The distributive dimension seeks a particular allocation of outcomes, and includes dominating, compromising, and yielding. The integrative dimension seeks the amount of integration of the two parties’ joint outcome, and embraces collaborating, compromising, and avoiding.

Another influential distinction being made is that of activeness vs. agreeableness. Van de Vliert and Euwemaa (1994) describe agreeableness and activeness as taxonomies of conflict behavior that, in contrast to others, do not confound independent and dependent

variables. The taxonomy allows both the examination of conflict behaviour along a continuum, and the integration of research findings, thereby enhancing comparability (DeChurch & Marks, 2001). The authors integrate Blake and Mouton's (1964) factors in order of increasing activeness: avoiding, yielding, contending, compromising, problem solving; and in order of increasing agreeableness: contending, compromising, avoiding, yielding, and collaborating (DeChurch & Marks, 2001; cf. Nauta & Sanders, 2000).

### **1.2.6 Conflict Outcome**

Thomas (1992) concludes that consideration of conflict outcomes is largely depending on the respective evaluation criteria, which are widespread and complex. The author describes that the most obvious outcome of a conflict issue may be the decision (or lack of decision) that has been reached regarding the conflict issue. De Dreu et al. (1999) describe four types of such outcomes; integrative settlements, compromise, victory to one, and impasse. Integrative settlement refer to solutions that satisfy and embrace the interests of both parties. Integrative agreements have been assumed to be optimal outcomes, as they are more enduring and satisfying for the parties involved (Thomas, 1992), even though this assumption has been questioned for information conflict (De Dreu et al., 1999).

Irrespective of the outcome of the conflict episode, each aspect of the conflict episode separately can be theoretically linked to organizational performance and effectiveness as alternative outcome variables (a more detailed review of the related literature is presented in chapter 7).



### **1.3 ORGANISATIONAL CONTEXT AND INTERGROUP CONFLICT**

In organisations, intergroup relations do not happen in a vacuum, but are embedded within the organizational context, a complex network of interdependent vertical and horizontal relationships. And the context itself may shape relationships between groups. Guzzo and Shea (1992, p. 305) review several features of the organisational context, including the organizational reward system (Shea & Guzzo, 1987), organisational structure (Gladstein, 1984), human resource support systems (Hackman, 1987), managerial support (Pearson & Ravin, 1987), and leadership (Kolodny & Kiggundu, 1980), that may impact on group processes and effectiveness. Management theorists have pointed out that increased levels of differentiation may lead to problems of integration of subunits in pursuit of organizational goals (Burns & Stalker, 1968; Lawrence & Lorsch, 1967). Others have argued that functional interdependencies between and among groups, such as power relationships, need to be diagnosed, to allow an understanding of intergroup relations (Brett & Rognes, 1986). Additionally, researchers have pointed out that an organisation's reward structure is frequently set up such as group performance is rewarded, rather than the quality and effectiveness of lateral relationships (Hartley, 1996). Finally, researchers have outlined how groups in organisations are generally competing over a pool of scarce resources, such as staff, status, or finances (Hartley, 1996; Kramer, 1991).

These organisation specific factors imply the need of adapting general theories of intergroup conflict to the organizational context, as well as to incorporate them into organisation specific concepts and models of intergroup conflict.

#### **1.3.1 Models of Organizational Intergroup Conflict**

Coser (1958) distinguishes between rational and irrational intergroup conflict. Whereas rational conflict represents competition over real, diverging interests, irrational intergroup conflict serves to release accumulated emotional tensions. Similarly to the latter concept, Alderfer (1987) posits that organizational groups may project psychological tensions from their own group onto other groups, in order to prevent instability and distortion within the group. It may in practice be nearly impossible in most natural social situations to distinguish between discriminatory intergroup behaviour based on real or perceived conflict of “objective” interests between the groups, and “subjective” aspects of conflict based on attempts to establish a positively valued distinctiveness for one’s own group (Tajfel & Turner, 2001; cf. chapter 3, discussion). However, this distinction between objective and subjective conflict determinants is well reflected in social psychological theories of intergroup conflict, such as realistic conflict theory (Sherif, 1966) and social identity theory (Tajfel & Turner, 1979; see chapter 3 for details).

Pondy (1967) provides a theoretical framework for conflict among organizational subunits by designing three conceptual models in order to integrate the major classes of conflict phenomena in organisations: The *bargaining model* describes the potential for conflict among a set of interest groups, as rooted in a discrepancy between demands of the competing parties and the available resources. This model refers to the “commons dilemma” of organizational groups who share a limited and scarce organizational resource pool amongst each other (Kramer, 1991). The *bureaucratic model* describes conflict along the vertical dimension of a hierarchy, and may emerge between superiors and subordinates. It may best be described by labour-management strikes over issues such as wage differentials (e.g., Hartley, Kelly, & Nicholson, 1983). The *system model* describes lateral conflicts among persons at the same hierarchical level, which is mainly concerned with problems of coordination. A classical example may be conflict between sales and manufacturing departments in industry (e.g., Dutton & Walton, 1966). The fundamental source of conflict in this model arises out of

pressures toward sub optimisation. Pondy (1967) noted that the system model is prone for conflict, because with the absence of bureaucracy a regulating instance of intergroup relations disappears. So may the subunits in a goal-oriented system have, for various reasons, different sets of active goals, or different preference orderings for the same set of goals. If in turn two subunits with differentiated goals are functionally interdependent, conditions exist for intergroup conflict. According to Pondy, three implicit orientations are running as common threads through the three models: First, each conflict relationship is made up of a sequence of interlocking conflict episodes. Second, conflict is intermittently tied up with the stability of the organisation in a complex fashion. And finally, conflict may be functional as well as dysfunctional for the individual and the organisation.

Walton and Dutton's (1969) model of interunit conflict summarises and integrates attributes of conflictual lateral relationships resulting from early studies. Attributes of conflictual relationships and their potential consequences are illustrated in Table 1. Attributes embrace a wide range of aspects, some of which are merely dysfunctional (e.g. concealment and distortion), while others may embrace both functional and dysfunctional aspects (e.g., competition in general).

**TABLE 1**

**Consequences of Interunit Conflict (Adapted from Walton & Dutton, 1969)**



### **1.3.2 Functional vs. Dysfunctional Conflict**

The acknowledgement that conflict does not necessarily have to be dysfunctional, but may also contain functional aspects (or combinations of both), has a longstanding history in conflict research (Coser, 1956; Deutsch, 1969; Pondy, 1967). So was conflict within top



management teams found to be a constructive and creative resource for enhancing the quality of decision making (Amason, 1996). Similarly, little or no organizational conflict may result in stagnation, poor decisions, and ineffectiveness (Rahim, 2001; p. 12).

Despite some evidence of functional intergroup conflict, this layer of conflict in particular is predominantly regarded as a destructive force in organizational life (Putnam, 1997). Similarly, qualitative descriptions of intergroup conflict illustrate how intergroup relations can be characterised by hostile attitudes and bargaining behaviour (Dutton & Walton, 1966; Lawrence & Lorsch, 1967; Blake et al., 1964). Other examples of dysfunctional effects are summarised in Table 1 above, including low levels trust, suspicion, and decreased rates of interunit interaction.

Yet functional aspects have been reported as well. Inspection of Table 1 shows that conflict may result in enhanced system stability through channelled interunit contact, and motivation may be enhanced through intergroup competition (Walton & Dutton, 1969). Further functional aspects include the enhancement of within group processes, such as group cohesion (Coser, 1956), group motivation (Erev et al., 1993), and the fostering of a group's identity (Putnam, 1997; see chapter 7 for a more thorough discourse of these effects).



## **Chapter 2:**

### **The Nature of Organisational Intergroup Conflict: An Interview Study Using the Critical Incident Technique**

#### **2.0 CHAPTER SUMMARY**

The interview study presented aims to classify and illustrate the nature of conflict between health care groups in an exploratory manner. By reverting to the conflict typologies introduced in the previous chapter, I will assess to what extent intergroup conflict can be characterised in terms of conflict issue, competition, conflict over means, conflict behaviour, and further characteristics of conflict. Moreover, I use correlational analysis to explore how aspects of conflict are related among each other. Qualitative examples are provided to further illustrate the nature of conflict.

Results revealed that, across incidents, conflicts were characterised as high on resource issues and process conflict, but moderate on task conflict, relationship conflict, and competition. In particular, conflict rooted in resource issues was positively related to competition and relationship conflict, but negatively related to task conflict, and was of large scope. Conflict over evaluative issues was positively related to competition, task conflict, and relationship conflict, and of high emotionality. Conflict over intellectual issues, however, revealed a remarkably different pattern, being negatively related to competition, relationship conflict and process conflict, but positively related to task conflict; furthermore, intellectual issues were negatively related to emotionality. Qualitative examples are provided to further illustrate the nature of conflict.

## 2.1 THE INTERVIEW STUDY

### 2.1.1 Procedure

Within the study survey (see chapter 4 for details), participants of the sample of 53 teams were asked for participation in the interview. The item stated, “If you are a person involved in interaction with members of team (*name of the other team inserted*), would you be interested in participating in a one-time interview about this topic?” (Appendix 7) Response choices were “yes” and “no”, and free space was provided for participants to jot down contact details (i.e., e-mail, phone number, or address, as convenient) to enable the researcher approaching those interested. Out of 277 returned surveys, 40 interested employees were contacted, of which 31 participated in the interview. Volunteers were slightly older than non-volunteers ( $t = -2.54, p < .05$ ), but did not differ in terms of gender, the time they spent in their position, or the time they had been members of their team. In total, volunteers therefore appear representative for the study sample.

### 2.1.2 The Interview

The interview itself followed three parts. In part (A), rapport was established, the purpose of the interview was introduced, and the critical incident technique explained. In part (B), the critical incident technique was used in order to identify and explore the most critical conflict incident. Part (C) contained structured questions that focused on descriptive, behavioural, and emotional aspects of the incident, as well as a number of questions unrelated to the purpose of this chapter.

**Part A: Introduction.** After greeting the participant, the purpose of the interview and its ethical background were explained. Participants were not told about the research questions,



but rather that the interview aimed to examine factors that facilitate or hamper cross group working, and in doing so, attempts to complement the questionnaire by an in-depth exploration of particular situations. I continued with assuring participants that the information they provide will be treated with complete confidentiality, and individuals' anonymity would be protected at any time. The interview technique followed a funnel design (Bouchard, 1976; Callister & Wall, 2001), asking first general questions about the nature of the tasks and the relationship between both groups. As conflict is a delicate and sensitive issue, this was deemed necessary in order to establish rapport. The interview guide is enclosed in Appendix 1.

*Part B: The Critical Incident Technique.* Since inter-group relations theory proposes that conflict between groups can be expressed by group representatives acting on behalf of their group (Sherif, 1966), critical conflict incidents that occurred between group representatives are considered a suitable conceptualisation of inter-group conflict. The critical incident technique has been used originally in order to develop aptitude tests for pilots of the US airforce (Flanagan, 1954). However, it has also been successfully applied to describe conflict incidents between groups in organisations (e.g., Tjosvold, 1988a).

Through the course of the interviews, I avoided expressions like "conflict", because of both its delicate nature which may have prevented participants to report incidents (cf. Tjosvold, Dann, & Wong, 1992; Jehn, 1997), and its negative implications which otherwise may have distracted attention from functional and positive aspects of conflict. Instead, similar to Jehn (1997) and Tjosvold et al. (1992), participants were asked to *describe two recent, significant incidents in which they discussed a disagreement or problem with a member of the other team that was relevant for their team's task accomplishment*. Thereby I attempted to focus on task and work related incidents (rather than those unrelated to the work setting). These general questions aimed to elicit a series of issues of varying relevance. I continued asking which of these incidents were of most relevance, in order to identify the most relevant

ones. Facilitating questioning techniques were used to elicit responses. For example, I asked participants to think of everyday problems, or typical difficulties that go along with everyday work (cf. Jehn, 1997), provided examples of work related issues people in general or I myself encounter in everyday work, or continued asking questions about what kind of problems were germane to cross-group working between teams.

*Part C: Structured and open questions.* Verbally administered questionnaire items followed that assessed conflict management strategies, using the Dutch Scale of Conflict Handling (De Dreu et al., 2001; van de Vliert, 1997). For purposes other than this theses, the interview continued with a series of other questions (Appendix 1)

### **2.1.3 External Ratings of Incidents**

Interviews were then rated by two trained research assistants and myself.

*The rater training.* Two female Masters students with prior research experience through their thesis and research assistance rated the incidents. Research questions were not revealed, in order to keep both raters naïve to the questions of interest. Theoretical concepts were explained based on the rationale provided by key theoretical papers (i.e. Jehn, 1995; 1997; De Dreu et al., 1999; Thomas, 1992; and Tjosvold, 1998). Conflict dimensions and concepts were discussed, elaborated, and questions were answered. In a next step, descriptions of fictive conflict incidents were generated and used for trial application and rating. Examples are provided in Appendix 2. Thereafter, five real incidents from three interviews, which were considered ambiguous or difficult to rate, were selected to further practice rating the conflict concepts. (As to confidentiality reasons, an example is not provided.) Disagreements were discussed and resolved until consensus was reached. Saturation was taken as a criterion under which a shared understanding about the concepts among the researcher and both raters was achieved. The remaining 37 incidents included in



this study were then rated as to their extent of competition (Alper, Tjosvold, & Law, 1998), conflict over means (Jehn, 1995), issues (De Dreu et al., 1999), as well as additional characteristics (i.e., emotionality, scope, and integrative potential).

## **2.2 METHOD**

### **2.2.1 Sample**

The study sample comprises 31 participants who reported a total of 42 incidents. Participants belonged to 24 health care groups of four health care organisations (see chapter 4, for details about the organizational context). Five participants (16%) were male. 19 participants (61%) were team leaders. All participants were full time employees. Interviews ranged from 25 to 90 minutes. Five incidents were incomplete or very ambiguous, and therefore have not been included in the analysis, but have been used for the rater training instead. 37 incidents remained for the analysis.

### **2.2.2 Measures**

Cronbach's alpha of all measures exceeded .70 (see Table 2). All rating scales are enclosed in Appendix 3, all self-report scales within the interview guide in Appendix 1.

#### **2.2.2.1 Ratings**

*Conflict over issues.* I developed 4-item scales based on the theoretical rationale provided by De Dreu and colleagues (De Dreu et al., 1999; Harinck, De Dreu, & van Vianen,

2000) in order to measure resource, evaluative, and informational conflict. An example item of resource conflict was “The issue both are arguing about is rooted in time, money, manpower, or other resources both share or provide each other with.” An example item of evaluative conflict was „This conflict is about different styles and ways of doing things, rather than the truth.“ An example item of intellectual conflict was „This conflict is about finding the correct solution according to commonly accepted standards.“ Items ranged from 1 (to no extent) to 5 (to a great extent).

*Conflict over ends.* Competition was measured with a 5-item scale adapted from Alper et al. (1998). An example item was “The goals of both teams are not reconcilable with each other.” Items ranged from 1 (strongly disagree) to 5 (strongly agree).

*Conflict over means.* Task conflict was measured with a 7-item scale by Janssen, van de Vliert and Veenstra (1999) adapted from Jehn (1995), ranging from 1 (not at all) to 5 (completely). An example item was “Diverse perspectives on important issues are the rule rather than the exception.” Relationship conflict was measured with a 6-item measure adapted from Jehn’s (1995) intragroup conflict scale (Janssen et al., 1999), ranging from 1 (not at all) to 5 (completely). An example item was “The encounter between both teams is frustrating.“. Process conflict was measured with a 3-item scale adapted from Jehn and Mannix (2001), ranging from 1 (not at all) to 5 (completely), for example, “There is conflict about task responsibilities between both.“

Additionally, the following constructs were rated with single items: The *emotionality of the incident* measured if individuals have feelings such as jealousy, hatred, anger, and frustration. Conflict is often associated with stress and threat, which increase emotional responses and negative arousal (Jehn, 1997). Emotionality was rated from 1 (to no extent) to 5 (to a great extent). The *scope* of the incident assessed whether conflicts are perceived as more serious, i.e. when they involve larger numbers of people, more events, or greater influence over future interactions (cf. Thomas, 1992; Jehn, 1997). The scope was rated from 1 (of no

relevance) to 5 (of great relevance). The *integrative potential* measured the potential that mutually beneficial options exist (i.e., both parties could potentially reach a win-win situation; Pruitt & Carnevale, 1993). High integrative potential is indicative of the possibility to integrate the interests of both parties, while low integrative potential suggests it is hardly possible to integrate the interests of both parties. Integrative potential was rated from 1 (no integrative potential) to 5 (great integrative potential).

#### **2.2.2.2 Self-report data**

*Negotiation style.* The Dutch scale of conflict handling was used to measure conflict behaviour (De Dreu, Evers et al., 2001; van de Vliert, 1997). The 16 item measure is based on dual concern theory (Blake and Mouton, 1964; Deutsch, 1973), and assesses four conflict management styles with four items each, ranging from 1 (not at all) to 5 (very much). An example for *problem solving* was “I stood up for my own and other’s goals and interests”; for *yielding*, “I adapted to the other party’s goals and interests”; for *contending*, “I fought for a good outcome for myself”; and for *avoiding*, “I avoided confrontation about our differences”.

## **2.3 RESULTS**

### **2.3.1 Treatment of Data**

TABLE 2

## Correlations and Scale Characteristics

|                            | Mean | s.d. | Rwg  | F-value  | 1       | 2     | 3       | 4      | 5     | 6     | 7     | 8     | 9     | 10 | 11 | 12 | 13 | 14 | 15 |
|----------------------------|------|------|------|----------|---------|-------|---------|--------|-------|-------|-------|-------|-------|----|----|----|----|----|----|
| 1 Resource<br>Conflict     | 3.51 | 1.05 | .86  | 6.18***  | (.98)   |       |         |        |       |       |       |       |       |    |    |    |    |    |    |
| 2 Evaluative<br>Conflict   | 2.36 | .78  | 1.00 | 1.24     | -.59*** | (.99) |         |        |       |       |       |       |       |    |    |    |    |    |    |
| 3 Intellectual<br>Conflict | 2.38 | .79  | .89  | 2.84***  | -.33*   | -.19  | (.98)   |        |       |       |       |       |       |    |    |    |    |    |    |
| 4 Competition              | 3.37 | .52  | .89  | 2.59***  | .28*    | .34*  | -.59*** | (.81)  |       |       |       |       |       |    |    |    |    |    |    |
| 5 Task<br>Conflict         | 3.23 | .49  | .89  | 2.79***  | -.41*   | .43** | .42**   | .10    | (.75) |       |       |       |       |    |    |    |    |    |    |
| 6 Relationship<br>Conflict | 3.21 | .85  | .92  | 10.24*** | .02     | .47** | -.62*** | .82*** | .06   | (.92) |       |       |       |    |    |    |    |    |    |
| 7 Process<br>Conflict      | 3.69 | .76  | .76  | 2.92***  | .67***  | -.25  | -.43**  | .54*** | -.32  | .31*  | (.84) |       |       |    |    |    |    |    |    |
| 8 Forcing                  | 3.96 | .87  | NA   | NA       | .24     | .12   | -.24    | .34*   | .02   | .24   | .22   | (.86) |       |    |    |    |    |    |    |
| 9 Avoiding                 | 3.49 | .96  | NA   | NA       | .17     | -.10  | .20     | -.09   | -.10  | -.11  | .00   | .14   | (.81) |    |    |    |    |    |    |





I gauged interrater agreement by calculating Rwg(j)s among the three raters across the 42 incidents for all rating scales. Table 2 reveals that interrater reliabilities among the researcher and the two trained research assistants exceed .70 across scales, suggesting reliabilities were sufficient to good (James, Demaree, & Wolf, 1984). Intergroup relations theory suggests that group representatives represent their groups' interests, not their own, on behalf of their group (Brett & Rognes, 1986). Therefore scale variables should vary across groups (and thus across critical incidents). Hence, I examined whether variance between incidents exceeded variance among the three raters within incidents. I calculated *F*-statistics of intraclass correlation coefficients (ICC1) to demonstrate discriminant validity (cf. Bliese, 2000). *F*-values were greater than 1 for all scales, suggesting that variance between incidents exceeded variance within incidents. *F*-statistics were significant for all scales but the evaluative conflict scale (Table 2).

### 2.3.2 Comparisons among Conflict Types

**TABLE 3**  
**Paired Samples T-Test**

|   | t      | s.d. | p - level |
|---|--------|------|-----------|
| <i>Comparisons among conflict issues <sup>a</sup></i>     |        |      |           |
| Resource Conflict - Evaluative Conflict                   | 4.28** | 1.64 | .000      |
| Resource Conflict - Intellectual Conflict                 | 4.55** | 1.50 | .000      |
| Evaluative Conflict - Intellectual Conflict               | -.14   | 1.21 | .893      |
| <i>Comparisons among conflict over means <sup>a</sup></i> |        |      |           |
| Task Conflict - Relationship Conflict                     | .13    | .96  | .900      |
| Task Conflict - Process Conflict                          | -2.69* | 1.03 | .011      |
| Relationship Conflict - Process Conflict                  | -3.04* | .95  | .004      |
| <i>Comparisons among conflict behaviour <sup>b</sup></i>  |        |      |           |
| Forcing - Avoiding  | 2.14   | 1.21 | .040      |
| Forcing - Problem Solving                                 | .21    | 1.23 | .838      |
| Forcing - Yielding  | 3.51** | 1.39 | .001      |
| Avoiding - Problem Solving                                | -2.46  | .95  | .020      |
| Avoiding - Yielding                                       | 2.38   | .96  | .024      |
| Problem Solving - Yielding                                | 4.14** | 1.11 | .000      |

Note. <sup>a</sup> \*5% alpha < .0167; \*\*1% alpha < .0033 (Bonferoni adjusted)

<sup>b</sup> \*5% alpha < .0083; \*\*1% alpha < .0017 (Bonferoni adjusted)

Examination of incident ratings revealed that conflicts were not exclusively rooted in either resource or informational issues, but rather embraced to varying degrees aspects of either. *T*-tests were conducted to examine differences between conflict scales (Table 3). As a-priori hypotheses were not formulated, alpha levels were Bonferoni-adjusted for each of the three or five respective comparisons made (Bortz, 1993). Comparisons among resource issues show that incidents were significantly stronger rooted in resource than evaluative issues ( $t = 4.28, p = .000$ ), as well as resource than intellective issues ( $t = 4.55; p = .000$ ; Table 3). This supports the view that intergroup relations in organisations are characterised by competition over scarce resources (Kramer, 1991), and exchange and use of resources are a main reason for relationships between groups (Brett & Rognes, 1986). Themes underlying resource issues frequently represented a shortage of staff resulting in work pressure that had to be covered up by another team. So did one health care professional report how their team had to cover for patients the other team couldn't manage to treat. In another case, a ward wanted to forward a patient to a neighbour ward, in order to free a bed which was already reserved for another incoming patient. Yet the other ward could only cover this patient to a much later point in time. This issue caused conflict between groups as due to limited space.

Comparisons among conflict over means reveal that incidents are characterised by significantly higher levels of process conflict than task conflict ( $t = -2.69, p = .011$ ) as well as relationship conflict ( $t = -3.04, p < .004$ ; Table 3). An example of process conflict was where two teams disagreed about which team should take over the patient. Themes underlying process conflict frequently represented disagreements about who should cover which patient. Indeed, some clinical diagnostic criteria appear somewhat fluent and ambiguous, and would justify cover and treatment of a patient by different health care groups. In one example, treatment of a patient would have been justified by two different nursing teams, one dealing with severe mental issues,

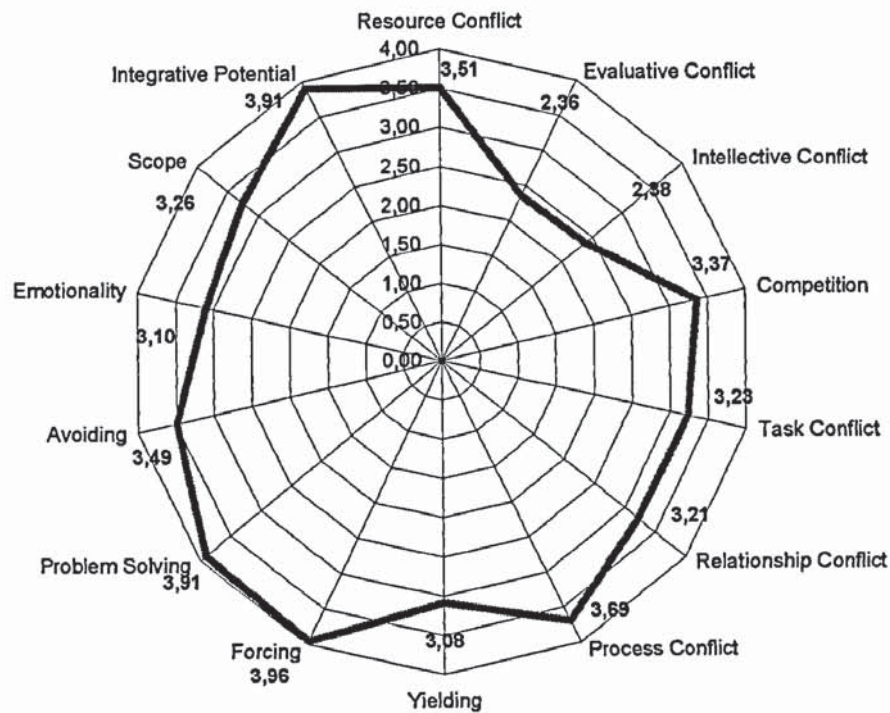


whilst the other team was only trained for treatment of minor mental issues. As the patient's condition was borderline, justification was given for both teams to argue not to take over the patient. As illustrated in this case, process conflict frequently goes along with issues rooted in resource scarcity. Not surprisingly, both scales were highly intercorrelated ( $r = .67; p < .001$ ; Table 2).

Examination of self-report data revealed that the active negotiation styles problem solving and forcing were used predominantly over the passive styles avoiding and yielding (see Table 3, for details). Active management of interface issues between groups has been advocated within the intergroup conflict literature to result in effective conflict resolutions (cf. Blake et al., 1964; Lawrence & Lorsch, 1967).

Figure 3 summarises the means across conflict types and incidents illustrating the predominance of resource conflict, process conflict, and competition, over other aspects of conflict.

**FIGURE 3**  
**Profile of Aspects of Intergroup Conflict**



### 2.3.3 Intercorrelations

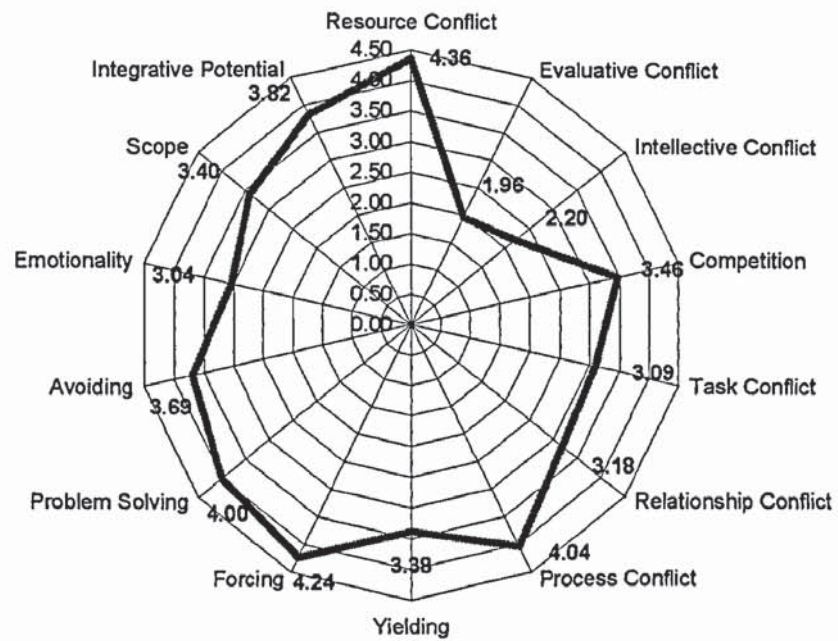
In order to reveal conflict configurations, I continued exploring which conflict types were related within and across typologies. Inspection of Table 2 shows that, within typologies, resource conflict was negatively related with informational conflict ( $r_{\text{resource conflict/informational conflict}} = -.33; p < .05$ ;  $r_{\text{resource conflict/evaluative conflict}} = -.59; p < .001$ ), supporting this basic distinction between issues rooted in resources, and issues rooted in cognitive disagreements. Surprisingly, intercorrelations among scales measuring conflict over means are rather low in comparison to the

existing literature (cf. De Dreu & Weingart, 2003), in particular the relationship between task and relationship conflict ( $r = .06$ , Table 2). One reason for this may be that the use of external ratings prevented inflation of correlations of self report data by elimination of biases such as self-serving bias (cf. Podsakoff, MacKenzie, Lee, & Podsakoff, 2003).

Correlations across typologies reveal that conflicts rooted in *resource* issues were positively related to competition ( $r = .28, p < .10$ ), process conflict ( $r = .67, p < .001$ ), but negatively to task conflict ( $r = -.41, p < .05$ , Table 2); additionally, resource issues were of large scope ( $r = .38, p < .05$ ). As competition and relationship conflict have been predominantly discussed as dysfunctional aspects of conflict (cf. Tjosvold, 1998; Jehn, 1995), I consider this conflict pattern to be detrimental. To illustrate this conflict configuration, a median split was conducted in order to build groups of high and low resource conflict. Figure 4 and 5 illustrate the profiles for high and low resource issues.

**FIGURE 4**

**Profile of High Resource Conflict**





**FIGURE 5**

**Profile of Low Resource Conflict**

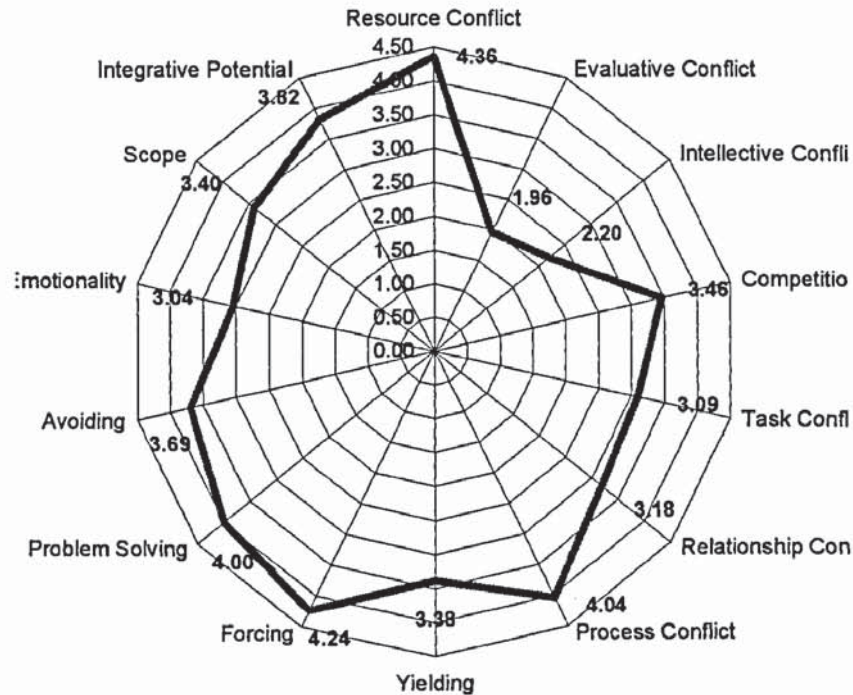
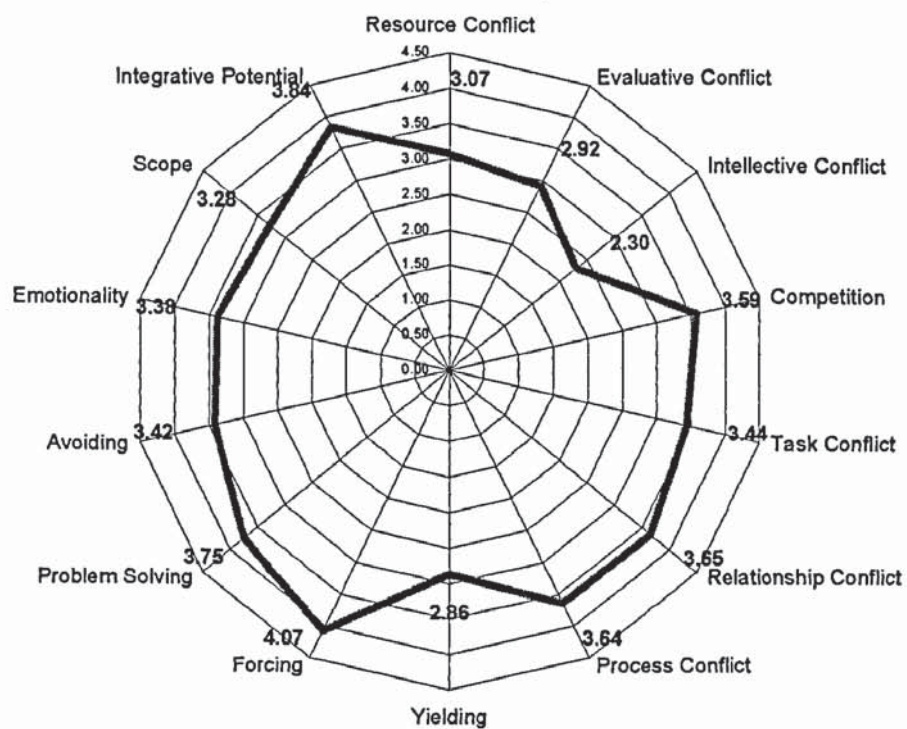
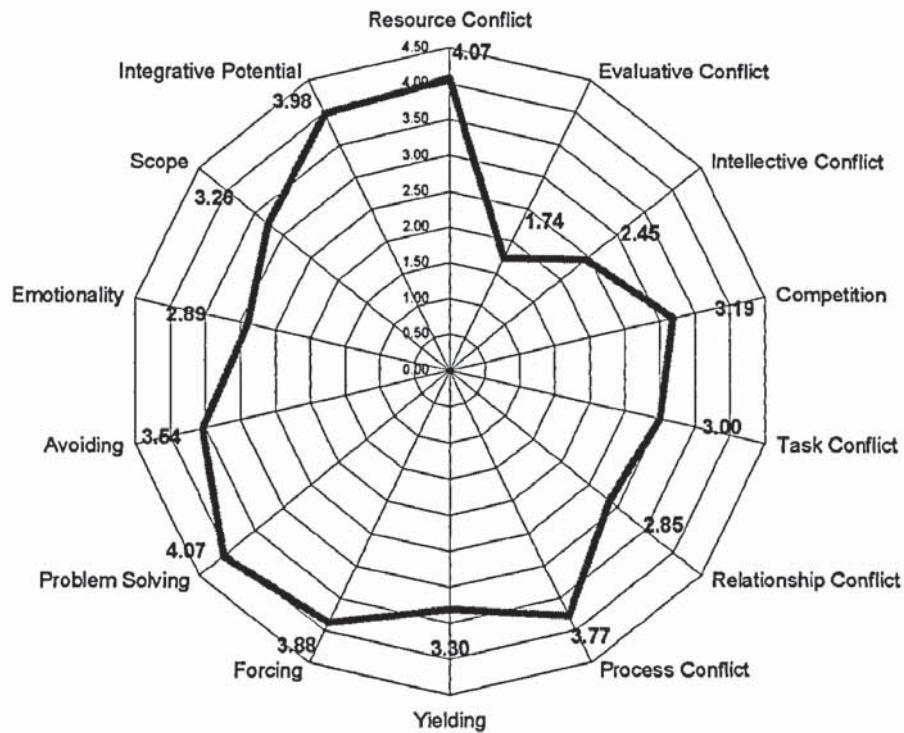


Table 2 displays that conflict over *evaluative* issues was positively related to competition ( $r = .34$ ,  $p < .05$ ), task conflict ( $r = .43$ ,  $p < .05$ ), and relationship conflict ( $r = .47$ ,  $p < .01$ ); evaluative issues were also related to high emotionality ( $r = .39$ ,  $p < .05$ ). Similar to resource conflict, this configuration (especially the high correlation with competition and relationship conflict) suggest a dysfunctional conflict pattern. Figure 6 and 7 illustrate the profile for high and low evaluative conflict.

**FIGURE 6**  
**Profile of High Evaluative Conflict**

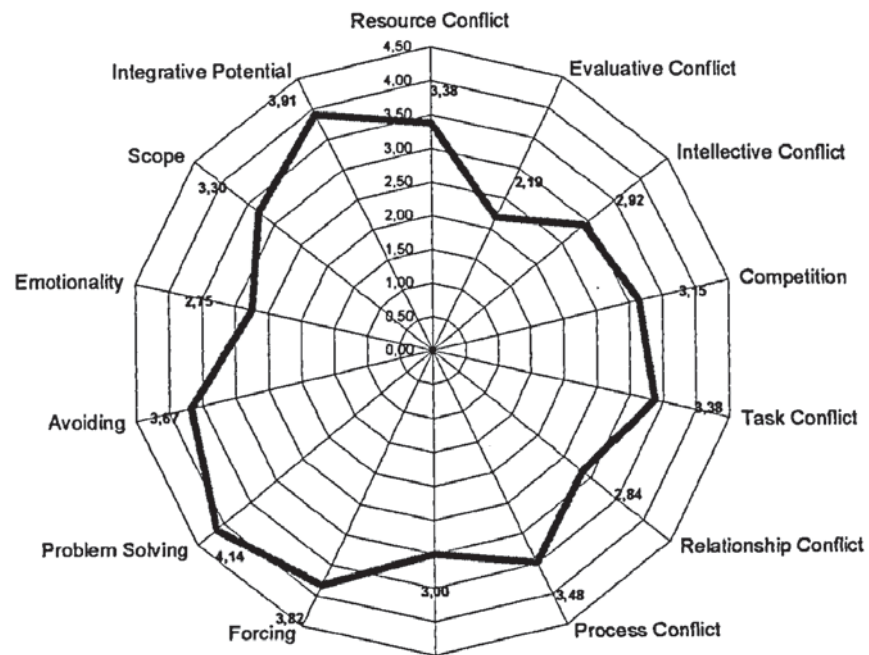


**FIGURE 7**  
**Profile of Low Evaluative Conflict**



Conflict over *intellective* issues, however, revealed a remarkably different pattern: here, relationships were negatively related with competition ( $r = -.59, p < .001$ ), relationship conflict ( $r = -.62, p < .001$ ), and process conflict ( $r = -.43, p < .01$ ), but positively with task conflict ( $r = .42, p < .01$ , Table 2); also, intellective issues were negatively related to emotionality ( $r = -.64, p < .01$ ). These correlations suggest this kind of conflict to be rather functional than dysfunctional. Figure 8 and 9 illustrate the profile for high and low intellective conflict.

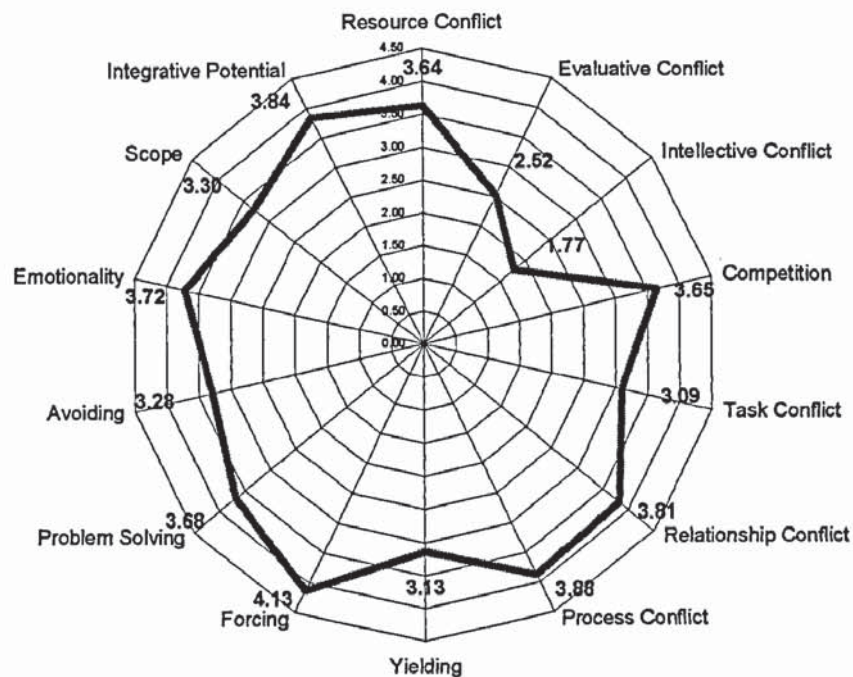
**FIGURE 8**  
**Profile of High Intellective Conflict**





**FIGURE 9**

**Profile of Low Intellective Conflict**



**2.4 CONCLUDING DISCUSSION**

This chapter was set out to illustrate the nature of conflict between member of different health care teams. Comparisons of conflict types revealed a predominance of resource conflict, process conflict, and active negotiation styles. Intercorrelations revealed that conflict issues were related to competition and conflict over means, yielding dysfunctional or functional conflict patterns.

In support of the position that organizational intergroup relations are characterised by a “commons dilemma” of a shared but scarce pool of resources (Kramer, 1991), intergroup conflict

in health care is predominantly rooted in resource issues. This appears especially plausible, given the financial situation of the NHS, a publicly funded service body with problems to attract staff and equip teams with the needed resources. These problems appear to reflect upon the quality of cross group working. Some teams might struggle to meet their team objectives, therefore dedicating little resources to cross group activities.

Conflict over resources were perceived as large in scope, went along with competition and relationship conflict, but reduced levels of task conflict. This correlational pattern suggests a rather dysfunctional configuration of relationships; while conflict over resources may to a certain extent be beyond the control of disputants, the amount of competition and relationship conflict may have a strong psychological component. Thus, subjective aspects of conflict may have ameliorated (more) objective aspects of conflict rooted in resource scarcity (cf. chapter 3). Contagious effects of conflict have been discussed in the literature before. Following Tajfel and Turner (2001), both rather “objective” resource conflict and more “subjective” psychological conflict may reinforce each other, and one may be a trigger for the other. Similarly, Henley and Price (2004) revealed that relationship conflict early in the life cycle of 146 student groups was related with task conflict late in the life of a group (yet not vice versa), suggesting that existing conflict issues may quickly be joined by others.

Another dysfunctional pattern emerged for conflict over evaluative issues, which was related to competition, both task and relationship conflict, and high emotionality. The relative subjectivity of evaluative issues, being a matter of taste and personal style rather than truth, may explain why these conflicts are aligned with high levels of means conflict, and in particular emotionality. Disputants may disagree on such issues, yet finding a solution may depend more on power issues than the truth, resulting in high emotionality. Perhaps conflict escalation might be one result of decisions about such obviously subjective issues.

A rather functional pattern emerged for conflict rooted in *intellective* issues, with negative correlations to competition, relationship conflict, process conflict, and emotionality, but positive correlations with task conflict. This would be at odds with recent meta-analytical evidence (De Dreu & Weingart, 2003), which found that task conflict within groups was negatively related to group effectiveness, questioning the claim that cognitive forms of conflict would be beneficial for groups. In contrast to evaluative issues, intellective issues have a right solution, and are rather a question of finding the truth than personal style or taste. This may explain why emotionality, process and relationship conflict are low, yet task conflict is high. However, results presented here suggest that disputants are concerned about finding better ways of patient care, and these shared goals may provide a basis to endure and allow disagreements on viewpoints.

In conclusion, this chapter showed that conflict between group representatives in this sample of health care teams is predominantly rooted in resource issues, and high on process conflict. Furthermore, patterns of both dysfunctional conflict as rooted in resource and evaluative issues, and functional conflict, as rooted in intellective issues, were illustrated.



## **Chapter 3: Theories of intergroup relations and intergroup conflict**

### **3.0 CHAPTER SUMMARY**

The purpose of this chapter is to clarify and illustrate conceptual issues relevant for the study of intergroup relations, as well as to outline theories of both intergroup relations and intergroup conflict. The chapter follows a tripartite structure. First, conceptual issues and definitions are discussed and provided. Second, theories of intergroup relations are outlined. And third, theories of intergroup conflict are presented and discussed.

### **3.1 CONCEPTUAL ISSUES AND DEFINITIONS**

#### **3.1.1 The Group in Intergroup Relations**

Alderfer (1987) distinguishes two forms of groups in organisations, identity groups and organizational groups. While the former characterise members who share some common biological characteristics (such as gender), have participated in equal historical experiences (such as migration), or are subjected to similar social forces (such as unemployment), the latter refer to employees structured according to organizational tasks or hierarchy of authority (such as a marketing or sales departments). Alderfer notes that each individual in an organisation is likely a member of several groups simultaneously, and that the group which is made focal at a particular moment will depend on the representation from other groups, and what issues are critical in the current intergroup exchange (cf. the concept of category salience; Turner, 1985). Definitions of organizational groups have focused on many defining characteristics (e.g., Alderfer, 1987;

Guzzo, 1996; Hackman, 1987; 2002). Guzzo (1996) suggests that groups are characterised by the following attributes: 1) they are social entities embedded in larger social systems (i.e., organisations); 2) they perform one or more tasks relevant to their organisation's mission; 3) their task performance has consequences that affect others inside or outside the organisation; 4) they are made up of individuals whose work roles require them to be, to some appreciable degree, interdependent; and 5) they have membership that is identifiable not only to those in the group but also to those outside it. Similarly, in a more recent alternative development, Hackman (2002) explicitly distinguishes "real organizational teams" from alternative forms of sets of individuals, because real teams display clear group boundaries, work interdependently together, are stable over time, and have authority over their decisions.

Despite the usefulness of such conceptualisations containing a number of structural characteristics for both the comprehension of organizational groups and the integration of research on work group, these definitions bear limitations if the group in intergroup relations is the focus of interest, and intergroup behaviour and attitudes are to be explained. A growing body of research and theory suggests that central to intergroup dynamics and processes may rather be individuals' social-cognitive constructions and perceptions of social groups, than "objective" characteristics defining a group (e.g., Ashforth & Mael, 1989; Hogg & Terry, 2000). For example, social categorisation into social groups, irrespective of criteria such as task interdependence, has been found to elicit intergroup behaviour and attitudes (Tajfel, Billig, Bundy, & Flament, 1971).

A complementary approach has been adopted by social identity theorists, who provided a cognitive definition of the social group. Turner (1982, p. 15) defines a group as "two or more individuals... perceive themselves to be members of the same social category"

Even though this definition bears the advantage of focusing on the social-cognitive



aspects of social groups found to elicit a range of intergroup phenomena including intergroup discrimination and competition (e.g., Tajfel et al., 1971), it bears two drawbacks. First, the theory's focus on self-categorisation as an essential element for intergroup relations to occur does not acknowledge that a group can be defined (and an intergroup relation started) by non-members rather than members. Thus, the theory ignores the public and intergroup nature of classification, which has been challenged as an opposed boundary condition rather than an identifiable criterion (Hartley, 1996). For instance, gender or ethnic minorities may not define themselves as a group, but be treated by non-members of that social category as constituting a group (cf. Lewin, 1948). This suggests self-categorisation not to be a necessary condition for group existence (Hartley, 1996). Second, giving priority to group members' self-categorisation rather than to whether members of other groups recognise the group as a group may be problematic if intergroup performance outcomes are to be investigated, an aspect which is at the heart of this thesis. Recognition and awareness of members of two groups is a precondition for the emergence and assessment of intergroup performance outcomes.

I therefore revert to a definition of an organisational group in intergroup relations, that is based on the social definition of a group, but takes into consideration that groups need to be perceived from both group members *and* outgroup member. Brett and Rognes (1986) have defined an organizational group as a set of individuals, who perceive themselves and whom non-members perceive as constituting an identifiable social aggregate within an organization. This minimalist group definition bears a number of advantages. First, it realises the social constructive nature of the group in intergroup relations; second, it provides a basis for the assessment of cooperative intergroup performance outcomes by explicating reciprocal awareness between groups; and third, it does not impose any additional boundary conditions, such as group

interdependence (Guzzo, 1996) or group stability (Hackman, 2002), which were found not to be essential conditions for the elicitation of intergroup behaviour (Tajfel et al., 1971).

### **3.1.2 Do Intergroup Relations Differ from Interpersonal Relations?**

An important issue for the study of intergroup relations is the discussion of whether an intergroup relations theory is essential for the explanation and comprehension of intergroup phenomena, or whether these phenomena may rather be sufficiently explained by general theories of intra- and interpersonal behaviour. For instance, Mackie and Smith (1998) voice scepticism whether there is anything unique and special about intergroup relations, instead advocating an integrative social psychological approach to the topic of intergroup relations. The authors argue that processes fundamental to social perception, processing principles, and motivational principles underlie the vast surface diversity of all forms of social behaviour, including various phenomena related to intergroup relations. Indeed, some research on individual relationships within and between groups support the view that interpersonal relationships may be sufficient, or at least play a crucial role to explain intergroup phenomena. So did processes like distrust, third party gossip, and conflict spread throughout organisations *across* group boundaries by means of interpersonal conduits (Burt & Knez, 1996; Smith, 1989). Similarly, perceptions of intergroup conflict were directly related to negative interpersonal relationships across groups, as well as to indirect relationships through friends in a health care organisation (Labianca, Brass, & Gray, 1998).

This position is challenged by the work of intergroup researchers like Alderfer, Tajfel, and Sherif. Alderfer (1987) claims that whenever individuals of different groups interact, their behaviour is, to varying degrees, a function of intrapersonal, intragroup, and intergroup forces.



Which of these forces at a given time may be most influential depends on the salience of the respective issues the representatives deal with. Several researchers discussed under which conditions intra- and intergroup forces are most salient and dominate interpersonal behaviour. Sherif (1966; p. 9), e.g., states that intergroup transaction occurs “whenever individuals belonging to one group interact *collectively or individually* with another group or its members *in terms of their group identification*.” Empirical results strongly support that once group membership is made salient, intergroup relations have a pivotal influence on interpersonal relations and behaviour across groups (e.g., Tajfel et al., 1971). Several psychological variables, such as a need for distinctiveness and belongingness (e.g., Brewer, 1991; Hornsey & Hogg, 1999), superordinate goals (Sherif, 1966), or the amount of intergroup contact (Nelson, 1989, Pettigrew, 1998) appear to elicit intergroup processes that affect interpersonal cross-group behaviour and attitudes. Apart from these psychological, intergroup-specific processes, Brett and Rognes (1986) suggest a more pragmatic reason why an intergroup theory is a necessity for organisational groups; even though groups may interact through their representatives, these representatives represent their group’s, not their own interests, on *interface issues that exist at the group level*, not the individual level. The authors argue that even though in theory this suggests that any individual would be an equally viable representative of a group’s interests, in practice group members frequently do not have homogenous values and interests, and are therefore not fully interchangeable in the role of group representatives. Brett and Rognes (1986) conclude, however, that two factors serve to reduce variability in representative behaviour: First, the role of a group representative carries with it strong expectations about appropriate role enactment. The reward contingencies are such that they are better off representing their group, not themselves, for they are ultimately accountable to their group. And second, these expectations are shared by the role incumbent, group members, and members of the other group. Thus, even when group

representatives were representing their personal interests rather than those of their group, members of the other group believe they are representing their group's interests, and treat them accordingly.

I define *intergroup relations* in this thesis as "any aspect of human interaction that involves individuals perceiving themselves as members of a social category, or being perceived by others as belonging to a social category" (Taylor & Moghadam, 1994; p. 6). This definition reflects the social-cognitive approach to intergroup relations (e.g., Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), and bears two advantages. First, it allows integrating a broad range of phenomena, such as intergroup attitudes, emotions, collaboration, group mobility, and conflict. Second, the definition illustrates that an individual does not have to be a member of a group (but only perceived to be a member by others), in order for intergroup relations to operate (Hartley, 1996). Third, the definition allows to integrate that intergroup relations may forgo group relations, as discussed in the preceding section.

In conclusion, both psychological and structural reasons strongly support the need for a unique intergroup relations theories to explain intergroup phenomena in organisations not sufficiently covered by theories of interpersonal behaviour.

The remainder of this chapter is structured as follows. First, as intergroup conflict is an aspect of intergroup relations, I will review theories of intergroup relations before addressing specific theories of intergroup conflict. I begin this section with a review of early developments of intergroup relations theories, and continue with integrative theories of hierarchical and lateral relationships between groups. Second, I review theories of intergroup conflict. These are grouped into theories that view intergroup conflict either as the dependent variable, or as a condition. As outlined in the preceding section, theories of interpersonal behaviour do not allow a sufficient explanation of intergroup processes. Following Hartley's (1996) approach, the theoretical



overview in this chapter therefore excludes, with the exception of the very influential work by Freud (1921), those theories considering individual rather than group processes as explanations of intergroup phenomena (e.g., equity theory, frustration aggression hypothesis, uncertainty reduction theory).

### 3.2 THEORIES OF INTERGROUP RELATIONS

#### 3.2.1 Early developments

During the nineteenth and early twentieth century, a tradition prevailed that saw the collective in a negative light (Taylor & Moggadham, 1994; p. 18). This tradition is reflected in the theoretical work of Le Bon, Sumner, and Freud. Those theories' value may not be assessed based on the empirical support they have received; rather they bear enormous heuristic and developmental value through their influence on contemporary thinking and the development of later intergroup relations theories and concepts.

*Le Bon's (1895) theory of the crowd.* Le Bon used political events of nineteenth century France as the basis of his propositions about individual and crowd behaviour. He summarised mobs and juries, mass demonstrations and parliaments, criminal as well as religious aggregations, all under the umbrella of crowds (Hewstone & Stroebe, 2001). Le Bon tried to explain why "normal" individuals became deviating and abnormal as a crowd. He posited that individuals lose their sense of conscious personality in the anonymity, contagion and suggestibility provided by a crowd. The formation of a psychological crowd results in the replacement of the individual's personal consciousness by a "collective mind", which can result in a loss of self-control and violation of social norms. Alderfer (1987) summarises some of the issues that remain central to

the study of intergroup relations today, including the tension between elites and masses, and the substitution of unconscious action by groups for the conscious action of individuals. Le Bon's work strongly influenced Freud's (1921) theorising about groups.

**Sumner's (1906) concept of ethnocentrism.** Central to the understanding of *ethnocentrism* are the concepts of ingroup and outgroup. Whereas the ingroup is one's own group, the outgroup is regarded as any group with which one is in conflict (Alderfer, 1987). The feature characteristics of the ethnocentrism syndrome include negative attitudes toward outgroups as well as positive feelings and evaluations of the ingroup. Further, an explicit negative correlation between ingroup and outgroup attitudes is postulated: the greater the attachment and solidarity within the ingroup, the greater the hostility and contempt directed towards outgroups. As Brewer (2001) notes, field studies assessing the relationship between identification with ingroups and discrimination against outgroups have so far failed to find any straightforward negative correlations between ingroup positivity and intergroup attitudes (see Hinkle & Brown, 1990), suggesting further investigations on the question when and how ingroup identification is related to outgroup hostility.

In an attempt to decompose Sumner's concept of ethnocentrism, Brewer (2001) identified four separate propositions related to contemporary concepts of intergroup relations: The *social categorisation principle* refers to the organisation of human social groups into discrete ingroup-outgroup categories; the *ingroup positivity principle* indicates that individuals value their ingroups positively and maintain positive, cooperative relationships with members of the ingroup; the *intergroup comparison principle* signifies that ingroup positivity is enhanced by social comparison with outgroups, in which ingroup attributes and outcomes are evaluated as better than or superior to those outgroups; and the *outgroup hostility principle* refers to the



characterisation of relationships between ingroup and outgroups by antagonism, conflict, and mutual contempt.

*Freud (1921).* Freud's influence on both theory and research on intergroup relations was significant, as he introduced concepts like identification and projected aggression as outgroup hostility. Nevertheless, he did not deal with relationships between groups per se, but rather focused on within-group dynamics to explain relationships between groups (Freud 1921). Freud did not develop a model of intergroup processes as such, but assumed that individuals' unconscious processes operated at the group level. He claimed that outgroup hostility was a necessary condition for harmony within the ingroup. If hostile feelings were not displaced onto an outgroup, they could turn inward and destroy the ingroup. His ideas of projection have been highly influential for the work of other theorists (e.g., Dollard, Doob, Miller, Mowrer, & Sears, 1939; Alderfer, 1987; Smith, 1989; Sherif, 1966). Among the most relevant criticism on Freud's theoretical ideas may be that the assumption of unconscious processes is unproven, the influential part of the minority ignored, and a purely psychological perspective on intergroup hostility is offered, thereby ignoring more objective aspects of conflict, such as conflicting interests (see Hartley, 1996; Taylor & Moggadham, 1994).

*Lewin (1948).* Having been a German-Jewish refugee, Kurt Lewin was one of the first who addressed the issues of multiple group memberships and the importance of salience on the background of the discrimination of Jews during and prior to the Second World War. He outlined that during the course of a life, the adult acts not purely as an individual, but as a member of a social group. Furthermore, he outlines that the different groups a person belongs to are not all equally important at a given moment. Sometimes the individuals' belonging to one group is dominant, yet at other times his belonging to another group. In extending the work of Freud, Lewin switched the focus from majorities toward minorities, and discussed the influence of status

and boundary stability between groups. He explicated that every underprivileged minority group is kept together not only by cohesive forces among its members, but also by the boundary which the majority erects against the crossing of an individual from the minority to the majority group.

### **3.2.2 Integrative Theories of Hierarchical Relationships between Groups in Organisations**

*The five-stage model of intergroup relations (Taylor & Mogghadam, 1994).* Taylor and Mogghadam provide a theory primarily concerned with the development of intergroup relations and intergroup behaviour over time, as well as intergroup mobility, i.e. how and why individuals are attracted to groups and move from one group to another group. The five-stage model of intergroup relations is meant to be applicable to any intergroup situation, even though its developmental perspective and terminology may make it more applicable for societal rather than organisational model (cf. Hartley, 1996), the latter frequently being restrained from voluntary movement across groups. The model rests on the two basic social psychological processes of causal attribution and social comparison, which can be summarised in a developmental process of five stages (Taylor & Mogghadam, 1994).

The theory has received limited empirical support from experimental research summarised (and conducted) by the authors themselves (Taylor & Mogghadam, 1994). Yet empirical evidence from field settings has to my knowledge not been provided so far.

The incorporation of a macro and micro perspective by integrating both individual and group processes to explain intergroup phenomena represents a major advantage of the theory; furthermore, the model provides a historical developmental perspective on intergroup relations by placing intergroup behaviour in a historical context (Taylor & Mogghadam, 1994). With the exception of social identity theory, other intergroup relations theories are (to my knowledge) void



of these aspects. Thus, the model is highly integrative as it allows integration and explanation of a number of group processes.

Conversely, disadvantages may chiefly be related to its lack of specification, the theory's universality claim, and applicability to organizational groups. For instance, specific intergroup relations, such as those between identity groups, may well differ from societal intergroup relations, and therefore require consideration and explication of a number of specific factors; ethnical or gender groups may have impenetrable group boundaries, thereby questioning the theory's mobility component at least for some groups. Similarly, it may be difficult to apply the theory to organisational contexts. Even though individuals belonging to organizational groups may be able to move to more advantaged groups based on their achievement, group mobility in organisations may likely be influenced by a number of other organisation-specific factors, such as a group's functionality, individuals' profession, power issues, and organizational support and policies. None of those aspects of the organizational context is included in the model. Another critical issue may be the group's restricted practical utility for organizational intergroup relations, as developmental processes may be of less interest than, e.g., aspects of intergroup performance.

*Walton and McKersy's (1965) behavioural theory of labour negotiations.* Since the seminal work of Walton and McKersy (1965), people think about negotiation as a way of thinking about how transaction takes place in complex organisations. The behavioural theory of labour negotiations provides both a theoretical framework as a way of thinking, and an exposition of related dilemmas. As Walton and McKersy (1992) outline, the theory is not a classical theory, as it sits between the two poles of being purely theoretical and being a recipe book for negotiation. The purpose of the theory was to give the negotiator and the student of negotiations a framework to understand negotiation processes (Walton and McKersy, 1992).

The analytical framework presented states that, irrespective of the details, all negotiations between social entities (i.e., groups, individuals, etc.) contain four sub processes and associated dilemmas: distributive and integrative bargaining, attitudinal structuring, and intraorganisational bargaining (Walton and McKersy, 1992).

*Distributive bargaining* refers to the complex system of activities instrumental to the attainment of a party's goals when this party is in basic conflict with another party. The authors outline that this goal conflict refers to what game theorists call fixed-sum games, i.e. negative interdependence such that one party's gain is the other party's loss. The function and purpose of this process is to resolve conflicts of interests.

*Integrative bargaining* embraces a system of activities targeting at the attainment of objectives which do not represent fundamental conflicts of interest with the other party, and therefore can be integrated at least to a certain extent. As opposed to distributive bargaining, the issues at stake represent problems of concern, rather than mutually exclusive goals. Successful problem solving depends on the extent to which integrative potential exists, i.e. the nature of the issue allows solutions that are potentially satisfying the needs of both parties. Integrative bargaining has the function of finding common or complementary interests and problem solving.

While the first two processes represent joint decision making processes, the third process, *attitudinal structuring*, refers to a socio-emotional process that aims to change attitudes and relationships. The purpose of attitudinal structuring is to affect the attitudes of the negotiators toward each other, in order to influence the bonds relating both negotiation parties.

The fourth process, *intraorganisational bargaining*, aims to achieve consensus within the union and within the company. It includes the set of activities that aligns the expectations of principals with those of the chief negotiator. Adams (1976) refers to this as the boundary role conflict of a boundary spanner. Walton and McKersy (1965) illustrate that the chief negotiator is



the recipient of two sets of demands, one coming from the own interest party, while the other stems from the opposite party. The negotiator's dilemma consequently involves the conflict of both differing aspirations about the issues on stake, and differing expectations about the behaviour related to those issues. Thus, the purpose of this subprocess is to achieve consensus within each of the negotiating groups.

The behavioural theory of labour negotiations has been very influential of the understanding of negotiation between hierarchical groups. Walton and McKersy (1965) extended previous research not necessarily regarding the introduction and examination of the four sub processes, but rather regarding the thorough treatment of the internal dynamics of each of the processes in a comprehensive way. Additionally, the theory was the first that treated these simultaneously ongoing processes in an interrelated, interactive way. Another strength of the theory is that, even though being highly integrative and global, the theory contains hypotheses that can be tested empirically.

### **3.2.3 Integrative Theories of Lateral Relationships between Groups in Organisations**

*Boundary spanning theory* (Adams, 1976; Aldrich & Herker, 1977). In its original version, boundary spanning theory aims to explain how boundary spanners can effectively facilitate organisational transactions. Similarly, both theoretical and empirical work suggest boundary activities become more relevant for group performance, because organisational functions are more and more taken over by work units (Yan & Louis, 1999; see Ancona, 1990; Ancona & Caldwell, 1992, for the importance of work groups' external activities). The theory also notes that conflicts between organisations are most often managed by a boundary spanner (cf. Callister & Wall, 2001). Thus, the theory similarly provides a suitable framework for

intergroup relations within organisations, as the boundary spanner represents the vehicle for communication and dispute resolution in negotiations, interfunctional relations, joint ventures, or other organizational cross-group ties (Friedman & Podolny, 1992).

Boundary spanning theory posits that a boundary spanner's behaviour in intergroup negotiations (as well as the behaviour of the boundary spanner of the outsider group) is a function of factors influencing a.) the nature of the boundary spanner's relationship with the own unit; b.) the boundary spanner - outsider interaction; c.) the boundary role person's personal characteristics; and d.) the relationship between the boundary role person's unit and the outsider (Adams, 1976; Callister & Wall, 2001).

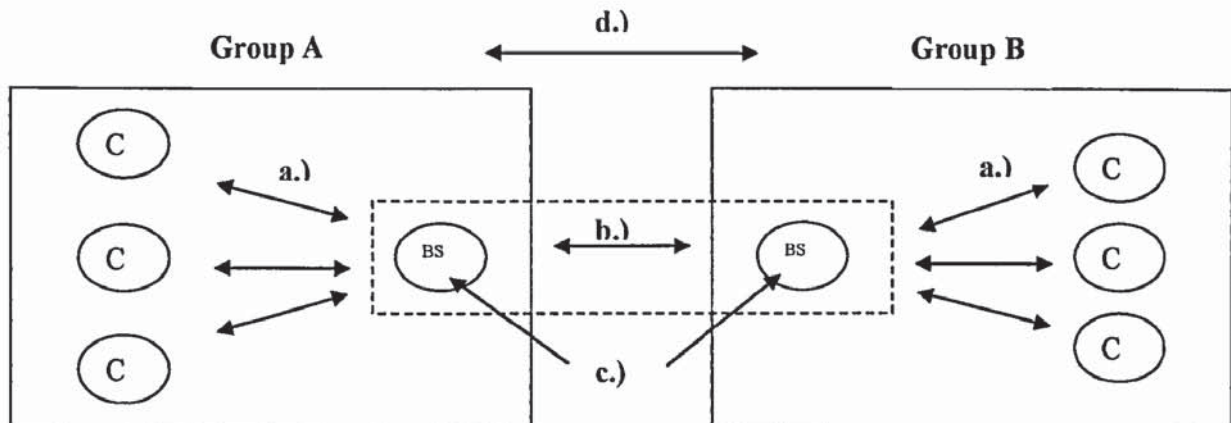
As the theory represents an integrative, overarching framework, it is hard to empirically support the myriad of its potential propositions. Yet some empirical support has been provided for each of the four categories (see Callister & Wall, 2001, for an overview), supporting its utility for organizational research.

*Embedded intergroup relations theory (Alderfer, 1987).* Embedded intergroup relations theory is a unique approach to intergroup relations, inasmuch as it put a focus on the organizational context, includes psychodynamic concepts such as projection, and uses "clinical" methodologies, such as organic questionnaires and microcosm groups. Alderfer stresses that intergroup behaviour takes place whenever individuals of two groups are interacting (cf. Sherif, 1966). Analogous to boundary spanning theory, Alderfer proposes that any interactions between people of different groups are subject to (1) intra-personal, (2) intra-group and (3) intergroup dynamics (Alderfer, 1987).

Figure 10 integrates variables relevant for both boundary spanning theory and embedded intergroup relations theory.

FIGURE 10

Summary of Four Categories Determining Boundary Spanner's Behaviour as Suggested by Boundary Spanning Theory and Embedded Intergroup Relations Theory



Note. C = constituents of group; BS = boundary spanner

- a.) the nature of the boundary spanner's relationship with his or her unit (cf. Alderfer's intragroup dynamics)
- b.) the boundary spanner - outsider interaction (cf. Alderfer's intergroup behaviour)
- c.) the boundary spanner's personal characteristics (cf. Alderfer's intrapersonal dynamics)
- d.) the relationship between the boundary spanner's unit and the outsider (cf. Alderfer's intergroup dynamics)

With relevance to organisations, embedded intergroup relations theory might have been most influential in stressing the organisational context in which groups are embedded. The theory proposes a distinction between identity groups, to which individuals belong to by virtue of birth, biology and socialisation (e.g., gender and race), and organisational groups, representing hierarchical and functional groupings (e.g., marketing and sales departments). Consequently, Alderfer concludes that individuals have at any given time simultaneously multiple group



memberships, as indicated by the notion “embedded”. Alderfer (1987) advocates four properties of intergroup relations, which allow for a specification of the nature of the intergroup relationship: *Group boundaries* may be both physical and psychological and determine group membership, as well as regulated intergroup transactions, by variations in boundary permeability, i.e. the ease with which boundaries can be crossed. *Power differences* include differences in resources that groups can obtain and use. Power differences in part affect boundary permeability, but also strategies of intergroup relations (Hartley, 1996). *Affective patterns* refer to the polarisation of feelings, such that positive feelings are associated with the own group, and mainly negative feelings are projected onto the outgroup (cf. Sumner, 1906). *Cognitive formations, including distortions*, refer to the development of a group’s own language, conditioning of members’ perceptions of objective and subjective phenomena, and transmission of sets of propositions, such as theories and ideologies. *Leadership behaviour* of leaders and group representatives reflects the aforementioned four properties of groups in relation to other groups, and is both cause and effect of the total pattern of intergroup behaviour.

Additionally, Alderfer’s (1987) theory incorporates a number of psychodynamic concepts, such as the projection onto outgroups, unconscious processes, and parallel processes. Parallel processing, for instance, describes that group members’ experience after interaction with outgroup members may affect their roles and subgroups such that the outgroup’s roles are adapted by the ingroup.

The methodology suggested by Alderfer is organic, reflexive, and clinical. Embedded intergroup relations theory stresses that research must take into consideration that group membership has an effect on individuals, groups, and the entire organization (see Alderfer & Smith, 1982), suggesting to assess outcome variables at multiple levels throughout the organisation. This might be achieved, for instance, by use of organic questionnaires, including

questions that are adapted flexibly according to changes of the group that is under study. Similarly, Alderfer advocates that the researcher himself plays an active part in the research process, both reciprocally interacting with and influencing the research object. Consequently, the theory argues that those processes require the attention and analysis of the researcher, as they are crucial for an understanding of the research process. For functional intergroup relations in particular, Alderfer suggests the use of microcosm groups, consisting of representatives from all groups involved in the intergroup relations of interest. Intergroup interventions can be developed and applied to this microcosm group, and thereby relationships between groups as a whole improved and affected throughout the organisation.

Empirical support for the theory is limited, with a focus on interracial relationships in organisations (e.g., Alderfer & Tucker, 1996). Yet, as Hartley (1996) notes, the theory does not make particular predictions about the course and quality of intergroup relations, thereby making an empirical verification difficult. In one study on intergroup relations of functional, organizational groups, Alderfer and Smith (1982) illustrated how the analysis of multiple group membership embedded within the organizational system could be used to explain the quality of relationships between functional groups. An interpretation of the complex interaction processes was offered by careful uncovering of the layers of embeddedness.

Embedded intergroup relations theory may have its strongest advantages in the fact that it proposes a set of alternative propositions and methods not covered by other intergroup relations theories, as well as by explicitly incorporating and focusing on the organizational context.

Yet, as the theory has a strong focus on being integrative rather than predictive, it may be of limited use to predict how particular variables and constructs affect the quality or outcome of intergroup relations.



In conclusion, both embedded intergroup relations theory and boundary spanning theory do not make specific predictions about the quality of intergroup relations. Yet they make highly comparable statements about the nature of intergroup transactions. Both frameworks suggest that intergroup relations affect different levels of analysis throughout the organisation; intergroup relations are negotiated by group representatives; inter-personal interaction between group members of different groups represent an aspect of intergroup relations; and variables that influence the way intergroup relations are negotiated belong to predefined categories (see Figure 10). A limitation of both theories is that they do not make predictions about the option that boundary spanners (e.g., group leaders) may affect the relationship between two groups as a whole. Brett and Rognes (1986) describe that group representatives represent their group's interests on interface issues that concern *both* groups. Outcomes of these negotiations are constraints (i.e., limits placed) on the groups, as well as coordinated action between groups. Consequently, characteristics and behaviour of group leaders or representatives may affect the relationship between two groups as a whole. Alderfer (1987, p. 204) does, however, acknowledge this possibility, stating that "the behaviour of group representatives, including formally designated team leaders, is both cause and effect of the total pattern of intergroup behaviour in a particular situation".

### **3.2.4 Overall Evaluation with Respect to this Research**

The theories introduced in the preceding section stress different aspects of relevance for the understanding of intergroup relations. The outlined early developments have primary importance and value in the development and elaboration of concepts and more refined theories, including concepts such as depersonalisation (Le Bon, 1909), identification and outgroup



projection (Freud, 1921), in- and outgroups (Sumner, 1906), and salience and permeability of group boundaries (Lewin, 1948).

Taylor and Moggadham's 5-stage model of intergroup relations is of little relevance for this research, because it does neither provide a view on factors that allow predictions about the quality of intergroup relations (except statements on collective behaviour adopted from Tajfel and Turner, 1979), nor does it make any predictions about how aspects of intergroup relations may affect the effectiveness with which groups perform their individual or collective tasks.

Walton and McKersy's theory of labour negotiations may not be directly related to this research, as it aims to explain hierarchical rather than lateral relationships between groups; however, the four subprocesses outlined (integrative vs. distributive bargaining, attitudinal restructuring, and intraorganisational bargaining) are relevant for the understanding of lateral relationships between groups, and display parallels to other theoretical frameworks, such as interdependence theory (Deutsch, 1949; 1969; 1973) and social identity theory (Tajfel & Turner, 1979).

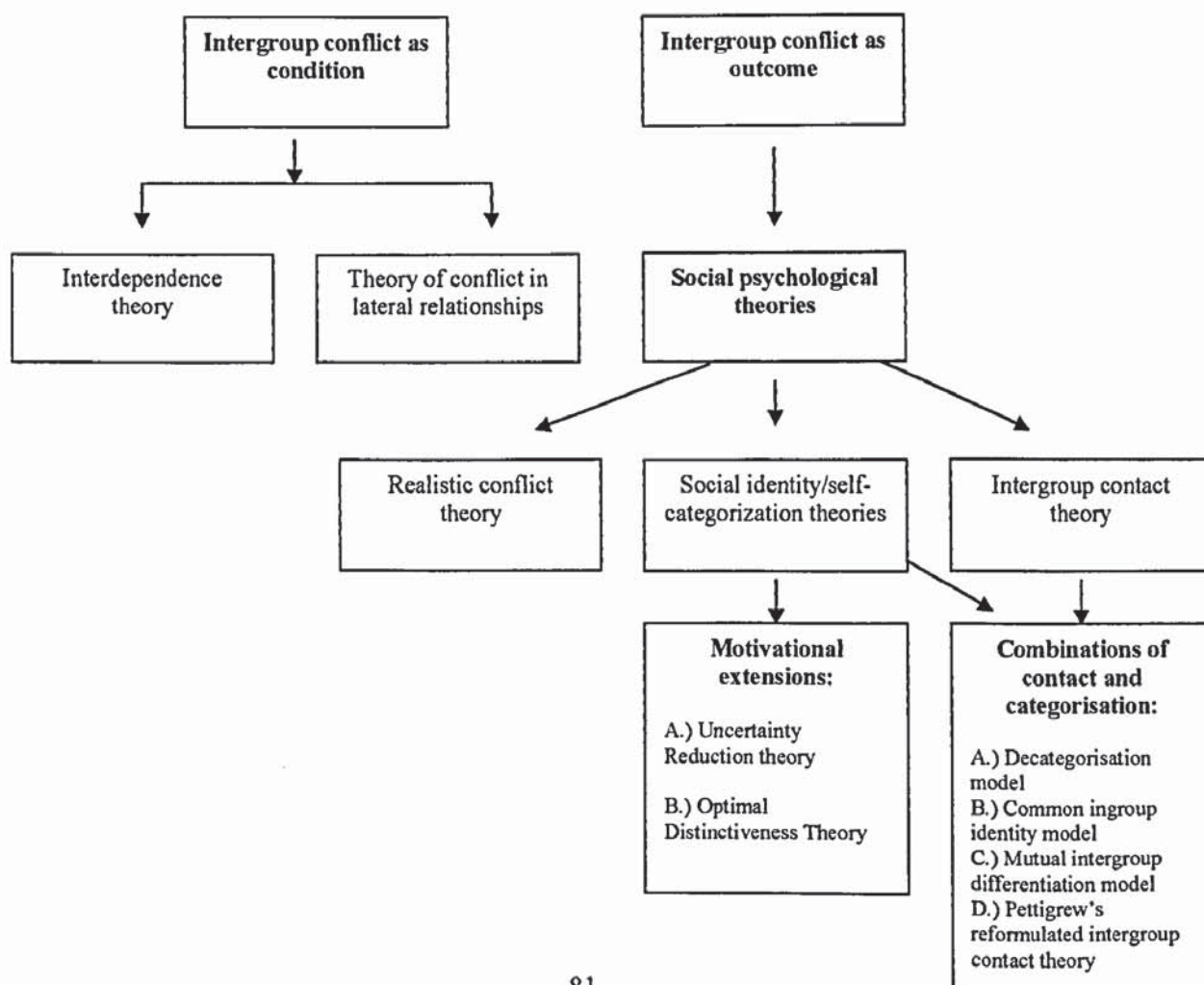
Both embedded intergroup relations theory as well as boundary spanning theory are of greater relevance for organisational intergroup relations in this research, as both explicate how intergroup transactions take place, as well as allow a broad variety of factors (e.g., boundary spanners' self-concept and behaviour) to be integrated into an overall framework predicting the effectiveness of intergroup transactions.

### **3.3 THEORIES OF INTERGROUP CONFLICT**

In the remainder of this chapter, I will present theories of intergroup conflict in organisations. A selection is made of those theories most commonly applied to organizational intergroup conflict, and which I judged most relevant for the research questions dealt with in this

thesis. Thus, I excluded approaches such as terror management theory (Solomon, Greenberg, & Pyszczynski, 1991), or social dominance theory (Sidanius & Pratto, 1999) from this review. Further, the ingroup projection model (Mummendey & Wenzel, 1999) has not been outlined, because its theoretical predictions are both less relevant for this thesis, and not testable with the scales that were employed. As this thesis treats intergroup conflict as both predictor and outcome variable, the theories presented will be structured accordingly (see Figure 11). As to its relevance for this thesis, a focus will be put on social identity theory.

**FIGURE 11**  
**Theories of Intergroup Conflict**



### **3.3.1 CONFLICT AS OUTCOME VARIABLE**

#### **3.3.1.1 Realistic Conflict Theory (Sherif, 1966)**

In a review of conflict theories in sociology, anthropology, and social psychology, Campbell (1965) concluded that the common thread running through those theories was that group conflict has a realistic or rationale basis, as represented by antagonistic interests. He labelled this perspective the “realistic conflict theory”, which reflects that hostile attitudes and behaviour between groups represent conflicts of interest, rather than psychological factors. According to the theory, intergroup behaviour and attitudes are likely to be hostile and competitive if group interests are in conflict. Conversely, if these interests are cooperatively interlinked, intergroup behaviour and attitudes are likely to be friendly and cooperative. In their seminal summer camp studies, Sherif and colleagues (Sherif, Harvey, White, Hood, & Sherif, 1961) conducted a series of experiments, where they experimentally introduced competition between schoolboys previously randomly assigned into groups. Competition was introduced by a number of means and activities (e.g., tuck-of-war games) characterised by a zero sum context, such that one group’s gain was the other group’s loss. Despite pre-existing friendships, boys in different groups developed hostile attitudes and behaviour toward each other. The subsequent introduction of a series of cooperative tasks, which required the concerted efforts of both groups (e.g., the joint pulling of a truck), eventually resulted in cooperative behaviour and positive attitudes toward the outgroup.

Empirical evidence for the theory has been provided in both laboratory and field settings (e.g., Blake & Mouton, 1964; Brown et al., 1986; Mohrman et al., 1995; Sherif, 1966; Worchel,



Androcoli, & Folger, 1977). For instance, Brown et al. (1986) found that perceptions of conflicting goals predicted intergroup bias among workers of different departments in a manufacturing company.

Despite supportive evidence, the theory has been criticised as it falls short to explain a number of intergroup phenomena that occurred irrespective of the goal structure of two groups (cf. Tajfel & Turner, 2001). So did random categorisation of individuals into ad hoc groups in the absence of conflicting interests and strong ingroup affiliation, previous hostility between groups, as well as during anonymity of group membership, result in intergroup discrimination and preferential treatment of ingroup members (Tajfel et al., 1971). Similarly, mere categorisation by default appears to be associated with cognitive schemata of “outgroup distrust”, as indicated by more competitive behaviour toward outgroups by groups relative to individuals (Insko & Schopler, 1998). Finally, despite the presence of cooperative goals, organizational groups frequently find themselves in conflict (Tjosvold, 1991; cf. Jehn, 1995).

### **3.3.1.2 The Social Identity Perspective**

An alternative framework explaining some of the aforementioned, still outstanding issues and grounded in cognitive-motivational factors, is represented by social identity theory and self-categorization theory (Tajfel, 1978; Tajfel & Turner, 1979; Turner, 1987). Both theories have been subsumed to one social identity approach, as the latter complements the former by detailing the cognitive mechanisms that explain intergroup behaviour and attitudes (e.g., Haslam, 2001, 2004). Thus, social identity theory’s self-categorisation element is elaborated by the cognitive processes representing a compatible, new conceptual component of social identity theory. These processes are complementary with social identity’s motivational-affective proposition. Even

though both theories were originally conceptualised as intergroup relations theories, they have been applied to a wide range of organizational phenomena, including cohesion and deviance (Hogg & Terry, 2000), diversity (van Knippenberg, De Dreu, & Homan, 2004; Williams & O'Reilly, 1998), and leadership (van Knippenberg & Hogg, 2003).

The social identity approach considers both group and individual level variables as predictors of intergroup conflict. According to this perspective, a person can have several social identities, which influence the individual's behaviour and attitudes. A social identity has been defined as an individual's knowledge that a person belongs to certain social groups, combined with some emotional and value significance of this group membership (Tajfel, 1978, p. 63). A person's behaviour can vary on a continuum from interpersonal toward intergroup, where a social identity may be most striking at the intergroup pool (Tajfel & Turner, 1979). The theory further proposes that people seek to establish a positive social identity by means of social comparison processes (Festinger, 1954) with relevant outgroups; these comparisons aim to result in favourable rather than correct conclusions for the ingroup relative to the outgroup, in order to enhance group members' status. Creation of such a positive social identity serves individuals to preserve or enhance their self-esteem, which displays the motivational basis for a variety of strategies individuals may choose, subject to the particular context of the intergroup relationship. For example, group members may try to leave the disadvantaged group and join the advantaged group (social mobility). Since social mobility may frequently be impossible (i.e., group boundaries are impermeable), members of disadvantaged groups may revert to alternative strategies, such as social creativity (i.e. group members change or newly create the dimension on which comparisons with outgroups are made toward dimensions that allow more favourable comparisons), social competition (i.e., competition over status rather than resources), or display intergroup bias, a strategy comprising both ingroup favouritism (a systematic tendency to



evaluate the own ingroup more favourably than outgroups), and outgroup derogation (a tendency to derogate outgroup members; Hewstone, Rubin, & Willis, 2002). The theory further predicts that intergroup bias is related to intergroup conflict (see Haslam, 2001; Hartley, 1996), but does not specify in which particular way (cf. chapter 5).

Self-categorization theory (Turner, 1987) represents an extension of social identity theory, which details the social cognitive processes that generate social identity effects, rather than the motivational and affective factors that cause group behaviour (e.g., Hogg & Terry, 2000; Turner, 1987). Under conditions of salient group membership, cognition is guided by both ingroup and outgroup prototypicality (Hogg & Terry, 2000). Prototypes are cognitive representations which embody all those attributes that characterise ingroups and outgroups (Hogg & Terry, 2000). As a consequence, ingroup and outgroup members are no longer represented as individuals, but rather seen as prototypes, and attitude and behaviour are directed by such prototypes. This depersonalisation, i.e. transformation of the self toward a group member who acts according to prototypical cognitions and behaviour, is the process that explains intergroup behaviour and attitudes, such as stereotyping, ethnocentrism, and intergroup discrimination.

### **3.3.1.3 Motivational Extensions of the Social Identity Perspective**

Theoretical and empirical advances of the theory have focused on the motivational basis of intergroup bias. In particular, researchers have questioned self-esteem as a trigger for intergroup bias, and suggested alternative approaches. The *uncertainty reduction thesis* proposes that persons identify with social groups because of their need to reduce subjective uncertainty (Abrams & Hogg, 1988; Hogg & Abrams, 1993). According to this perspective, intergroup differentiation serves as a means to reduce uncertainty, which is experienced as negative valence.



Some experimental support for this position has been found in a study by Grieve and Hogg (1999), where manipulated uncertainty was found to influence both ingroup identification and intergroup bias. Those participants completing practice trials (low uncertainty) prior to participating in minimal group experiments showed lower group identification and intergroup bias relative to those without practice trials (high uncertainty).

A second alternative motivational explanation has been provided by optimal distinctiveness theory (Brewer, 1991), which views the needs for belonging and differentiation at the heart of intergroup discrimination. The theory proposes that individuals have two powerful, though opposing, social motives: the need for *belonging*, as satisfied by inclusion into a group, and the need for *differentiation*, as satisfied by standing out from others (Brewer 1991). Groups that are exclusive (e.g., work groups) rather than inclusive (e.g., the organisation as a whole) engage more attachment and identification, because these groups satisfy both needs simultaneously (Brewer & Brown, 1998; Riketta & van Dick, in press). Such groups provide social identities that meet the individual's need for inclusion, while serving the need for differentiation between the own and other groups. The theory allows an explanation of why individuals in large, overly inclusive groups were motivated to achieve greater distinctiveness (Hornsey & Hogg, 1999; 2000). It also explains the finding that social identification and ingroup favouritism is greater for members of minority relative to majority groups (Mullen, Brown, & Smith, 1992). In an extension of social identity theory, optimal distinctiveness theory suggests group members display intergroup differentiation as a response to a perceived identity threat. So may subgroups in organisations resist attempts to dissolve group boundaries, as the resulting lack of distinctiveness represents a threat to the group's identity (Brewer, 1991).

Empirical support for the theory mainly stems from laboratory research using the so called "minimal group paradigm" (Tajfel et al., 1971; Tajfel & Billig, 1974). In order to

understand those conditions that are essential and sufficient for eliciting intergroup bias, Tajfel and colleagues reduced experimental groups to cognitive groups, where the only defining criterion was knowledge about group membership (minimal groups). Based on random criteria (such as participants' preferences for the painters Klee or Kandinsky), individuals (both adults and children) remained anonymous, except that they were given a code number, and assigned to one of two groups. Participants were then asked to award amounts of money to pairs of other participants. Individuals did not benefit themselves from these allocations, therefore eliminating any rational link between self-interest and allocation decisions. Tajfel and colleagues consistently found that this trivial intergroup categorisation led to preferential treatments of ingroup members over outgroup members. Additionally, the maximal difference of allocations toward ingroup and outgroup members was given priority over the maximum profit for the ingroup, suggesting that participants were competing with the outgroup, rather than following a strategy of maximising the economic gain for the ingroup.

Despite this convincing experimental support, social identity theory was rarely applied to intergroup research in organisational settings, and if so yielded ambiguous results (e.g., Brown et al., 1986; Hennessy & West, 1999; Hinkle & Brown, 1990; for reviews, see Haslam, 2001; Turner, 1999). Stronger support has been received from studies that investigated intergroup relations within the context of organizational mergers and acquisitions (e.g., Terry & Callan, 1998; Terry & O'Brien, 2001). So did Terry and Callan (1998) find that prior to a merger of two hospitals, employees of the lower status hospital displayed ingroup bias toward the higher status group on dimensions irrelevant to the status differentiation between both organisations.

A number of factors may be responsible for the theory's limited and inconsistent support in organisational settings. Turner (1999) criticises questionnaire measures of group identification as used in organisational research, in particular the the measure developed by Brown et al.



(1986). Turner (1999) argues that those measures do not capture what is meant by the concept of social identity, a phenomenon that – subject to salience mechanisms - is temporarily switched on and off. Furthermore, he criticises that the frequently derived relationship between group identification and intergroup bias (see Hinkle & Brown, 1990, for an overview of studies proposing such a link) is actually in that form not suggested by the theory. He outlines that the theory suggests such a link as one of a number of alternative strategies (as outlined in the preceding section) only under certain conditions, such as the presence of a relevant (rather than any) outgroup, and a status relevant dimension of comparison. Similarly, given that group boundaries are permeable, the movement from members of disadvantaged groups to advantaged groups might represent a suitable alternative.

A different line of reasoning suggests examination of factors that may moderate the social identity-intergroup bias link. For example, employees in organisations frequently belong to many different groups, and therefore have many social identities (Ashforth & Johnson, 2001). Thus, salience mechanisms may be decisive regarding which group identity is at a given time directive of prototypical cognitions and behaviour (Turner, 1987). Van Dick, Wagner, Stellmacher and Christ (2005) showed that salience mechanisms indeed can be temporally switched on and off. Yet most field studies have not explicitly made group identities salient (e.g., Hennessy & West, 1999). Additionally, an ongoing stream of research suggests group identification is not the same for all individuals, but high identifiers respond differently to identity threats than low identifiers (Ellemers, Spears, & Doosje, 2002). Furthermore, even though intergroup bias has been displayed in the absence of interdependence between groups (e.g., Tajfel et al., 1971; Tajfel & Billig, 1974), negative interdependence (competition) may accelerate intergroup bias, even though the relationship between competition and intergroup bias is likely to be mutually



reinforcing (cf. Tajfel & Turner, 2001). Finally, superordinate identification and intergroup contact may represent additional moderators, as detailed in chapter 5.

Hartley (1996) concludes that although the theory is primarily concerned with discriminatory cognitions rather than conflict behaviours as such, its theoretical implications to explain intergroup conflict are relevant. However, even though theory has linked social identity approaches to effective and harmonious relationships (e.g., Ashforth & Mael, 1989; Hogg & Terry, 2000), studies showing intergroup outcomes other than discriminatory cognitions are much needed to prove the theory's applicability to organizational settings (cf. van Knippenberg, 2003).

#### **3.3.1.4 Intergroup Contact Theory**

*The contact hypothesis.* Central to research concerned with the so-called "Contact Hypothesis" is the idea that contact between groups, if it occurs under the defining conditions of equal group status, common goals, cooperative context, and support of authorities, law, or custom, is a means by which to overcome intergroup hostilities (Allport, 1954; Pettigrew, 1998).

Stangor (2004) summarizes at least three mechanisms by which this may be achieved, namely (1) contact provides information that disconfirms stereotypes; (2) intergroup contact leads people to perceive more similarities between themselves and the outgroup; and (3) sustained contact helps reduce anxieties associated with interaction with members of the outgroup.

A number of moderator variables that were found to either inhibit or facilitate the effectiveness with which intergroup contact reduces prejudice in experimental studies are summarised by Brewer and Gaertner (2001), including the frequency and duration of intergroup interaction (e.g., Wilder & Thompson, 1980), the presence of intergroup anxiety (Stephan & Stephan, 1985), the cooperative context of the contact situation (Gaertner et al., 1999), as well as

cooperation outcome (Worchel et al., 1977). Additionally, Pettigrew and Tropp (in press) revealed that, across experimental and field settings, Allport's theorized conditions of optimal contact, if taken together as a "bundle" (but not separately), further enhanced the prejudice-reducing effects of contact, an empirical finding setting the stage for the mere exposure perspective.

*The mere exposure perspective.* Intergroup contact theory in its original version proposed Allport's optimal conditions to be *essential* for intergroup contact to result in conducive intergroup relations (Allport, 1954). Yet, from an alternative perspective, Pettigrew and Tropp (in press) proposed that Allport's conditions might only *facilitate* contact's reduction of intergroup prejudice. Based on cumulative evidence which showed that greater exposure to objects by itself significantly enhanced liking of those objects (e.g., Bornstein, 1989), Pettigrew and Tropp (in press) theorised that mere exposure may suffice to reduce prejudice. Applying this work to intergroup contact research, the mere exposure perspective suggests that all things being equal, greater contact and familiarity with members of other groups should enhance liking for those groups. Supporting the theory's most basic proposition, empirical findings show that mere contact suffices to reduce intergroup bias. In a meta-analysis embracing 715 independent samples across contact settings, 94% of the samples showed positive effects of intergroup contact on intergroup attitudes, with 81% of these samples having realized contact situations without consideration of Allport's conditions. Based on these findings, Pettigrew and Tropp (in press) further develop the "mere exposure perspective" of intergroup contact, which suggests that greater contact and familiarity with members of other groups *per se* enhances liking for those groups, irrespective of any conditions of the contact situation, and that the process underlying contact's ability to reduce prejudice involves the tendency for familiarity to breed liking.



*The generalisation of effects problem.* An issue frequently discussed in the realm of intergroup contact theory concerns the generalisation of contact effects outside the particular contact situation, to the entire outgroup, or even to outgroups not involved in the contact situation (Pettigrew, 1998). So did critics argue that the effects of intergroup contact may be limited to improved attitudes among the research participants only; yet generalisation beyond the contact situation is crucial for the practical applicability of the theory. Pettigrew and Tropp (in press) found meta-analytical support for the generalisation of contact effects “to be far broader than many past commentators have thought”. So did attitudes generalise from the immediate outgroup participant to the entire outgroup, outgroup members in other situations, and even outgroups not involved in the contact situation, stressing intergroup contact’s potential to be a practical, applied means of improving intergroup relations.

### **3.3.1.5 Combining Intergroup Contact and Social Categorisation: Recent Developments**

Within the 1980s, three advanced contact models were developed which further elaborated and detailed the cognitive mechanisms of underlying intergroup contact effects, by integrating aspects of both social categorisation *and* the contact situation (see Hewstone & Brown, 2005, for an overview).

*The decategorisation model (Brewer & Miller, 1984).* Drawing upon self categorisation theory, the *decategorisation* model assumes that categorisation of individuals into groups suffices to elicit intergroup bias. A primary consequence of categorisation is the depersonalisation of outgroup members, which are treated as undifferentiated representatives of a social group according to outgroup prototypes. Consequently, the theory posits that contact should be most effective in reducing intergroup bias if cross group interactions are person-based, rather than



category-based. This perspective suggests that a contact situation should be created such as to reduce the salience of category distinctions and to promote opportunities to get to know outgroup members as individuals. Attending to personal characteristics of group members disconfirms category stereotypes, breaks down perceptions of the outgroup as a homogeneous unit, and thereby reduces prejudice.

Experimental evidence by laboratory experiments using artificially created social categories provided support for the model (e.g., Bettencourt, Brewer, Croak, & Miller, 1992; Miller, Brewer, & Edwards, 1985). Under “personal focus” conditions, which promoted interpersonal interaction, participants exhibited less ingroup bias than under conditions where group distinctions were salient.

As a critique of the model, Vivian, Hewstone and Brown (1997) questioned whether group salience was really dissolved in the “personal focus” condition. As participants kept wearing their group identification badges throughout the experiment, cues of group categorisation were present in all conditions. Additionally, the authors criticised the model’s rationale, outlining that individuals might tend to interpret contacts with outgroup members as the “exception of the rule”, rather than representatives for the group as a whole, because group categories are downplayed in the contact situation. Finally, the authors questioned whether dissolving group boundaries would not inhibit generalisation effects toward the outgroup as a whole.

*The common ingroup identity model (Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993).* Instead of resolving group categories entirely, the common ingroup identity model proposes that *recategorization* of subgroups into higher order groups, i.e. transforming group members’ perceptions from “us” and “them” to a more inclusive “we”, reduces dysfunctional intergroup relations by minimizing attention to category differences but directing attention to the superordinate, inclusive group identity (Brewer & Brown, 1998). Thus, changing group

members' perceptions of group boundaries toward an inclusive category should generate cognitive and motivational processes resulting in more favourable intergroup attitudes and behaviour. In an extension of the model, Gaertner and colleagues (1999) state that the recategorization process may not require the resolution of subgroup boundaries; instead, subgroup boundaries may remain within the context of a superordinate category, as in the model's *dual identity* form (see chapter 5, for a more detailed account).

Empirical evidence for the model has been provided in a series of experimental studies (e.g., Gaertner, Mann, Murrell, & Dovidio, 1989; Gaertner, Mann, Dovidio, Murrell, & Pomare, 1990). Field studies similarly supported the proposition that an inclusive category was related to reduced intergroup bias; yet the dual identity effect found only limited support (see Gaertner, Dovidio, & Bachman, 1996; cf. chapter 5).

Criticism of the model included that full decategorisation may be difficult to achieve in real intergroup contexts (e.g., organizations), due to political or functional infeasibility. Additionally, it could not convincingly be shown that reduction of bias under common ingroup identity conditions generalizes beyond the contact situation, as measures of generalisation revealed weaker effects (e.g., Gonzalez & Brown, 2003).

*The mutual intergroup differentiation model (Hewstone & Brown, 1986; Vivian, et al., 1997).* This approach differs from the other two inasmuch as the dissolution of subgroup boundaries is not suggested. The model, as originally conceptualised by Hewstone and Brown (1986), and reformulated by Vivian et al. (1997), suggests that equal status relationships can reduce ingroup bias even if the original group identities remain somewhat salient, so long as they are not threatened by the contact; this is the case, e.g., when groups have differentiated areas of expertise, i.e. the intergroup situation is characterised by mutual differentiation. Thus, the need for a positive social identity can be exploited in the intergroup contact situation if an intergroup



orientation is maintained, i.e. when subgroup category identities remain salient during intergroup contact. Positive and pleasant contact with outgroup members may then result in positive attitudes that are more likely to generalize to the outgroup as a whole (Brewer & Brown, 1998).

Support for the model stems from both experimental and quasi-experimental research (González and Brown, 2003; Brown, Vivian, & Hewstone, 1999). Brown et al. (1999) conducted two studies in which heightened membership salience between groups (achieved by enhancing the group prototypicality of individual outgroup members) facilitated the generalisation of positive attitudes toward the outgroup as a whole during cooperative intergroup contact.

Brewer and Brown (1998) criticize some sort of dilemma inherent to the model. On the one hand side, contact is proposed to provide positive experiences that disconfirm negative stereotypes about the outgroup, suggesting attitudes toward the outgroup to become more positive. On the other hand, such contact also reinforces perceptions that both groups are distinctly different, and thereby foster ingroup-outgroup categorization. Associated negative beliefs about the outgroup may also be strengthened, even if the interaction context is positive. Some evidence that intergroup contact may in fact provoke more anxiety than interpersonal one stems from a study of Muslim-Hindu contact (Islam & Hewstone, 1993), where intergroup contact tended to be correlated with increased anxiety.

*Pettigrew's (1998) reformulated intergroup contact theory.* In line with previous versions of the intergroup contact theory (e.g., Allport, 1954), Pettigrew (1998) proposes both situational factors and participants' experiences and characteristics to be influential aspects of the contact situation. His theory contains three new aspects. First, the concept of friendship potential is introduced; second, a developmental, longitudinal perspective of the effects of intergroup contact is proposed; and third, different effects of intergroup contact at different stages of the model are proposed.



Pettigrew considers friendship potential to be an essential condition that the contact situation must provide individuals with, in order to result in positive intergroup outcomes. The development of cross-group friendships allows the reduction of intergroup bias by means of the four mediating mechanisms (1) learning about the outgroup, (2) changing behaviour, (3) generating affective ties, and (4) ingroup reappraisal.

As friendships develop over time, the model is longitudinal in nature and suggests different effects of intergroup contact at different stages. Initial contact leads to decategorization (cf. Brewer & Miller, 1984), which may result in both positive (e.g., liking) and negative intergroup outcomes (e.g. initial anxiety). Initial contact, however, does not lead to a generalisation of contact experiences toward the outgroup as a whole. Once contact is established, categorisation is reinstalled (cf. Hewstone & Brown, 1986), and thereby intergroup contact effects generalised to the outgroup as a whole. Finally, further establishment of contact results in unifying both groups cognitively, thereby generating a common ingroup identity (cf. Gaertner et al., 1993). If contact is established, cross-group friendships develop, and a maximal reduction of prejudice may be achieved.

Pettigrew (1998) reviews a number of studies supporting the proposition that intergroup friendships reduce intergroup prejudice. Yet empirical evidence supporting the longitudinal nature of the model and its differential effects at different stages is still needed.

The model's strengths may include that it integrates existing models of intergroup contact (i.e., the decategorization model, the mutual intergroup differentiation model, and the common ingroup identity model) within one intergroup contact model. Criticism of the model may include its focus on intergroup friendship, especially since meta-analytical evidence suggests mere contact suffices to reduce intergroup bias (Pettigrew & Tropp, in press).

### 3.3.1.6 Cross Theory Critique

Instead of viewing the three classical theories as mutually exclusive, they rather represent complementary perspectives suggesting different sources of intergroup conflict. Whereas realistic conflict theory suggests intergroup conflict to be rooted in conflicts of interest, the social identity perspective stresses self categorisation as a source of conflict, and intergroup contact theory underlines the significance of paucity of contact between groups. The four introduced temporary models of intergroup contact do pay attention to this complementarity by integrating interdependence, social categorisation, and intergroup contact. Similarly, implications for conflict resolution differ according to the respective theory. While realistic conflict theory suggests the introduction of superordinate goals, social cognitive approaches suggest the reduction of conflict by means of recategorization, decategorisation, or mutual differentiation (see Brewer & Brown, 1998, for an overview). Finally, theories vary regarding their *applicability* of suggested measures to reduce intergroup conflict. Most applicable to organisations may be the dual identity model (Gaertner et al., 1989) as well as the mutual differentiation model (Vivian et al., 1997), as both do not require the dissolution of group boundaries, which might be infeasible (or undesirable) in organizational contexts. Additionally, the common ingroup identity model (Gaertner et al., 1993) incorporates Allport's (1954) conditions of optimal contact as essential elements, which may be both less suitable for organisational research where these can not be manipulated, as well as be at odds with the aforementioned recent findings on the mere exposure perspective (Pettigrew & Tropp, in press). Similarly, the introduction of superordinate goals, as suggested by realistic conflict theory, may only be feasible and desirable to a certain extent. First, most conflict issues that emerge between groups may in fact be mixed motive rather than purely competitive, suggesting that interests coincide in some aspects, but are in conflict in others, allowing to a



varying extent both competitive and cooperative actions (cf. Kramer, 1991). Second, conflicts of interest are frequently aligned by fixed pie assumptions, such that the negotiators do not realise the integrative potential inherent in the situation (cf. Pruitt & Carnevale, 1993).

### **3.3.2 CONFLICT AS CONDITION**

So far, the theories presented in the preceding section have dealt with the question how intergroup conflict can best be predicted or reduced. If the research question is, however, how conflict affects group and organisational effectiveness, different approaches are needed, which are outlined in the remainder of this chapter.

#### **3.3.2.1 Interdependence Theories**

Interdependence theories do strictly speaking not represent theories of intergroup conflict in particular, but rather integrative theories explaining the behaviour of social entities (individuals, groups, or organisations) in general, and how this affects behaviour and outcome. However, these theories allow predictions about how conflict dynamics may affect effectiveness.

*Game theoretical approaches (Kelley and Thibaut, 1959; von Neumann & Morgenstern, 1944).* Game matrices and experimental devices gained popularity, as they allow for a mathematically precise and “objective” definition of outcome interdependence and related reward structures (Deutsch, 2003). Kelley and Thibaut (1959) operationalised interpersonal situations in the form of an outcome matrix, containing combinations of gains and losses of two interacting parties. Depending on combinations of competitive or collaborative choices, individuals can maximise their joint or individual gains. From a theoretical perspective, outcome



choices can be given different relative values toward each other, by which competitive or cooperative situations can be created. For instance, for situations where outcomes maximising joint gains are valued higher than those maximising individual gains at the expense of other's gain, cooperation is likely. Vice versa, situations where joint gain outcomes are valued less than individual gains, competition is likely.

Yet game theorists have recognised that conflict is characterised by “mixed motive” situations incorporating aspects of both cooperation and competition (Schelling, 1960). This is reflected in game theoretical developments where cooperative and competitive interests may be intertwined in conflict, as in the form of “non-zero-sum” or “coalition” games (Deutsch, 2003). Some game-theoretical operationalisations, such as the Prisoner's dilemma game, frequently use outcome matrices which allow – subject to the other party's behaviour – maximisation of an individual's gains by means of *both* competitive and cooperative strategies.

*The theory of cooperation and competition* (Deutsch, 1949; 1969; 1973; 2003; Tjosvold, 1998). The most popular representative of interdependence theory in organizational contexts may be the theory of cooperation and competition. In contrast to Kelly and Thibaut's (1959) framework, this theory has a stronger focus on the motivational orientation of individuals. According to the theory, defining conflict as opposing interests has unrecoverable drawbacks, as this both denies the reality that people with cooperative, highly overlapping goals can be and often are in conflict, and confounds conflict with competition (Deutsch, 1973; Tjosvold, 1998). To distinguish conflict from competitive goal interdependence, Deutsch (1973) defined conflict as incompatible activities rather than opposing interests. As an alternative position to game theoretical approaches viewing conflicting goals rather as structural realities, Tjosvold and Deutsch view individuals' beliefs about their goal interdependence with other people as rooted in subjective perceptions, and thus prone to perceptual biases (Tjosvold, 1988; Deutsch, 1949,

1973). This stance is consistent with assumptions made by social judgment theory (Brehmer, 1976) that cognitive factors are central to explain certain forms of conflict, and it is supported by experimental research showing that cognitive and decision processes in negotiation (e.g. fixed-pie assumptions, illusory conflict, and reactive devaluation) may accelerate conflicts of interest (Pruitt & Carnevale, 1993).

Deutsch (1949) proposed that how people believe their goals are interlinked is a useful way to understand the dynamics and consequences of interaction. He identified three alternative goal interdependencies: cooperation, competition, and independence. Most situations may be some mix of those interdependencies (cf. the aforementioned notion of mixed motive situations). In *cooperation*, people believe their goals are positively interrelated. They want each other to perform effectively, as if the other reaches his goal, that helps one self's goal attainment in turn. Under *competitive interdependence*, people believe their goals are negatively related, so that one's successful goal attainment makes others less likely to reach their goals. Thus, in competition individuals believe that they are more effective if others do *not* reach their goals: Others failure is one's success, and other's success one's failure. Under conditions of *independence*, people conclude that their goals are unrelated. The success or failure of the other has no impact on one self's goal attainment.

Tjosvold (1998) describes that parties' conclusions about their goal interdependence sets the stage for conflict dynamics to occur. Under *cooperative interdependence*, a mutual exchange and an open-minded discussion of diverse positions (constructive controversy) occur. These interaction processes strengthen the quality of negotiated decisions, productivity, and reaffirm the relationship between the parties in conflict. This process results in mutual affirmation, success, and confidence in future collaboration. Under *competitive interdependence*, discussions of differences are frequently avoided, or result in closed-minded discussions and attempts to coerce



the other toward one's stance. Such destructive controversy results in low quality decisions, fragmented relationships, low productivity, and relationships characterised by hostility, frustration, and revenge. If parties perceive their goals to be *independent*, employees consider their interests to be unrelated, so that goal attainment of one neither helps nor hinders goal attainment of the other.

The theory of competition and cooperation has found plenty of support in experimental, educational, and organizational settings. Cooperation rather than competition and goal independence was found to promote achievement and productivity, among others (see Johnson & Johnson, 1989; Johnson, Maruyama, Johnson, & Nelson, 1981; Stanne, Johnson, & Johnson, 1999; Tjosvold, 1998). In organizational settings in particular, constructive controversy within a cooperative context was found to improve effectiveness in the form of improved decision making (Tjosvold & Deemer, 1980), enhanced productivity (Tjosvold, 1988a) and better customer service (Tjosvold et al., 1992).

### **3.3.2.2 Walton's Theory of Conflict in Lateral Relationships**

Walton's (1966) structural model of interdepartmental conflict is concerned with the more stable conditions of the organizational system that shape the conflict process (Thomas, 1992). He presupposes that two units' orientation of decision making to optimise either a unit's sub function or to optimise the combined function of two units sets the stage for the three processes: (1) problem-solving vs. bargaining decision-making style, (2) the structure of the interunit relationship, and (3) attitudes between the units (e.g., friendliness, trust and respect, inclusion of other unit). In turn, these processes mediate the relationship between a competitive or cooperative orientation to decision-making and group performance. Depending on the extent on each of the



three dimensions, Walton specifies two contrasting types of lateral relationships: *Integrative relationships* are characterised by problem solving, a flexible, informal and open structure, and positive attitudes, whereas *distributive relationships* are characterised by bargaining, a rigid, formal, circumscribed structure, and negative attitudes.

Another objective of the theory was the attempt to outline how higher management and unit managers affect subunits' orientation to decision making. Walton outlines three different classes of variables of higher management influence: a.) the reward structure applied to each unit; b.) the outside demands plus capacity limitations of each unit, i.e. the amount of resources made available for the units; and c.) the informational limitations imposed upon each unit, i.e. the amount of needed information and knowledge provided and forwarded to the units. A fourth source of influence on orientation to decision making is based on the personalities of principals in each unit.

The theory's empirical support stems from anecdotal evidence, as summarised by Walton and Dutton (1969). Rahim (2001) questions the validity of those early studies, calling for further research. Similarly, the theoretical concepts involved, e.g., individuals bargaining styles and attitudinal structuring, have been much further developed since. The theory's advantages, however, include that it represents one of the few theories that explicitly outline categories of variables in order to explain the link between intergroup conflict and group effectiveness. Further, it is one of the first theories that provided an integrative framework of organizational intergroup conflict, which focuses on the structural characteristics of organizational intergroup relations.

### **3.3.3 DISCUSSION OF THEORIES OF INTERGROUP CONFLICT**

The theories of intergroup conflict have been evaluated separately within the preceding section regarding their empirical support, applicability to organisations, and usefulness for this research. The focus of the following section is thus to discuss a number of issues running as common threads through these theories, selected with a view on the research questions of interest in this thesis. In particular, I will discuss the extent to which theories integrate aspects of the conflict process (Thomas, 1992; chapter 1); the role of interdependence within the theoretical models and the distinction of subjective vs. objective conflict; and the issue of functional vs. dysfunctional conflict.

### **3.3.3.1 Extent of Integration of Aspects of the Conflict Process**

Theories that view conflict as a condition (i.e., interdependence theories, and the theory of conflict in lateral relationships) adapt a rather broad scope by incorporating a number of aspects of the conflict process. They focus on the *awareness* of conflicting goals, on the resulting *cognitions and emotions* (e.g., hostile intergroup attitudes); and make reference to *motivation* and eventual *conflict behaviour* (e.g., discrimination of the outgroup). Both interdependence theories and the theory of conflict in lateral relationships also allow to derive testable predictions regarding the outcome of conflict. For instance, Tjosvold conducted a number of studies where he investigated the effect of competition, collaboration and controversy on organisational performance outcomes (e.g., Tjosvold, 1988a; Tjosvold et al., 1992). Similarly, the theory of conflict in lateral relationships aims to explain how intergroup relations affect (within-) group effectiveness. Conversely, realistic conflict theory does not allow any predictions regarding the actual *outcome* of the conflict – in a sense, this restrains it to a theory concerned with how aspects of intergroup relations (conflicts of interest) predict other aspects of intergroup relations



(intergroup attitudes and behaviour). The theory's limitation gets obvious if the researcher aims to explain group or intergroup performance outcomes as a function of intergroup relations. Additionally, all three approaches suggest or imply that individuals' *motivation* to conflict behaviour is a function of the objective outcome interdependence.

Social cognitive approaches and intergroup contact theory, on the other hand, similarly incorporate several aspects of the conflict episode, namely intergroup *emotion*, *cognition* (ingroup bias) and *behaviour* (outgroup derogation, social competition). Additionally, the social identity approach explicates the *motivational* basis for intergroup behaviour (enhancement of self-esteem, optimal distinctiveness, or uncertainty reduction). Yet, those approaches also fall short in making explicit predictions about the conflict *outcome*, similarly restraining them to theories of intergroup relations that predict intergroup relations.

### **3.3.3.2 Role of Interdependence and Distinction between Subjective and Objective Conflict**

A striking difference among approaches is the role of outcome interdependence. While intergroup contact theories, along with interdependence approaches, view goal interdependence as moderator or condition affecting intergroup outcomes, the social identity approach makes explicit that intergroup interdependence is not a precondition for the effects of social categorisation. Instead, social competition and perceptions of negative interdependence have rather been discussed as outcome variables (cf. Brewer & Gaertner, 2001).

A related issue refers to the understanding of conflict as subjective vs. objective. For instance, both realistic conflict theory and game theoretical interdependence approaches appear to imply that "objective" goal interdependence is directing interaction processes. Yet, social judgement theory (Brehmer, 1976) would suggest that subjective perceptions mediate objective



interdependencies. Conversely, the theory of cooperation and competition, explicitly states that it is individuals' perceptions of how their goals are interlinked that direct behaviour, rather than the "objective" interdependence of goals or interests. Similarly, Tajfel and Turner (2001) discuss that most cases of conflict between human groups reflect an interdependence of social and psychological causation. They argue for that the relation between the objective and subjective determinants of intergroup attitudes and behaviour is fluent and theoretical. Misjudgements over real interests have been supported by experimental research, which found that parties perceive conflicting interests like fixed pies, thereby not realising collaborative win-win resolutions that are inherent in the negotiation (cf. Pruitt & Carnevale, 1993). As noted before, intergroup conflict issues may in fact be characterised by mixed motive rather than purely competitive situations, allowing the integration of both competitive and prosocial action from both parties, and social categorisation processes may affect both the perception and intensity of intergroup resource competition over limited resources (Kramer, 1991).

In conclusion, intergroup conflict over goals and interests appear to be characterised by both structural *and* psychological processes. Such a perspective therefore allows to investigate competitive goal interdependence as both an outcome variable (see chapter 5) *and* a predictor (see chapter 7).

### **3.3.3.3 Integration of Functional vs. Dysfunctional Conflict**

As discussed in chapter 1, intergroup conflict may incorporate both functional and dysfunctional aspects. However, social cognitive approaches as well as intergroup contact theory are exclusively concerned with dysfunctional aspects. The only theory that explicitly deals with functional conflict is the theory of cooperation and competition. According to the theory, conflict

is functional if it occurs under cooperative rather than competitive interdependence. The controversy is then constructive rather than destructive (Tjosvold, 1998), and likely results in effective outcomes. Surprisingly, however, none of the theories concerned with competition explicates conditions under which competition itself may be functional. Yet such effects have been found empirically (cf. motivation and group performance enhancements through intergroup competition; Mulvey & Ribbens, 1999). Even though realistic conflict theory outlined that intergroup competition leads to within group cohesion and a group's motivation to outperform the outgroup, this has rather been a by-product of the theory than a well defined framework. As criticised by Putnam (1997), intergroup conflict (in contrast to intra group conflict) falls short to explain the positive effects of conflict. Chapter 7 investigates the role of moderators such as means interdependence, in examining functional aspects of intergroup competition.

## **Chapter 4: Method, Organizational Context, and Sample**

### **4.0 CHAPTER SUMMARY**

This chapter aims to provide a rationale for the methodology chosen in this research, and to introduce the reader to the research design and procedure. Furthermore, the research instruments are outlined, and both the organizational context and the research sample are described.

### **4.1 RESEARCH PARADIGM AND RESEARCH APPROACH**

#### **4.1.1 Research Paradigm**

Researchers frequently see the use of quantitative and qualitative methods to be embedded within a certain research paradigm. A paradigm is a cluster of beliefs dictating for scientists of a particular discipline what should be studied, how research should be done, and how results should be interpreted (Bryman, 2001). Kuhn (1970) argued that paradigms are incommensurable, and thus inconsistent with each other because of their different assumptions and methods. Therefore, within the social science, quantitative and qualitative research are often considered as two opposing paradigms. However, some authors argued that quantitative and qualitative research do not necessarily need to be seen as incommensurable paradigms, as both approaches in fact do share a considerable amount of overlap and commonalities (see Bryman, 2001, chapter 21, for a discussion).



This line of reasoning led some researchers to apply multi-strategy research, combining quantitative and qualitative research strategies (for an excellent application to organizational conflict research, see Jehn, 1995). This approach is not compatible with the view that quantitative and qualitative research represents mutually exclusive paradigms, but rather views both approaches to view the same research phenomenon from different, complementary perspectives.

#### 4.1.2 Multi-Strategy Research and Methodological Eclecticism

The academic literature mainly discusses two positions about the nature of qualitative and quantitative research. Whereas an *epistemological* position claims the respective methods to be grounded in incompatible epistemological (and ontological) principles, the *technical* position recognises the connection of distinctive epistemological and ontological assumptions, but does not see these connections as fixed and ineluctable. Hence, in the latter view research methods are seen as rather autonomous and free-floating. Such a view allows the researcher to overcome the limitations and restrictions germane to a rather epistemological position, and to utilize the advantages that both qualitative and quantitative research bear. Hammersley uses the expression “methodological eclecticism” to express the multiple advantages of multi-strategy research (see Hammersley, 1996, for an overview).

Morgan (1998) suggests classifying quantitative and qualitative research in terms of two criteria: the priority decision and the sequence decision. The *priority decision* suggests giving quantitative research priority over qualitative research in this thesis, because the focus is on the test of a theoretical framework rather than the development of a theory. The disciplines dominant in organisational conflict research are organisational behaviour and applied social psychology; within both disciplines, theoretical frameworks exist that allow the development of testable

hypotheses. The *sequence decision* refers to the timing of the employment of qualitative and quantitative methods. In this research, questionnaires preceded the partially qualitative interviews, because of feasibility and economic reasons (within the first questionnaire, an item asked for volunteers for the interviews).

Thus, quantitative research is the primary focus in this research, and qualitative information is used to complement the quantitative analysis by providing insights about the nature of work between teams, the nature of problems encountered between groups, and to make reference to the organizational context.

Based on Hammersley's (1996) as well as Morgan's (1998) classifications, aspects of relevance for my research that justify and recommend a multi-strategy approach include:

- (1) The facilitation of the interpretation of the relationship between variables, and
- (2) The illumination of the researcher's *and* participants' viewpoints.

## 4.2 STUDY DESIGN AND PROCEDURE

### 4.2.1 Study Design

**TABLE 4**  
**Study Design**

|                  | Piloting | Main Study |        |        |
|------------------|----------|------------|--------|--------|
|                  |          | Time 1     | Time 2 | Time 3 |
| Questionnaire    | X        | X          | X      |        |
| Interviews       | X        |            | X      |        |
| External ratings |          | X          | X      | X      |

Table 4 illustrates the study design. This study employed a repeated measures design, where predictor and control variables were assessed at Time 1, but outcome measures gathered at Time 2 and Time 3. Such a design allows the examination of incremental change within the outcome variable, and is therefore superior to mere cross-sectional designs (Holland, 1986). Additionally, the design allows the statistical control of third variables. Disadvantages, however, include that unmeasured non-constant third variables are not controlled for; reverse causality is not tested; and synchronous effects may not be detected if the independent variable is unstable (cf. Cohen, Cohen, West, & Aiken, 2003; Zapf, Dormann, & Frese, 1996). For the purpose of this study, such a design was deemed optimal because of feasibility and practical reasons; participating organisations did not welcome surveying participating teams for a second and third time.

#### **4.2.2 Study Procedure**

*Piloting.* Informal piloting was deemed sufficient, as predominantly established measures with good psychometric properties were used. In a first step, four health care workers from different organizations were asked to comment on the usefulness and comprehensibility of the questionnaire. Minor amendments were made to the survey, and one scale was exchanged: Participants reported problems with items of an adaptation of Jehn's (1995) intragroup conflict scale to the intergroup level. As a prior study within Europe similarly reported that participants had difficulties responding to some of the scale's items (De Dreu & van Vianen, 2001; p. 315), the scale was exchanged for an alternative one (Janssen, et al., 1999). The latter had been used previously within Europe, thereby allowing to avoid potential transferability problems as to



cultural or language issues. In the second step of the pilot, a volunteering pilot team consisting of managers of one of the participating organizations commented on the measures, which resulted in minor amendments. Finally, the project's supervisor reviewed the instrument before it was sent out to participants, and no further amendments were made.

In parallel, the interview guide was piloted with two colleagues (see chapter 2), and the timing of the interview as well as the sequence of questions to be asked were amended accordingly.

*Acquisition.* Even though negotiating access was a unique process in all organisations, the following (simplified) procedure included the minimum steps that ran as common threads through negotiations:

202 Primary Care Trusts across England were contacted in order to identify the respective human resource managers, or heads of personnel. These individuals were thought to be most interested in the topic and outcomes of this research. A booklet outlining the research was sent to them (appendix 4), and a follow up call was made a couple of days later. Once support from human resources or personnel was assured, access was negotiated with the CEO, and usually a board of directors, departmental heads, or other managers. In parallel, ethical approval was sought for this research from four local (LREC) and one national (MREC) ethical committee. This included applying for approval, attending the meetings of the ethical board in order to defend the research project, and responding to the respective amendments that were required (information and application documents, as well as an outline of the required procedures, is available at <http://www.gqp22.dial.pipex.com/MRECAdmin.htm>). I negotiated access (i.e., gained both organisational and ethical approval) from seven Primary Care Trusts. In two of the seven organisations, access was withdrawn in the course of further preparations made for the field work, resulting in five participating organisations. Once organizational support was assured, a liaison person within each organization was consulted to identify the “principal groups” to

which staff were primarily attached to, and in which they spent the most time working. Management groups were not included since I wished to avoid power and status asymmetries between groups at different hierarchical levels. I approached all organisational groups that were identified and inquired whether participation criteria were fulfilled, i.e. whether teams were established (i.e., existed for more than 5 months), whether members worked together interdependently, the groups had three or more members, and groups worked interdependently together with at least one other group (cf. Alderfer, 1987; Brett & Rognes, 1986). Suitable workgroups were invited to participate, and it was explained that both the anonymity of participants and the confidential treatment of the data were guaranteed. Fifty-seven groups (46 %) agreed to participate. Each group that agreed consented by returning the names of all group members as well as the group's name to the researcher by completion of the team data collection form (appendix 6). Additionally, groups were asked to agree upon the one other group within the organization (apart from management) they worked most closely with, in order to ensure both interaction frequency and high interdependence between lateral groups. Since all identifiable organisational groups were approached without preselection, and the response rate was reasonable for field research, I consider the sample representative for teams in primary care. The process of negotiating access to organisations and teams lasted from October 2002 to November 2003.

**Main study.** An introductory letter was mailed out to all group members of the 57 teams accompanying the first questionnaire (appendix 7). The letter aimed to make ingroup membership salient and explicit. The letter stated that *“you may be a member of more than one group; however, for this questionnaire we would like to ask you to refer only to the (ingroup's name inserted) group when answering questions that refer to ‘your group’ or ‘the group you are working on’“*. To avoid self-serving bias as well as common method variance, I asked groups to



consent to me approaching the groups' line managers who were not members of the groups, in order to obtain ratings of group performance and intergroup productivity. Forty-seven groups agreed, and a total of 40 external ratings at Time 1 was obtained (appendix 9). A selection question within the questionnaire asked participants whether they were willing to participate in a one-time interview. 40 volunteering individuals were contacted, of which 31 participated in the interviews (see chapter 2, for details). Five months after the first questionnaire, the second questionnaire (Time 2, appendix 8) was mailed out to all participants, and the second rating sheet was sent to the line managers. 141 individuals returned suitable questionnaires, and 40 external ratings were received. Ten months after the first questionnaire, the sending out of the third and final rating sheet to the line managers concluded the research project. 27 ratings were received.

*Team and organizational feedback reports.* After the first wave of questionnaires, teams received their individual team feedback report (appendix 10). This report compared the scores of self-report data from members of each individual team with the average score of other teams within the sample (team level benchmarking). From a methodological point of view, this raises the concern of whether the feedback given to team members functioned as an (unintended) intervention that affected the results of the longitudinal analysis. Within the repeated measures design, outcome measures at Time 2 and Time 3 were predominantly provided by the groups' line managers, who were not included into the feedback process and did not receive the feedback reports of the teams they supervise, thereby eliminating this problem. However, analysis on group satisfaction Time 2 (chapter 7) could be biased by the feedback given to the teams, which represents a study limitation.

At the end of the research project, top management and human resources of each participating organisation received an organizational feedback report (this report closely



resembles the team feedback report, see appendix 10). This report compared teams within the organisation with the total sample of all other teams (organisational level benchmarking).

## **4.3 THE INSTRUMENTS**

### **4.3.1 Questionnaire Time 1**

#### **4.3.1.1 Compilation of Measures**

Where available, established measures were used for the questionnaire, and only the intergroup effectiveness scale was created anew (see chapter 6 for details). In order to avoid positioning effects, such as primacy and recency effects, two versions of the questionnaire were created where the order of items for scales requiring value judgements was randomly altered.

#### **4.3.1.2 Time Frame**

Van de Ven and Ferry (1980) advice that researchers should specify to what time scale questionnaire items refer to, rather than leaving this issue to the speculation of the participant. Especially for longitudinal research, the time frame to be chosen should be theoretically meaningful, i.e. ideally short enough to allow detection of short term change, but at the same time long enough to allow changes to occur (Mitchell & James, 2001). Decisions about time frame consequently should be preceded by considerations about the stability of the constructs of interest, as well as the expected emergence of effects. Group performance outcomes represented a

core part of this research, and the time frame chosen was 5 months, which resembles time frames of group performance outcomes in other studies (e.g., West & Anderson, 1996, chose 6 months). Such a rather short frame was chosen because access negotiations indicated that changes in team structures and the organisations themselves were quite frequent. The time frame was introduced above those blocks of questions that were thought to be affected by time fluctuation. Consequently, questionnaires and external performance ratings at Time 2 and Time 3 were disseminated 5 and 10 months after Time 1, in order to allow capturing both short- and medium-term effects.

#### **4.3.1.3 Choice and Adaptation of Items**

Multilevel theory (Chan, 1998; Kozlowski & Klein, 2000) advises that the theory of a construct should be the only overarching principle on issues of aggregation, and this theory should guide both the theoretical understanding of the constructs and the choice of the measures thereof. Therefore scales were chosen where the referent matches the theoretical level of the construct. For example, group identification represents an aspect of individuals' self-concept, thus an individual-level construct, which is matched by its item referent ("I" and not "we/our group"). Conversely, intergroup conflict describes the relationship between groups as two entities, is subjective, and perceptual (cf. Labianca et al., 1998). Thus, it has been conceptualised as a "shared property" group level construct, because it emerges from group members' shared perceptions, affect, and behaviour. As shared level properties suggest to construct items that reference the higher level (i.e., "we/our group" are in conflict with "them/ members of the other group"; cf. Klein, Conn, Smith, & Sorra, 2001), items and scales were selected that matched this referent.

As some scales were not available for the intergroup context (i.e., relationship conflict and intergroup competition), I chose to amend scales that have been used for within-group constructs. Yet amendments of established scales have been critically discussed as representing a change in the respective construct that is to be measured (Schwarz, 1999). Thus, scales were amended subject to the fulfilment of three conditions. First, the theoretical rationale would justify a shift in levels from within to between groups; second, a subject matter expert within the field signed off that the scale could indeed be adapted to measure the “between-group” construct. Third, after the respective rewording has been made to reflect the reference shift (i.e., from “we” or “our team” to “both teams” or “them”), informal piloting suggested that the measures were understandable and meaningful. Three scales, the intergroup competition scale (Alper et al., 1998), the relationship conflict, and the task conflict scale (Janssen et al., 1999), were amended according to this procedure.

#### **4.3.1.4 Content**

The questionnaire (appendix 7) included scales with relevance to this thesis, as well as scales that served other purposes. Those scales with relevance to this thesis are documented in the following.

An introduction page outlined:

- Confidentiality and anonymity of this study
- The disposal of information provided by participants



- The time required to complete the questionnaire
- An example of how to fill in the questionnaire

The remainder of the survey was organised into three sections. Section 1 included questions regarding team working; section 2 included questions about intergroup relations; and section 3 asked participants for descriptive and demographic information regarding both their person and the team they are working in.

*Section 1: team working.* This section assessed team characteristics, team processes, and team outcomes.

The first block of questions (block 1.1) in this section assessed aspects of real teams and the team authority matrix (Wageman, Hackman, & Lehman, 2005). In particular, two items each, ranging from 1 (very inaccurate) to 5 (very accurate), measured:

The clarity of group boundaries: The items measured the extent to which team members perceived group boundaries rather clear or permeable. An example item was “Team membership is quite clear – everybody knows exactly who is and isn’t in the team.”

Group stability over time: The items measured team members’ perceptions as to whether team membership change is rather frequent or infrequent. An example item was “There is so much ambiguity about who is in this team that it would be nearly impossible to generate an accurate

membership list.” (reversed)

Task interdependence: The items measured team members’ perceptions regarding the extent to which working in the team requires to work interdependently with other team members. An example item was “Generating the outcome or product of this team requires a great deal of communication and coordination among members.”

Within the same block, four additional questions assessed the extent to which teams had the authority to monitor and manage work process and progress, to design the team and its organizational context, and to set the overall direction. Items were categorical (yes or no choices given). An example item was “Our team also has the authority to alter features of the larger organization that are affecting our team or its work (for example, the resources available to us, the information we receive, training procedures, and so on).”

The next block of questions (block 1.2) measured individuals’ satisfaction with the team with a three item scale from Wageman et al. (2005), ranging from 1 (strongly disagree) to 5 (strongly agree). An example item was “I am pleased with the way my colleagues and I work together.”

The following block of questions (block 1.3) measured both individuals’ identification with their group and the organisation, with four items each (Doosje, Ellemers, & Spears, 1995), ranging from 1 (strongly disagree) to 5 (strongly agree). An example item was “I am pleased to be a member of this team.”

Block 1.4 measured the extent to which the team met its performance standards with five questions from Vinokur-Kaplan (1995), ranging from 1 (not at all), to 5 (completely). An example item was “During the past 5 months, to what extent do you feel that your team met the *standards of timeliness* expected by the PCT?”

**Section 2: intergroup relations.** This section assessed questions on a number of intergroup constructs, including behavioural, attitudinal, and structural aspects.

At the beginning of this section, intergroup contact and intergroup acquaintanceship was measured with two items each from the organisational assessment inventory (van de Ven & Ferry, 1980). An example item was “Whilst working for your team during the past 5 months, how often did you interact on work related matters with members of team X?”, ranging from 1 (not at all) to 7 (daily).

Block 2.1 assessed individuals’ negotiation style with the Dutch Test for Conflict Handling (De Dreu et al., 2001). Items measured the conflict styles contending, problem solving, avoiding, accommodating, and compromising, with four items each, ranging from 1 (not at all) to 5 (completely). An example item was “I work out a solution that serves my own as well as other’s interests as well as possible.”

Block 2.2 assessed both task (7 items) and relationship conflict (6 items) with scales adapted from Janssen et al. (1999). An example item was “Diverse perspectives on important issues are the rule rather than the exception.”



Block 2.3 contained items measuring intergroup effectiveness. The scale has been developed within this research project, and scale development is detailed in chapter 6. An example item was “To what extent did both teams *make effectively use of each other’s resources* (e.g., time to invest, people or staff, support etc.) in order to provide better patient care?”

The first four items of block 2.4 measured resource interdependence with a four-item scale from van de Ven and Ferry (1980), ranging from 1 to 5 (varying response formats). An example item was “For *your team* to accomplish its goals and responsibilities, how much do you need the services, resources, or support from this other team?” The remaining items measured intergroup competition and collaboration with five items each adapted from Alper et al. (1998), ranging from 1 (strongly disagree) to 5 (strongly agree). An example item was “Team members give high priority to the things their team wants to accomplish and low priority to the things members of the other team want to accomplish.”

***Section 3: Team and individual demographics and descriptive information.*** This section contained questions regarding both descriptive and demographic information concerning the team (block 3.1 – 3.10) and the individual participant (block 3.11 – 3.20).

Block 3.1 to 3.3 measured team age, whether the team was the principal team with which participants worked, and whether the team was temporary or permanent.

Block 3.4 measured functional diversity by the amount of different types of staff the team comprises.

Block 3.6 assessed how frequently the team met in a month.

Block 3.7 measured team membership change.

Block 3.8 assessed leadership clarity (West et al., 2003).

Block 3.10 asked whether participants considered themselves the principal leader of the team.

Block 3.11 to 3.17 asked for individuals' demographics such as gender, age, and team tenure.

#### **4.3.2 Interview**

The interview procedure as well as the used material have been outlined in chapter 2.

#### **4.3.3 External Ratings**

The rating sheets Time 1 to 3, which were sent to the teams' line managers, comprised five items measuring group performance (Vinokur-Kaplan, 1995) and six items measuring intergroup productivity (appendix 9).

#### **4.3.4 Questionnaire Time 2**

The second questionnaire was a reduced version of the first questionnaire (appendix 8). Scales used within this thesis were group satisfaction (Wageman et al., 2005), intergroup

competition and cooperation (Alper et al., 1998), intergroup effectiveness (chapter 6), group size and membership change.

## 4.5 ORGANIZATIONAL CONTEXT

*Primary Care Trusts (PCTs).* PCTs are health care organizations structured around groups founded throughout the UK to provide the first port of call for all non-emergency health care in the British National Health Service (NHS). PCTs have comparable organizational structures as they follow the same national strategic guidelines, goals, and policies. They provide a free service at the point of delivery for the entire population. These organisations embrace a number of different health care providers and service bodies that are formed into groups or teams (e.g., general practices, nursing teams). These groups offer a broad range of primary care services to local communities, which include general medical services, diagnosis and elementary treatments; preventative health measures such as immunisations; and running clinics such as diabetes, CHD, and antenatal. As such, PCTs are recognizable as traditional, co-located organizations, who provide primary care services to a regional community. These public sector organizations report to regional “strategic health authorities”, which in turn report to the governmental “department of health”.

PCTs were set up by the government in an attempt to restructure the British National Health Service (NHS), in order to provide better services that are focused around the patients, by frontline staff that primarily deals with the patients in the first instance (such as nurses and doctors). The restructuring process included the integration of health care providers under “umbrella” organizations (the PCT). I.e., groups (some of which formerly independent) were now members of the same organization, which requested them to collaborate with each other across



group boundaries. At the point where this study was conducted, these organizations were already operating for more than a year, and the teams were established.

**Organizational structure.** PCTs are, within the restrictions of being a public health care organization, autonomous team-based organizations. Organisations have their own budgets, are headed by a PCT management team which is accountable to a CEO. Most PCTs are divided into directorates, which embrace departments and wards. Teams of frontline staff are then embedded within these departments or wards. As teams provide services to the larger community, many of them are not located in the same building as the headquarters, but spread throughout the area they provide with health care service. Many of them are grouped in clinics.

## 4.6 SAMPLE

### 4.6.1 Teams

**TABLE 5**  
**Distribution of Employees and Teams Across the Five Participating Organisations**

|                                      | Organi-<br>sation 1 | Organi-<br>sation 2 | Organi-<br>sation 3 | Organi-<br>sation 4 | Organi-<br>sation 5 | Total |
|--------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|-------|
| Number of employees                  | 668                 | 675                 | 1966                | 574                 | 570                 | 4453  |
| Number of teams<br>participating     | 15                  | 6                   | 26                  | 9                   | 1 <sup>a)</sup>     | 57    |
| Number of employees<br>participating | 77                  | 32                  | 307                 | 51                  | 8                   | 276   |

Note. <sup>a)</sup> I was not allowed to contact the teams in this organisation by myself; instead, a contact person within the organisation sent batches of team contact forms to ward and departmental heads, in order to ask for volunteering teams.

Table 5 displays the relative amount of participating teams and individuals per organisation. Organizational size varied from 574 to 1966 employees. Inspection of Table 5 suggests that teams of organisations 2 and 5 might not reflect a representative sample of the respective organisations. This problem, however, may be less relevant because of two reasons. First, the team represents the primary level of analysis; and second, PCTs are very similar organisations, which are themselves embedded within the NHS as an umbrella organisation. Thus, a strong similarity among teams of different organisations can be expected. However, the distribution of teams across organisations suggests to control for organizational affiliation in statistical analyses.

*Team level response rate.* As the team is the primary level of analysis, four teams had to be deleted for further analysis because of incomplete data. Dawson's (2003) selection rate was used for this purpose. Selection rate (SR) is a formula that allows estimation of accuracy of aggregate measures based on incomplete group data. Dawson derived a formula that showed, for a given group size (N) and number of responses (n), how accurate the aggregated incomplete results from a group should be. The formula was  $SR = (N-n)/Nn$ , which is directly proportional to the accuracy of the incomplete data if normally distributed data are used. Dawson also used Monte Carlo simulations to show that this formula was applicable across different types of data, and to show how highly correlated these aggregated incomplete scores would be with true scores for different values of SR. In all analyses, I have used an SR of .32 as a cut-off point, as this is

the level that scores measured by incomplete data are generally correlated with true scores at .95 or higher.

*Team demographics.*

**TABLE 6**  
**Teams Comprising the Sample**

| Names of Participating Teams                                      |   |
|---|---|
| Smoking Advice Service  | Commissioning Team                          |
| Locality Team   | Occupational Therapy Team                   |
| Health Visitors Team (10 x)                                       | Acute Admission Team                        |
| District Nursing Team (15 x)                                      | Assessment and Treatment Team               |
| Community Nursing Team  | Nursing Team                                |
| School Nurses Team (2 x)  | Primary Care Team                           |
| Pharmacy Team   | Multidisciplinary Health Care Team (3 x)    |
| Community Nurses Team   | Primary Care Team                           |
| Smoking Cessation Team  | Physiotherapy and Occupational Therapy Team |
| Healthy Living Team   | Administration Team                         |
| Health Promotion Team   | Primary Mental Health Care Team             |
| Healthcare for Homeless, Asylum Seekers and Travelers Team (HHAT) | Children's Challenging Behaviour Team       |
| Learning & Development Team                                       | Hospital at Home Team                       |
| Physiotherapy Department  | Day Hospital Team                           |

Table 6 contains the (anonymised) names of the participating teams of the final sample.

As can be seen, the sample comprises both clinical and administrative teams.



**TABLE 7**  
**Team Demographics**

|   | N  | Range | Minimum | Maximum | Mean | s.d.  |
|---|----|-------|---------|---------|------|-------|
| Team size                               | 53 | 28.00 | 3.00    | 31.00   | 8.47 | 5.85  |
| Membership change (number)              | 53 | 4.88  | .00     | 4.88    | 1.23 | 1.09  |
| Different types of staff (number)       | 53 | 9.00  | 1.00    | 9.00    | 2.79 | 1.65  |
| Frequency of team meetings (per months) | 53 | 63.75 | .25     | 64.00   | 9.18 | 11.65 |

Table 7 contains a number of team demographics. As can be seen, team size varied considerably. As team size has been linked to team performance (Hackman, 2002), this suggests to use it as a control variable for statistical analyses. Similarly, while some teams had no member leaving the team during the past 5 months, the composition of other teams changed quite a lot, suggesting membership change as an additional control variable. Functional diversity was similarly spread throughout the team. While some teams consisted of staff from a single profession only (e.g., district nursing teams), others were multidisciplinary. A great variation was observed in the frequency with which teams meet. While some teams hardly meet once a month, others meet twice a day.

Further statistics revealed variations in team age. 1 team (1.9%) was 5 months old, 13 teams (24.5%) between 1 and 2 years old, and 39 teams (73.6%) 2 years or older. 1 team (1.9%) was temporary, while 52 teams (98.1%) were permanent.

**Real teams vs. other work forms.** As explicated in chapter 3, Hackman (2002) differentiates between real organisational teams and other work groups. Real teams work interdependently, have clear boundaries, are stable over time, and have authority to manage their own work processes.

**TABLE 8**  
**Characteristics of “Real Teams”**

|                             | N  | Range | Minimum | Maximum | Mean | s.d. |
|-----------------------------|----|-------|---------|---------|------|------|
| Interdependence             | 53 | 2.38  | 2.63    | 5.00    | 3.95 | .51  |
| Clarity of group boundaries | 53 | 1.75  | 3.25    | 5.00    | 4.48 | .46  |
| Stability                   | 53 | 2.67  | 2.33    | 5.00    | 3.63 | .69  |

Authority to manage work processes was measured with a categorical variable, and was agreed upon by 52 teams (98.1%). If a cut off point of 3 was chosen for the three continuous variables in Table 8, this sample comprises 38 real teams (71.7%).

**Level of self-management.** Level of self-management was assessed with four items from Wageman et al. (2005). Hackman (2002) distinguishes teams based on the authority they have. Self-managing teams have authority over monitoring and managing work process and progress (52 teams; 98.1%); self-designing teams have authority over designing the team and its organizational context (9 teams; 16.98%); and self-governing teams have authority over setting the overall direction (48 teams; 90.57%).

**Team leadership.** Leadership has been assessed both on the phone by first contacts with the team, and with a single item assessing leadership clarity (West et al., 2003). In 41 teams, a single, individual leader could be identified. Of the remaining 12 teams, 3 teams (25%) had a

single clear leader (outside the team), in 3 teams (25%) a number of people led the team, in 1 team (8.3%) no clear leadership was reported, in 2 teams (16.7%) all team members had leadership/coordinator roles, and in 3 cases (25%) a dominant category among team members could not be clearly identified.

#### 4.6.2 Participants

##### *Age, team and positional tenure.*

**TABLE 9**  
Participants' Age, Team and Positional Tenure

|                                | N   | Range | Minimum | Maximum | Mean  | s.d. |
|--------------------------------|-----|-------|---------|---------|-------|------|
| Participant's age              | 225 | 46.00 | 20.00   | 66.00   | 41.32 | 9.42 |
| Tenure position<br>(in months) | 230 | 29.90 | .10     | 30.00   | 6.13  | 7.03 |
| Tenure team<br>(in months)     | 233 | 29.92 | .08     | 30.00   | 3.90  | 4.98 |

Table 9 contains descriptive information about participants. Surprisingly, team tenure was quite low ( $M = 3.90$  months). This might be due to high fluctuations within the organisations, but also due to the fact that the organisations (and therefore many of the teams) were still relatively young. Additionally, the large range (29.90 months) suggests team tenure varied considerable across participants.

*Gender, employer, team membership, and occupation.* 206 individuals (88.4%) were female, and 27 (11.6% male). 228 participants (98.3%) were employed by the PCT, while 4



individuals (1.7%) were employed elsewhere. 116 participants (55%) worked in only 1 team, while 95 (45%) had multiple team membership. From a social identity perspective, this finding suggests to take into consideration multiple social identities that might be activated at a given time (Ashforth & Johnson, 2001). 20 individuals (8.6%) were administrative and clerical staff, 15 (6.4%) were community and psychiatric nurses, 40 (17.2%) were district nurses, 1 person (0.4%) was a general practitioner, 28 (12%) were health visitors, 1 person (0.4%) was a receptionist, and 128 individuals (54.9%) occupied various other health care and administrative professions. For 212 individuals (91.4%), the participating team was the principal team they worked with, while 20 individuals (8.6%) were primarily attached to another team.

## **PART B: PREDICTING INTERGROUP CONFLICT: A SOCIAL PSYCHOLOGICAL PERSPECTIVE**

### **Chapter 5: Boundary Spanners' Group and Organizational Identification, Intergroup Contact, and Intergroup Conflict**

#### **5.0 CHAPTER SUMMARY**

The aim of this chapter is to explain conflict between health care groups by adopting a social psychological perspective on how group boundary spanners manage relationships between groups. By using a sample of 53 work groups across five health care organizations, I examine the relationship between group boundary spanners' work group identification, organizational identification, and intergroup contact, in predicting intergroup conflict. In line with the common ingroup identity model (Gaertner et al., 1993), boundary spanners' organizational identification negatively predicted intergroup competition. Furthermore, the relationship between boundary spanners' group identification and intergroup conflict was moderated by boundary spanners' levels of organizational identification, thus supporting a dual identity model. Finally, if boundary spanners displayed frequent intergroup contact and identified highly with their organization, their group identification was strongest related to harmonious intergroup relations.

Whenever human groups form or reform, categorization into social groups plays a pivotal role in defining the nature of relationships within and between groups. The movement of organizations toward group-based structures therefore not only represents a major organizational, but also psychological change: The work group rather than the organization emerges as the primary focus of identification (Riketta & van Dick, in press), defined as the perception of oneness with or belongingness to a social group (Ashforth & Mael, 1989). Even though work group identification evolves as an important organizational construct with relevant correlates including work group satisfaction and extra-role behavior (Riketta & van Dick, in press), it has mainly been discussed as a trigger for intergroup rivalry and conflict; group members may attempt to enhance their group's image by fierce subgroup loyalty and intergroup discrimination, in order to reduce uncertainty or enhance their self-esteem (e.g., Ashforth & Mael, 1989; Hogg & Terry, 2000). This leaves organizations with the dilemma of how to foster employees' identification with their work group, without paying the price of ineffective, uncooperative, and conflictual relationships between groups.

Existing theory explaining the link between group identification and harmonious intergroup relations has been largely guided by social psychological theories of intergroup conflict, such as social identity theory (Tajfel, 1978; Tajfel & Turner, 1979) and intergroup contact theory (Allport, 1954). Contemporary versions incorporate aspects of both theories and suggest that intergroup contact in combination with a dual identity, i.e. individuals' identification with both the work group and the organization, is a means by which to achieve positive intergroup outcomes (e.g., Gaertner et al., 1999; Hewstone & Brown, 1986; Pettigrew, 1998). Yet research has hitherto failed to clearly support the dual identity effect with organizational groups (van Knippenberg, 2003). This failure has been partially attributed to nuisance factors specific to



organizational settings, such as unclear ingroup and outgroup boundaries (cf. Ashforth & Mael, 1989).

The nature of collaboration between organizational groups may just be another organization specific factor one needs to consider, if social psychological theories are to be applied to explain harmonious intergroup relations. Boundary spanning theory notes that the group's boundary spanners, rather than any individual within a group, facilitate intergroup transactions and manage intergroup conflicts (Adams, 1976; Callister & Wall, 2001; cf. Blake et al., 1964). Ancona (1990) concludes that the cognitive models and skills of the leader of a group influence the group's external strategies, which in turn influence how an environment is perceived and approached. In a similar vein, group leaders served as the primary conduits for both the coordination of work activities, and the negotiation of conflicts between groups in the organizations I studied. The study presented involved health care teams that were to cooperate and exchange resources across group boundaries in order to respond effectively to patients' needs. Boundary activities have been related to group effectiveness in previous research (e.g., Ancona, 1990; Choi, 2002; Druskat & Wheeler, 2003); yet research has to my knowledge not examined the relationship between boundary spanners' characteristics and strategies and the effectiveness with which dyads of groups jointly work together (e.g., Brett & Rognes, 1986; Mathieu, et al., 2001). I aim to address this gap within this chapter.

The purpose of this chapter is to explain harmonious intergroup relations in organizations by reference to boundary spanners' self-concept (i.e., group and organizational identification) and behaviour (i.e., intergroup contact). I extend existing research in the following ways. First, I develop and test a main effect model against a contingency framework built upon social psychological theories in order to explain the relationship between boundary spanners' group identification, intergroup contact, and harmonious intergroup relations. Second, I follow the call

to extend the power of social psychological theories in predicting alternative intergroup performance outcomes other than commonly used intergroup attitudes (van Knippenberg, 2003), by assessing both intergroup conflict and intergroup competition. Third, I aim to remedy a number of methodological weaknesses of prior field research, such as the explicit identification and definition of group boundaries. This study intends to contribute to the literature by developing and testing a social psychological framework in order to understand how boundary spanners may affect and shape relationships between groups.

## **5.1 THEORETICAL BACKGROUND**

### **5.1.1 Intergroup Conflict**

Theoretical work has applied social psychological theories to both harmonious and collaborative intergroup relations in organizations (e.g., Hogg & Terry, 2000), yet most empirical studies have focused on intergroup bias, a predominantly attitudinal measure comprising both ingroup favouritism and outgroup derogation (see Hewstone et al., 2002, for a discussion of conceptual issues). Such a focus on attitudes leaves unanswered the question of to what extent organizational groups develop conflictual or harmonious relationships. Intergroup bias predominantly refers to attitudes of ingroup members toward a particular outgroup (irrespective of the outgroup's attitudes toward the ingroup), and can develop without any interaction between groups, as demonstrated in numerous experimental studies (e.g., Tajfel et al., 1971). The focus on attitudes in prior research raises concerns about the degree to which these reflect harmonious and collaborative intergroup relationships between interacting organizational groups: Subject to factors like situational constraints, intergroup bias may or may not predict effective collaboration



between groups (cf. Ajzen & Fishbein, 1977). Regardless of negative attitudes toward each other, two groups working on a shared project may still contain the outbreak of conflict. I therefore propose alternative criteria other than intergroup bias as indicators of harmonious intergroup relations.

The detrimental dynamics of social categorization, such as fierce subgroup loyalty and intergroup competition (Hogg & Terry, 2000), as well as interdependence of groups in relation to the allocation of limited organizational resources suggest a high potential for intergroup conflict (Kramer, 1991). Therefore the absence of conflict and competition between groups appears to be an important aspect of harmonious intergroup relations. Despite its usefulness for understanding organizational conflict, the competitive goal concept is limited in explaining dynamics of conflict that occur under cooperative interdependence (Deutsch, 1949), and falls short in explaining affective components as described during intergroup conflict episodes Blake et al. (1964), such as hostilities and tensions. These conflict facets are captured by the concept of relationship conflict, which mainly includes affective components, such as dislike and feelings of annoyance and irritation (Jehn, 1995)<sup>1</sup>. In order to capture both the perceptions of conflict over goals and to capture affective aspects of conflict, I distinguish relationship conflict (conflict over means) from competition (conflict over ends).

### **5.1.2 Group Identification and Intergroup Conflict**

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<sup>1</sup> While the intragroup conflict literature makes a distinction between task and relationship conflict, the intergroup conflict literature suggests conceiving intergroup conflict in terms of relationship conflict and competition (e.g., Blake et al., 1964; Lawrence & Lorsch, 1967). Additionally, task conflict is rooted in substantial disagreements on task related issues, and would therefore not be predicted by SIT/SCT.



Following social identity theory's cognitive definition of a social group (Turner, 1985; Turner et al., 1987), intergroup relations theorists have defined an organizational group as a set of individuals who perceive themselves and whom nonmembers perceive as constituting an identifiable social aggregate within an organization (Brett & Rognes, 1986; cf. chapter 4). The predominant theoretical framework linking group identification and intergroup relations is social identity theory (Tajfel, 1978; Tajfel & Turner, 1979; see for application to organizations e.g., Ashforth & Mael, 1989; Haslam, 2004), and its cognitive derivative self-categorization theory (SCT; Turner, 1985; Turner et al., 1987). Both theories are detailed in chapter 4, and will therefore only briefly outlined here inasmuch as they relate to the research questions of interest. Social identity theory views identification as a perceptual cognitive construct - the perception of one-ness with, or belongingness to, a social group (Ashforth & Mael, 1989). The theory proposes that an individual's self-concept contains both a personal identity embracing idiosyncratic characteristics (e.g., psychological traits) and a social identity comprising salient group affiliations. Individuals derive their positively valued social identities from group membership. SCT provides insights into the cognitive mechanisms underlying these dynamics: Individuals that identify with a social group adopt its norms and values, and act according to the group's prototypes (Turner, 1985, Turner et al., 1987; cf. Hogg & Terry, 2000). Such prototypes are created through self-categorization and reduce uncertainty by directing behavior, values, and attitudes (Hogg & Abrams, 1993). Analogously, group members develop cognitive prototypes of outgroups, and direct prototypical behavior towards outgroup members (Turner et al., 1987).

Rather than passively receiving social identities, individuals actively aim to maintain and enhance their representation of their group's image by means of social comparison processes with relevant outgroups (Festinger, 1954), resulting in differentiation between groups. Brewer and Gaertner (2001) summarize motivational factors described as the basis of this process, including

the enhancement and maintenance of group members' self-esteem and positive distinctiveness (Tajfel, 1978; Turner, 1975), uncertainty reduction (Hogg & Abrams, 1993), and the needs for belonging and differentiation (Brewer, 1991). By aiming to create a positive differentiation from outgroups, group members set the stage for conflicting and distorted relationships with them.

Brewer and Gaertner (2001) summarise three principals of the social identity perspective that may be reverted to, in order to explicate the link between boundary spanners' group identification and intergroup conflict:

1.) the *intergroup accentuation principle*: assimilation within category boundaries but contrast between categories such that all members of the ingroup are perceived to be more similar to the self than members of the outgroup.

2.) the *ingroup favouritism principle*: positive affect selectively generalises to fellow ingroup members, but not to outgroup members.

3.) the *social competition principle*: Intergroup social comparison associated with *perceived negative interdependence* between ingroup and outgroup.

As the authors outline, the affective and behavioural consequences of this intergroup schema lead to intergroup situations characterised by preferential treatment of ingroup members, mutual distrust between ingroup and outgroup, and intergroup competition.

Both experimental and field studies did not find a straightforward positive correlation between work group identification and intergroup bias (Hinkle & Brown, 1990). Some studies have found a positive relationship (e.g., Lipponen, Helkama, & Juslim, 2003), while others found non-significant or even negative relationships (e.g., Oaker & Brown, 1986). These differences have been explained as due to both methodological and theoretical factors. For example, many studies are difficult to interpret because they did not assess whether organizations were ideographic or holographic (Albert & Whetten, 1985). Whilst in the former type organizations



exhibit subgroups with differentiated identities, in the latter organizations rather exhibit a common identity across subgroup boundaries. According to SIT, intergroup differentiation would be low or absent in holographic organizations, because individuals' self-esteem would not be maintained or enhanced (or their uncertainty reduced) by discriminatory comparisons with other work groups belonging to the same dominant reference group, in this case the organization. Further methodological limitations include both unclear ingroup and outgroup boundaries and ambiguity about ingroup and outgroup membership (e.g., Brown et al., 1986; Oaker & Brown, 1986). In line with the group identification hypothesis of social identity theory (Brown et al., 1986), I propose a positive relationship between boundary spanners' group identification and intergroup conflict.

*Hypothesis 1: Boundary spanners' group identification will be positively related to intergroup conflict.*

### **5.1.3 Intergroup Contact and Intergroup Conflict**

Central to research concerned with the so-called "Contact Hypothesis" (Allport, 1954; Pettigrew, 1998) is the idea that contact between members of different groups is a means by which to overcome intergroup hostilities (see chapter 3 for a more thorough outline of the theory). Although researchers have often claimed that the potential of intergroup contact to reduce intergroup bias would depend on whether the contact situation is characterized by a number of essential conditions, such as equal status between groups, research has shown that mere contact suffices to reduce intergroup bias. In a meta-analysis embracing over 700 samples across contact settings, 94% of the samples showed positive effects of intergroup contact on



intergroup attitudes, with 81% of these samples having contact situations without the presence of the suggested essential conditions (Pettigrew & Tropp, in press). The evolving 'mere exposure' perspective on intergroup contact suggests that contact reduces prejudice because of the tendency for familiarity to breed liking. This is suggested by a number of studies that revealed such exposure effects across diverse targets and research settings (e.g., Bornstein, 1989). Pettigrew and Tropp (in press) describe those mediating mechanisms by which contact reduces prejudice, and which have received some empirical support, namely the reduction of uncertainty, feelings of threat, and intergroup anxiety. Others have pointed to additional mechanisms to explain how intergroup contact may reduce intergroup hostility, including suggestions that intergroup contact provides information that disconfirms stereotypes; leads people to perceive more similarities between themselves and the outgroup; serves as a conduit for information contradicting group biases, group polarization and intergroup conflict; and provides channels for dispute resolution when conflicts arise (e.g., Labianca et al., 1998; Stangor, 2004). I therefore propose that group boundary spanners' amount of intergroup contact will negatively predict intergroup conflict.

*Hypothesis 2: Boundary spanners' amount of intergroup contact will negatively predict intergroup conflict.*

#### **5.1.4 Organizational Identification and Intergroup Conflict**

Identification with the organization has most commonly been investigated in relation to individual level outcome variables, including organizational commitment, job satisfaction, intention to quit, and organizational tenure (cf. Fontenot & Scott, 2002; Riketta, 2005). According to social identity theory, identification with the organization should lead to more

effective intergroup relations. As individuals share an identity across work groups, intergroup comparisons will be unrelated to individuals' self esteem derived from identification with the organization. Additionally, by assuming a strong organizational identification, the organization as reference group becomes more salient, and intergroup differences are cognitively minimized, making lower order identifications less likely (Ashforth & Mael, 1989). Similarly, the common ingroup identity model (Gaertner, et al., 1993), outlined more thoroughly in chapter 3, suggests that *recategorization* of subgroups into higher order groups reduces dysfunctional intergroup relations by minimizing attention to category differences, while directing attention to the superordinate, inclusive group identity. According to the theory, the change of group members' perceptions of group boundaries toward an overall inclusive category should launch cognitive and motivational processes yielding favourable intergroup attitudes and behaviour. Applied to the organizational context, it could be deferred that the extent to which individuals identify with the organisation as a whole should be related to reduced levels of intergroup conflict.

Empirical results on the relationship between organizational identification and harmonious and collaborative intergroup relations are ambiguous. Hennessey and West (1999), e.g., did only find that organizational identification was negatively related to discrimination of the outgroup in favour of the ingroup for those participants experiencing at least some intergroup competition. Lipponen et al. (2005) similarly did not find a straightforward relationship between employees' organizational identification and ingroup bias in the Finnish shipyard industry. As outlined in chapter 3, empirical evidence for the common ingroup identity model has been provided by both experimental and field studies (e.g., Gaertner et al., 1989, 1990, 1996), where perceptions of an overly inclusive category were related to reduced intergroup bias. Derived from the theoretical model, I expect that boundary spanners' organizational identification will be related with reduced levels of intergroup conflict.



*Hypothesis 3: Boundary spanners' organizational identification will be negatively related to intergroup conflict.*

## **5.2 TOWARD A CONTINGENCY PERSPECTIVE: THE PIVOTAL ROLE OF ORGANISATIONAL IDENTIFICATION AND INTERGROUP CONTACT FOR MANAGING GROUP IDENTIFICATION**

In the light of the mixed results linking group identification to intergroup bias, some have disputed whether, and if so under which conditions, social identity theory predicts a straightforward correlation between group identification and intergroup bias (e.g., Turner, 1999), or discussed differential dynamics for high and low identifiers (Ellemers et al., 2002). In line with other researchers, I suggest that inconsistencies in research findings testing social identity theory in organizations reflect the failure to distinguish and measure neglected contingencies (e.g., Ashforth & Mael, 1989; Hogg & Terry, 2000; cf. Gaertner et al., 1999). Thus, in addition to proposing a direct relationship between boundary spanners' work group identification and harmonious intergroup relations, I suggest the relationship is contingent upon attitudinal and behavioural moderators, such as organizational identification and intergroup contact.

### **5.2.1 Group and Organizational Identification and Intergroup Conflict**

When different work groups aim to cooperate in pursuit of superordinate organizational goals, identification processes may paradoxically represent a trigger for both intergroup hostilities *and* harmonious and collaborative intergroup relations, depending on the interplay of



work group and organizational identification (Ashforth & Mael, 1989; Hogg & Terry, 2000). If boundary spanners identify strongly with their work group, but do not identify with the organization as a whole, intergroup differentiation is a likely means by which to enhance the own group's image. Outgroup bonds are weak, fostering hostile attitudes, stereotypes, rivalry, and competition between groups.

Conversely, if individuals identify strongly with the organization but weakly with their work group, theory suggests contradictory predictions about the likely effects on intergroup relations: the common ingroup identity model (CIIM, Gaertner, et al., 1993) proposes that recategorization of subgroups into higher order groups, i.e. transforming group members' perceptions from "us" and "them" to a more inclusive "we", reduces dysfunctional intergroup relations by minimizing attention to category differences but directing attention to the superordinate, inclusive group identity (Brewer & Brown, 1998). Contrary to this position, optimal distinctiveness theory (Brewer, 1991) suggests that high levels of organizational identification combined with low levels of group identification may result in distorted intergroup relations: The theory holds that individuals seek to balance desires for inclusiveness (satisfied by group membership) and distinctiveness (satisfied by individuality). Subgroups allow for fulfilling these desires more than the organization as a whole, in which employees may feel overincluded (Hogg & Terry, 2000). Therefore individuals may strive for distinctiveness by identifying with subunits or departments (Riketta & van Dick, in press). Thus, subgroups may resist attempts to dissolve group boundaries as this would pose a threat to their distinctiveness (Brewer, 1991). If boundary spanners identify strongly with their organization, but not with their more proximal work group, tensions may result enhancing the need for differentiation. In order to achieve differentiation, boundary spanners may develop conflicting and distorted relationships with

members of other groups. In support of the theory, individuals in large, overly inclusive groups were found to be motivated to achieve greater distinctiveness (Hornsey & Hogg, 1999, 2000).

Researchers have therefore argued that the key to establishing and maintaining cooperative intergroup relations may not be increasing the salience of the superordinate group (here the organization) at the expense of subgroup identity, but rather acknowledging and allowing expression of a *dual identity* in the form of both superordinate (organizational) and subgroup identity (Ashforth & Mael, 1989; Gaertner et al., 1999; Hogg & Terry, 2000).

Experimental research strongly supports the idea that inter-subgroup relations are more harmonious when subgroups are salient *within* the context of a salient superordinate group, than when either the subgroup or the superordinate group alone is salient (González & Brown, 2003; Hornsey & Hogg, 1999, 2000). Similarly, Gaertner and colleagues found in an experimental study that the primary set of mediators between conditions of intergroup contact and bias reduction involved participants' representations of membership as two subgroups within a superordinate category (Gaertner et al., 1999). In field settings, perceptions of a dual identity were negatively related to intergroup bias in a multi-ethnic high school among students, but positively related to one of two measures of intergroup bias in a survey study of bank executives who had experienced a merger (see Gaertner et al., 1996, for an overview). Gaertner and colleagues (1996) question the generalizability of the surprising findings from the latter study as due to two possible explanations, the first being that the amended wording of the item measuring dual identification might have resulted in a different meaning than in the high school study, and the second being that strong contextual differences exist between both field settings. Despite convincing experimental evidence, research has yet failed to properly examine the balance between group and organizational identity with organizational groups sharing a past and a future (Van Knippenberg, 2003).



*Hypothesis 4: Boundary spanners' group identification will have a stronger, negative relationship with intergroup conflict when organizational identification is high than when it is low.*

### **5.2.2 Group Identification, Intergroup Contact and Intergroup Conflict**

I further argue that boundary spanners' contact with members of other groups *buffers* the relationship between group identification and harmonious intergroup relations. Cognitive dissonance theory (Festinger, 1957) states that inconsistent cognitions create an unpleasant tension which individuals aim to reduce by striving for consistency, e.g. by means of cognitive restructuring or rationalizing. As frequent contact breeds liking, application of these principles suggests that the outgroup represents a less suitable target for boundary spanners' group identification to trigger intergroup discrimination and competition, as liking is in conflict with competition and discrimination. Similarly, it is harder to discriminate against and compete with outgroup members based on stereotypes and outgroup prototypes, if stereotypes have been counteracted through contact and familiarity, similarities discovered, and understanding of the other group's agendas and working styles have been deepened. Moreover, because conflicts tend to extend and generalize from one issue to others (De Dreu et al., 1999), it is not conducive to compete and discriminate against an outgroup with which there is frequent work related contact on a number of other issues that require cooperation. Conversely, if contact is infrequent, stereotyping and negative intergroup attitudes may breed and make the outgroup a more suitable target for intergroup bias. Given the lack of awareness of other group's agendas and working style, paucity of contact breeds misunderstandings and coordination loss, which may accentuate



the negative effects of group identification.

Some support for this position stems from two experimental studies conducted by Brown et al. (1999), where cooperative intergroup contact facilitated the generalisation of positive attitudes toward the outgroup when subgroup category identities remained salient, as achieved by enhancing the group prototypicality of individual outgroup members. I therefore propose the following hypothesis.

*Hypothesis 5: Boundary spanners' group identification will have a stronger, negative relationship with intergroup conflict when intergroup contact is frequent than when it is infrequent.*

### **5.2.3 Group Identification, Organizational Identification, Intergroup Contact and Intergroup Conflict**

I further propose that the effect of boundary spanners' organizational identification and intergroup contact on the relationship between group identification and intergroup conflict will be multiplicative. Pettigrew's (1998) process model of intergroup contact theory suggests that repeated intergroup contact over time is necessary to create positive intergroup outcomes by initiating a cognitive reevaluation of the intergroup relationship. Extended contact allows people to start thinking of themselves in a larger group perspective, laying the basis for a dual identity to result in positive intergroup outcomes.

In particular, I argue that, relative to conditions in which boundary spanners both identify highly with the organization and have frequent contact with outgroup members, low organizational identification in combination with frequent contact will result in more conflict, as

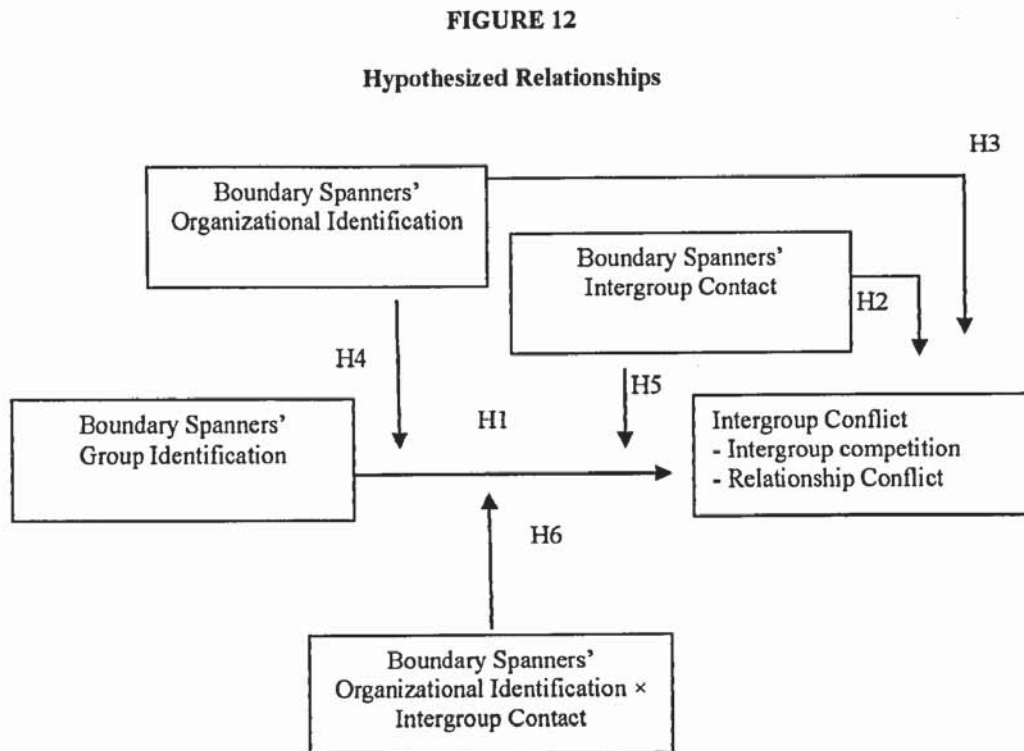
the social psychological processes will be mutually offsetting. When organizational identification is low, group identification should foster intergroup differentiation; however, frequent contact should disconfirm stereotypes and enhance mutual understanding; these processes are likely to interact such as to neutralize each other. Additionally, relative to conditions of high organizational identification and frequent contact, I expect that low organizational identification in combination with infrequent contact will result in more conflict. Under these conditions, teams are working in relative isolation from each other, and integration into the overall organization is suboptimal (cf. Lawrence & Lorsch, 1967), resulting in reduced effectiveness. Finally, in comparison to conditions in which there is both high organizational identification and frequent contact, I expect more intergroup conflict, if organizational identification is high, but contact infrequent; I argue frequent contact between boundary spanners is necessary for the potential of a dual identity to actually result in harmonious intergroup relations, because it provides knowledge about the outgroup's working styles and agenda, thereby facilitating effective coordination between groups. In summary, I expect that boundary spanners' group identification should be most strongly related to harmonious intergroup relations, when both organizational identification is high and intergroup contact frequent.

Related support for this proposal stems from experimental research. Gaertner and colleagues found that a reduction of intergroup bias was accomplished by encouraging individuals' perceptions of a superordinate or dual identity during intergroup cooperation (Gaertner et al., 1999). Similarly, González and Brown (2003) found that students under dual identity conditions displayed less ingroup bias after cooperative interaction than students in two group, one group, or separate individuals conditions.

*Hypothesis 6: Boundary spanners' group identification will have the strongest, negative relationship with intergroup conflict if organizational identification is high and intergroup*

*contact frequent.*

Figure 12 summarizes the proposed relationships.



## 5.3 METHOD

### 5.3.1 Organizational Context, Procedure and Sample

See chapter 4 for a full account of the research methodology.

**Organizational context.** In sum, five Primary Care Trusts (PCTs) across the UK agreed to participate in a survey study about intergroup relations. PCTs embrace a number of different health care providers and service bodies that are formed into groups or teams (e.g., general



practices, nursing teams). These groups offer a broad range of primary care services to local communities, which include general medical services, diagnosis and elementary treatments; preventative health measures such as immunisations; and running clinics such as diabetes, CHD, and antenatal. As services are tailored around patients' needs, different work groups are often required to cooperate with each other. This includes covering for staff shortages, provision of patient services out of normal working hours, or provision of complementary patient treatment from groups with different professional orientations.

*Procedure.* A liaison person within each organization was consulted to identify the “principal groups” to which staff were primarily attached and in which they spent the most time working. Management groups were not included since I wished to avoid power and status asymmetries between groups at different hierarchical levels. I approached these groups and inquired whether they were established (i.e., existed for more than 5 months), whether members worked together interdependently, the groups had three or more members, and groups worked interdependently together with at least one other group (Alderfer, 1987; Brett & Rognes, 1986). I invited suitable workgroups to participate, and explained that both the anonymity of participants and the confidential treatment of the data were guaranteed. Fifty-seven groups (46 %) agreed to participate. Each group that agreed consented by mailing the names of all group members as well as the group's name to the researcher. Additionally, groups were asked to agree upon the one other group within the organization (apart from management) they worked most closely with, in order to ensure both interaction frequency and high interdependence between lateral groups. Questions on intergroup relations within the questionnaire were then formulated with reference to this particular outgroup, the name of which was inserted into the questions in order to avoid any ambiguity. An introductory letter to all group members accompanying the questionnaire made ingroup membership salient and explicit. The letter stated that “*you may be a member of more*

than one group; however, for this questionnaire I would like to ask you to refer only to the (ingroup's name inserted) group when answering questions that refer to 'your group' or 'the group you are working on'". The questionnaire was mailed out to the 57 groups.

**Sample.** Dawson's (2003) selection rate was used to exclude groups with low group level response rates from further analysis. Selection rate is a formula that assesses the accurateness of incomplete group level data in predicting true scores as a function of group response rate and group size. The cut-off point chosen was a selection rate of .32, which indicates that scores measured by incomplete data within a sample are generally correlated with true scores at .95 or higher. Four groups did not meet this cut-off point and were deleted for further analysis. The resulting sample of 53 groups (274 respondents) varied across service and administration groups. Clarity of group boundaries and group interdependence was measured with 2-item scales from Wageman, et al. (2005), ranging from 1 (very inaccurate) to 5 (very accurate). Groups had clear boundaries (for example, "Team membership is quite clear - everybody knows exactly who is and isn't in the team";  $M = 4.48$ ;  $Sd = 0.46$ ) and worked interdependently (for example, "Generating the outcome or product of this team requires a great deal of communication and coordination among members";  $M = 3.95$ ;  $Sd = 0.51$ ). Also, groups were interdependent in resource allocation with the other group chosen, as measured with a 4-item scale from Van de Ven and Ferry (1980;  $M = 3.19$ ;  $Sd = 0.65$ ), comprising two items measuring unit interdependence ranging from 1 (not at all) to 5 (very much; i.e., "For *your team* to accomplish its goals and responsibilities, how much do you need the services, resources, or support from this other team?" and "For *this other team* to accomplish its goals and responsibilities, how much does it need the services, resources, or support from your team?"), and two items measuring unit importance, ranging from 1 (not very important) to 5 (absolutely crucial; i.e., "How important is *this other team* in attaining the



goals of your team?” and “How important is *your team* in attaining the goals of this other team?”). All groups were older than five months. Group size ranged from three to 31.

### 5.3.2 Questionnaire Measures

*Control variables.* I controlled for group size, group membership change, and clarity of group boundaries, as these variables were discussed to affect the dynamics of SIT/SCT (Ashforth & Mael, 1989; Brewer, 1991; Brown et al., 1986; Haslam, 2004). Group size was assessed by the number of names returned on the consent form. A single item, asking “How many people have left your team during the past 5 months?”, measured group membership change. The measure of clarity of group boundaries (Wageman et al., 2005) was introduced in the previous section. Group tenure was controlled for as both group and intergroup processes develop over time (Alderfer, 1987). A questionnaire item asked how long the team had been set up (response choices were less than 6 months, less than 1 year, between 1 and 2 years, and 2 years or more). Since task interdependence has been linked to performance (Wageman, 1995), I controlled for this using the Wageman et al. (2005) measure introduced in the previous section. Finally, I controlled for variations in organizational affiliation (*N*-1 dummy coded).

*Intergroup conflict.* I demarcated intergroup conflict as conceptually different from intergroup bias inasmuch as conflict is likely to involve interaction between groups (Labianca et al., 1998), and is a consensual group rather than individual level construct. I measured both competition and relationship conflict between groups. The first measure assessed perceptions of conflicting goals with four items adapted from Alper et al. (1998), for example, “The goals of both teams are not reconcilable with each other.” Answers were given on 5-point scales ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach’s alpha was .81.



As this measure does not explicitly assess affective aspects germane to intergroup conflict, I also measured relationship conflict between groups with a 6-item measure adapted from Jehn's (1995) intragroup conflict scale (Janssen et al., 1999), ranging from 1 (strongly disagree) to 5 (strongly agree). Relationship conflict mainly includes affective components, such as dislike and feelings of annoyance and irritation (Jehn, 1995). Items referred to group members' relationships with outgroup members. A sample item is "The tension between members of our and the other group was sometimes painful." Cronbach's alpha was .90.

***Intergroup contact, group and organizational identification.*** Research suggests significant cooperation across groups is not carried out by every group member, but by "boundary spanners" acting on behalf of their group (Brett & Rognes, 1986; van de Ven and Ferry, 1980; cf. Blake et al., 1964; Ancona, 1990). Interview data from the current research indicated that the group leaders represented the core link between work groups for both the negotiation of critical conflict incidents, and the management of important issues that affected the way both teams worked together, such as coordination and distribution of work. I therefore sought responses from the groups' leaders in relation to questions on intergroup contact, group and organizational identification. Twelve groups did not have a group leader, so I chose the individual from each of these groups with the most work-related contact with the outgroup as the key boundary spanner. This was determined from responses to a question about the amount of work related contact, adapted from van de Ven and Ferry (1980): '*How frequently do you interact on work related matters with members of (outgroup's name inserted)?*', ranging from 1 (not at all) to 7 (daily). *T*-tests on all study variables were conducted to examine whether formal leaders differed from the boundary spanners chosen from leaderless groups. No significant differences were found.

I measured intergroup contact with the aforementioned measure adapted from van de Ven and Ferry (1980). Group and organizational identification were measured using Doosje and colleagues' 4-item Likert scale (Doosje et al., 1995), a measure suitable to assess both group and organizational identification (and identification salience) in organizational settings (Haslam, 2004). A sample item is "I see myself as a member of (group X / organization X)". Answers were given on 5-point scales ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alpha was .90 for both scales.

#### **5.4 RESULTS**

TABLE 10

Descriptive Statistics and Correlations<sup>a</sup>

|   | Mean | s.d. | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10  | 11 | 12 | 13 | 14 |
|---|------|------|------|------|------|------|------|------|------|------|------|-----|----|----|----|----|
| 1. Organization 1 <sup>b</sup>              | .28  | .45  |      |      |      |      |      |      |      |      |      |     |    |    |    |    |
| 2. Organization 2 <sup>b</sup>              | .02  | .14  | -.09 |      |      |      |      |      |      |      |      |     |    |    |    |    |
| 3. Organization 3 <sup>b</sup>              | .17  | .38  | -.28 | -.06 |      |      |      |      |      |      |      |     |    |    |    |    |
| 4. Organization 4 <sup>b</sup>              | .42  | .50  | -.53 | -.12 | -.38 |      |      |      |      |      |      |     |    |    |    |    |
| 5. Organization 5 <sup>b</sup>              | .11  | .32  | -.22 | -.05 | -.16 | -.30 |      |      |      |      |      |     |    |    |    |    |
| 6. Group membership change                  | 1.23 | 1.09 | -.33 | .05  | -.19 | .55  | -.19 |      |      |      |      |     |    |    |    |    |
| 7. Group age                                | 3.61 | .59  | -.38 | .09  | .13  | .24  | -.03 | .20  |      |      |      |     |    |    |    |    |
| 8. Group size                               | 8.47 | 5.85 | -.36 | -.01 | -.22 | .63  | -.19 | .44  | .11  |      |      |     |    |    |    |    |
| 9. Group interdependence                    | 4.15 | .57  | -.09 | .01  | .05  | .16  | -.18 | .41  | .08  | .12  |      |     |    |    |    |    |
| 10. Clarity of group boundaries             | 4.48 | .46  | .04  | -.02 | .20  | -.23 | .09  | -.25 | .05  | -.26 | .00  |     |    |    |    |    |
| 11. Boundary spanners' group identification | 4.48 | .67  | .10  | -.05 | .02  | -.16 | .10  | -.36 | -.11 | -.22 | -.17 | .49 |    |    |    |    |



|  |      |      |      |      |      |      |      |      |      |      |     |      |      |
|--|------|------|------|------|------|------|------|------|------|------|-----|------|------|
| 12. Boundary spanners' organizational identification | 3.78 | .73  | .15  | -.15 | .10  | -.28 | .17  | -.16 | -.21 | -.04 | .09 | .15  | .24  |
| 13. Boundary spanners' intergroup contact            | 5.60 | 1.19 | .17  | -.30 | -.15 | .12  | -.13 | .04  | -.01 | .12  | .18 | .19  | .02  |
| 14. Intergroup competition                           | 2.33 | .50  | -.59 | .05  | .20  | .32  | .09  | .26  | .14  | .36  | .03 | -.17 | -.25 |
| 15. Relationship conflict                            | 2.02 | .65  | -.37 | -.05 | .00  | .33  | .03  | .48  | -.04 | .26  | .29 | -.23 | -.18 |
|  |      |      |      |      |      |      |      |      |      |      |     | .01  | .64  |

Note. <sup>a</sup>  $n=53$ . All correlations above |.27| are significant at the .05 level. <sup>b</sup> Dummy variable.

Scale characteristics and intercorrelations of variables are shown in Table 10. As all scales used in this analysis were self-report data, this bears the danger that an overall common method variance factor might have accounted for some of the intercorrelations. Thus, to test for the discriminant validity of all scales, a confirmatory analysis was conducted, where the 10 scales (i.e. all scales in Table 10 except organizational affiliation) were entered into a confirmatory factor analysis. Table 11 (below) summarizes fit indices for four models: The first model represents the null model, presuming all scales are unrelated. The second model tests the fit for all scales when loading on 1 single factor, such as a common method factor, suggesting participants did not differentiate among scales (cf. Podsakoff et al., 2003). The third model includes all scales as separate factors, but does not allow them to correlate. The fourth model includes all scales as separate factors, but allows them to correlate.

Table 11 contains fit indices for the four models. Low  $\chi^2$  values as well as high CFI and TLI values indicate good model fit. In particular, for the TLI and CFI index, recommended levels of fit are above .90. Recommended values for the ratio of  $\chi^2$  indices to degrees of freedom ( $\chi^2/df$ ) range between 2 and 5 (cf. Arbuckle, 1997; Marsh, Balla, & Hau, 1996).  $\chi^2$  values are more depending on sample size than others, e.g. the TLI values (Gerbing & Anderson, 1993). Nevertheless, artificially reduced  $\chi^2$  values are rather a problem for big sample sizes than for small ones like this. Model statistics show a good model fit for the correlated 10-factor model (fourth model), a reasonable fit for the uncorrelated 10-factor model (third model), and a poor fit for the one-factor model and the null model. Also, statistics that compared models against each other (underneath the table) suggest the fourth model has superior fit to all others. Only the correlated 10-factor model reaches the recommended values for the ratio of  $\chi^2$  values to degrees of freedom ( $\chi^2/df$ ) below 5, and TLI and CFI values above .90. I then tested the improvement of model fit by calculating the differences of  $\chi^2$  values in relation to the differences in degrees of

freedom ( $\Delta\chi^2/\Delta df$ ) for each model. The test indicates a significant model improvement for the correlated 10-factor model over the uncorrelated 10-factor model ( $\Delta\chi^2(\Delta df) = 338.96(44)$ ;  $p < .001$ ; Table 11), suggesting that the correlated 10-factor model fits the data best.

**TABLE 11**  
**Fit Indices of Confirmatory Factor Analysis for All Study Scales**

|   | $\chi^2$ | $df$ | $\chi^2/df$ | CFI | TLI |
|---|----------|------|-------------|-----|-----|
| Null model                                  | 3294.29  | 351  | 9.39        | .00 | .00 |
| One-Factor model <sup>a</sup>               | 1640.99  | 294  | 5.58        | .54 | .45 |
| 10-Factor model (uncorrelated) <sup>b</sup> | 737.09   | 297  | 2.48        | .85 | .82 |
| 10-Factor model (correlated) <sup>c</sup>   | 398.13   | 253  | 1.57        | .95 | .93 |

*Note.*  $N = 242$ ; CFI = Comparative Fit Index; TLI = Tucker Lewis Index

<sup>a</sup>Difference null-model and one-factor model:  $\Delta\chi^2(df) = 1653.30(57)$ ;  $p < .001$

<sup>b</sup>Difference one-factor model and 10-factor model (uncorrelated):  $\Delta\chi^2(df) = 903.90(3)$ ;  $p < .001$

<sup>c</sup>Difference 10-factor model (uncorrelated) and 10-factor model (correlated):  $\Delta\chi^2(df) = 338.96(44)$ ;  $p < .001$

Very high correlations among conflict subscales are common (Simons & Peterson, 2000), but raise concerns as to whether subscales are independent. I found the correlation between relationship conflict and intergroup competition ( $r = .64$ ,  $p < .001$ ; Table 10) somewhat inflated due to common source variance: I removed common source variance by computing split-sample correlations of both scales by randomly splitting individuals of each group in alternating order into subgroups (a) and (b) (Amason, 1996). I then took relationship conflict from subgroup (a), and competition from subgroup (b), and aggregated the scales by subgroup. The correlation of competition and relationship conflict was then considerably reduced ( $r = .26$ ,  $p < .10$ ), suggesting that the two conflict scales are related but distinct constructs.



Some studies attributed their failure to support social psychological theories in organizations to the accidental measurement of organizational identification when the intent was to measure subgroup identification (e.g., Oaker & Brown, 1986). Confirmatory factor analysis of the organizational identification and work group identification scales was used to determine whether participants in this study appeared to discriminate between identification with their work group and the organization. A 2-factor model with group and organizational identification as separate but correlated factors ( $\chi^2 = 33.36$ ,  $df = 19$ ;  $TLI = .93$ ;  $CFI = .95$ ) fitted the data significantly better than did a 1-factor model with group and organizational identification collapsed ( $\chi^2 = 226.69$ ;  $df = 18$ ;  $TLI = .77$ ;  $CFI = .85$ ;  $\Delta\chi^2(\Delta df) = 193.33(1)$ ;  $p < .001$ ).

In each organization, individuals identified stronger with their more proximal work group than the organisation as whole (for all groups:  $M_{\text{group identification}} = 4.16$ ;  $M_{\text{organizational identification}} = 3.60$ ;  $t = 8.15$ ;  $p < .001$ )cf. Riketta & van Dick, in press), being suggestive that organisations are ideographic rather than holographic.

#### 5.4.1 Treatment of the Data

Aggregation of data at the group level requires both a theoretical basis and empirical justification (Kozlowski & Klein, 2000). Even though intergroup conflict may be the result of interaction between group representatives, these individuals represent their group's interests, and not their own, on interface issues that exist at the group rather than the individual level (Brett & Rognes, 1986). Therefore both intergroup conflict scales were aggregated by groups. To empirically justify aggregation, I calculated interrater reliability coefficients to demonstrate consensual validity (Rwg(j), James et al., 1984), and  $F$ -statistics and eta-squared coefficients

(ICC1) to demonstrate discriminant validity (cf. Bliese, 2000). Both conflict scales have good consensual and discriminant validity (for relationship conflict,  $Rwg(j) = .94$ ; eta-squared = .50;  $F = 5.00, p < .001$ ; for goal conflict,  $Rwg(j) = .82$ ; eta-squared = .20;  $F = 2.10, p < .001$ ). Group and organizational identification, as well as intergroup contact, are individual level constructs and were therefore not aggregated.

#### 5.4.2 Hypotheses Testing

I tested Hypotheses 1 to 6 by conducting block entry multiple regression analyses on the three dependent variables (Table 12). I entered the control variables into the first block of the regression. The next block contained the predictor variables (model 1, Table 12). Predictor variables were centered in order to reduce multicollinearity (cf. Aiken & West, 1991). VIF scores varied from 1.12 to 5.15 across regressions, suggesting multicollinearity did not distort regression results. The third block contained the interaction term of both predictor variables (model 2a, b, Table 12), and only the two predictors that compose the interaction term were entered in the prior step. I examined three-way interactions to test Hypothesis 6 (model 3, Table 12). The procedure deviated here inasmuch as I included in the third block all three 2-way interactions by combining each of the three predictor variables with each other, and added a fourth step in which only the interaction term computed from all three predictor variables was inserted (Aiken & West, 1991).

TABLE 12

Results of Multiple Regression Analysis of Two Dependent Variables onto Boundary Spanners' Group Identification, Organizational Identification, and Intergroup Contact <sup>a</sup>

| Variables                          | Relationship Conflict |          |          |         | Intergroup Competition |          |          |         |
|------------------------------------|-----------------------|----------|----------|---------|------------------------|----------|----------|---------|
|                                    | Model 1               | Model 2a | Model 2b | Model 3 | Model 1                | Model 2a | Model 2b | Model 3 |
| Block 1: Controls                  |                       |          |          |         |                        |          |          |         |
| Organization 2                     | .39*                  | .76**    | .36*     | .51***  | .70***                 | .70*     | .66***   | .80***  |
| Organization 3                     | .31*                  | .67*     | .28      | .27     | .49***                 | .47*     | .42**    | .45***  |
| Organization 4                     | .55*                  | .73**    | .51*     | .93***  | .85***                 | .80*     | .78***   | 1.16*** |
| Organization 5                     | .06                   | .18      | .06      | .13     | .22                    | .20      | .23      | .29***  |
| Group membership change            | .33*                  | .25**    | .34*     | .23     | -.07                   | .02      | -.04     | -.16    |
| Group age                          | -.32*                 | -.45**   | -.29*    | -.56*** | -.22                   | -.28*    | -.17     | -.43*** |
| Group size                         | -.12                  | -.02     | -.11     | -.47**  | .06                    | .05      | .06      | -.25*   |
| Task interdependence               | -.12                  | -.18     | -.09     | -.36**  | -.16                   | -.16     | -.10     | -.38*** |
| Clarity of group boundaries        | -.05                  | .07      | -.01     | .29*    | -.07                   | .06      | -.01     | .23*    |
| Block 2: Main effects              |                       |          |          |         |                        |          |          |         |
| Group identification (GI)          | -.16                  | -.20     | -.25     | -.66*** | -.10                   | -.18     | -.26     | -.52*** |
| Organizational identification (OI) | -.18                  | -.08     |          | -.01    | -.32*                  | -.28*    |          | -.18*   |
| Intergroup contact (IC)            | .15                   |          | .14      | .53***  | .20                    |          | .18      | .53***  |



---

Block 3: Two-way interactions

|                      |  |        |      |         |  |       |      |         |
|----------------------|--|--------|------|---------|--|-------|------|---------|
| GI x OI              |  | -.21** |      | -.48*** |  | -.27* |      | -.37*** |
| GI x IC              |  |        | -.09 | -.12    |  |       | -.15 | -.09    |
| OI x IC <sup>c</sup> |  |        |      | -.10    |  |       |      | -.24*   |

Block 4: Three-way interaction

|              |  |  |  |         |  |  |  |         |
|--------------|--|--|--|---------|--|--|--|---------|
| GI x OI x IC |  |  |  | -.47*** |  |  |  | -.38*** |
|--------------|--|--|--|---------|--|--|--|---------|

|                             |       |        |       |          |         |         |        |          |
|-----------------------------|-------|--------|-------|----------|---------|---------|--------|----------|
| $\Delta R^2^b$              | .06   | .10    | .01   | .14      | .13     | .05     | .02    | .09      |
| <i>F</i> for $\Delta R^2^b$ | 1.47  | 7.80** | .45   | 17.12*** | 3.74*   | 4.86*   | 1.69   | 16.74*** |
| $R^2$                       | .43   | .51    | .41   | .72      | .57     | .59     | .51    | .82      |
| <i>F</i>                    | 2.46* | 3.41** | 2.30* | 5.73***  | 4.24*** | 4.64*** | 3.40** | 9.77***  |

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*Note.* <sup>a</sup> Standardized regression coefficients are shown;  $n = 53$  for regressions onto conflict scales;  $n = 39$  for regressions onto intergroup productivity.

<sup>b</sup> Changes in  $R^2$  are from the previous block within the same model.

<sup>c</sup> Two-way interaction coefficients of OI x IC are not shown in model 2, as they were not hypothesized.

$p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

*Hypothesis 1.* Hypothesis 1 proposed a main effect of boundary spanners' group identification on intergroup conflict, such that enhanced levels of group identification would be related to enhanced levels of intergroup conflict. A conservative, rigorous test was conducted to test main effect hypotheses. Instead of inserting predictor variables into separate regressions, all three predictors were entered in one step into the regression (Table 12, model 1). Thus, significant effects need to be interpreted such that these variables explain variance in intergroup conflict above and beyond the other two predictors. Inspection of Table 12 (model 1) reveals that boundary spanners' group identification did not predict significant variance in intergroup conflict. Thus, H1 was rejected.

*Hypothesis 2.* As suggested by the mere exposure perspective of intergroup contact (Pettigrew & Tropp, in press), Hypothesis 2 proposed a main effect of boundary spanners' amount of intergroup contact on intergroup conflict, such that frequent intergroup contact would be related to reduced levels of intergroup conflict. Results displayed in Table 12, model 1, reveal that boundary spanners' intergroup contact was not a significant predictor of group members' perceptions of intergroup conflict. Thus, H2 was rejected.

*Hypothesis 3.* As deferred from the common ingroup identity model (Gaertner et al., 1993), Hypothesis 3 proposed a main effect of boundary spanners' organizational identification on intergroup conflict, such that high levels of organizational identification would be related to reduced levels of intergroup conflict. Results displayed in Table 12, model 1, reveal that for intergroup competition, but not for relationship conflict, boundary spanners' organizational identification was a significant predictor of group members' perceptions of intergroup conflict ( $\beta_{\text{organisational identification}} = -.32, p < .05$ ). In support of the hypothesis, boundary spanners' organizational identification explained additional significant variance in intergroup competition, above and beyond control variables, intergroup contact,

and group identification. The more group boundary spanners identified with the organisation, the lower were group members' perceptions of intergroup competition. Thus, I found partial support for H3.

*Hypothesis 4.* Hypothesis 4 proposed a moderating effect of organizational identification, such that the relationship between boundary spanners' group identification and harmonious intergroup conflict is less negative for high levels of organizational identification than for low levels. Results displayed in Table 12 (model 2a) reveal that all interactions are in the predicted direction, as indicated by the negative beta coefficients. Also, the interaction term composed of group and organizational identification explained significant variance in both dependent variables. To facilitate interpretation of the interactions, relationships were plotted. I classified groups according to whether they scored one standard deviation above or below the mean, as illustrating high and low levels of group and organizational identification (Aiken, & West, 1991). Figures 10 and 11 illustrate the significant moderator effects on intergroup conflict (on relationship conflict,  $\beta_{\text{interaction}} = -.21, p < .01$ ; on competition,  $\beta_{\text{interaction}} = -.27, p < .05$ ). Whereas group identification is negatively correlated with both conflict scales at levels of high organizational identification, the relationship is positive at levels of low organizational identification (Figure 13 and 14). Thus, H4 was supported.



FIGURE 13

Organizational Identification as a Moderator of the Relationship between Group Identification and Relationship Conflict

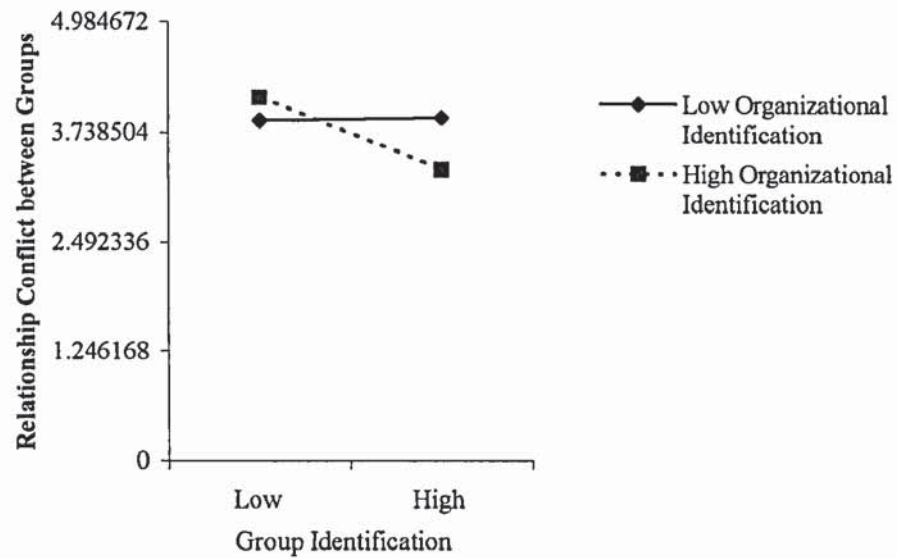
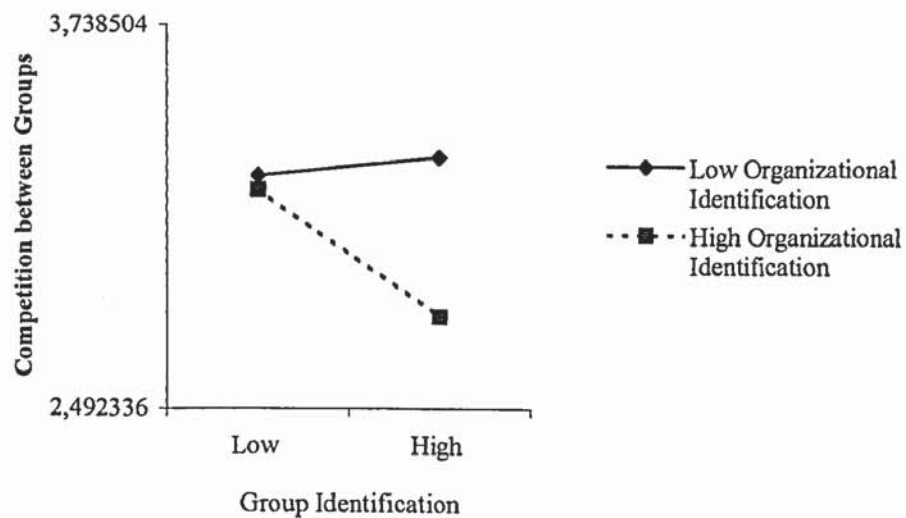


FIGURE 14

Organizational Identification as a Moderator of the Relationship between Group Identification and Intergroup Competition



*Hypothesis 5.* Hypothesis 5 proposed that the relationship between boundary spanners' group identification and harmonious intergroup relations is contingent upon levels of intergroup contact, such that the relationship is less negative for frequent than infrequent contact. Results displayed in Table 12 (model 2b) reveal that all interactions are in the predicted direction, as indicated by the negative beta coefficients. However, regressions on both intergroup conflict scales revealed no significant interaction effect. Thus, H5 was rejected.

*Hypothesis 6.* Hypothesis 6 proposed a multiplicative contingency effect, such that boundary spanners' group identification will be more positively or more strongly related to harmonious intergroup relations if organizational identification is high and intergroup contact frequent, than under any other combination of organizational identification and contact. Results displayed in model 3, Table 12 reveal that both interactions are in the predicted direction, as indicated by the negative coefficients. In support of the hypothesis, the three-way interaction term in the fourth step of the regression analysis explains additional significant variance in both outcome variables. Figures 12 and 13 illustrate the significant moderator effects on relationship conflict ( $\beta_{\text{three-way interaction}} = -.47, p < .001$ ) and competition ( $\beta_{\text{three-way interaction}} = -.38, p < .001$ ; Table 12 [model 3]). Figures 12 and 13 illustrate that whilst the relationship between group identification and both intergroup conflict scales is strongly negative if levels of both intergroup contact and organizational identification are high, the relationship is less negative or positive in any other condition.

FIGURE 15

Intergroup Contact and Organizational Identification as Moderators of the Relationship  
between Group Identification and Relationship Conflict

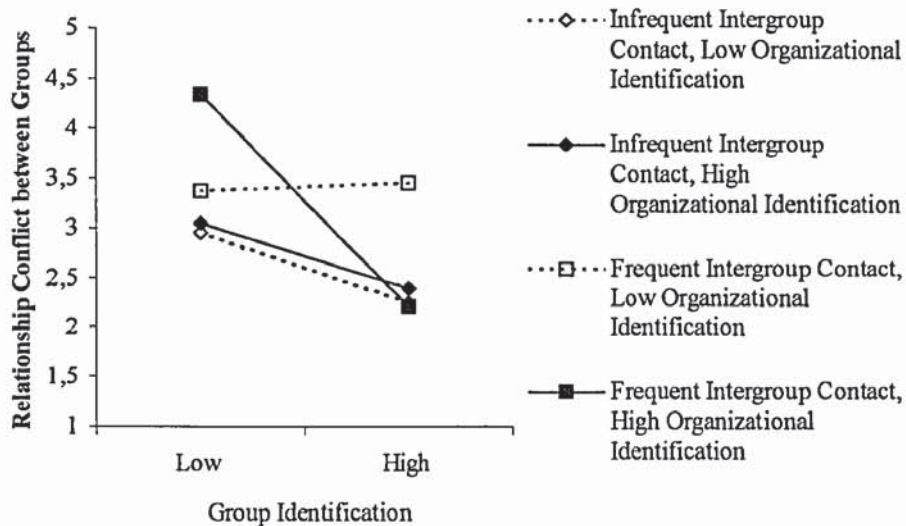
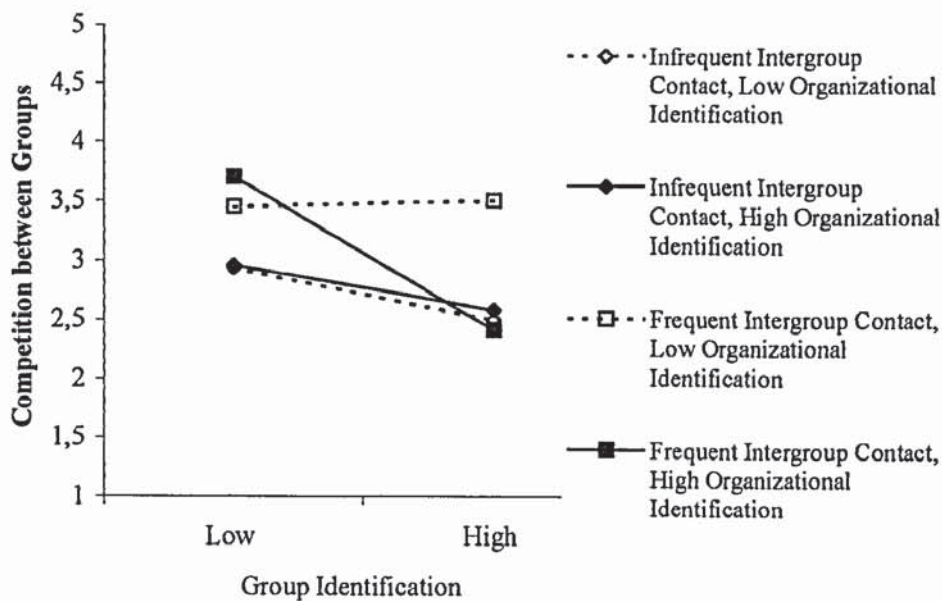


FIGURE 16

Intergroup Contact and Organizational Identification as Moderators of the Relationship  
between Group Identification and Competition





Hypothesis 6 postulated *a priori* differences in pairs of slopes, such that slopes at high levels of organizational identification and frequent intergroup contact are different from any other combination of organizational identification and contact. To test this hypothesis accurately, I examined whether slopes at high levels of organizational identification and intergroup contact differed significantly from any other pair of slopes, using the slope difference test (Dawson & Richter, in press). Table 13 shows that slopes at high levels of organizational identification and intergroup contact differ significantly from any other pair of slopes for both outcome variables. Thus, H6 was supported.

**TABLE 13**  
***T*-Tests of Slope Differences of the Relationship between Group Identification and Intergroup Conflict at Combinations of High and Low Organizational Identification (OI) and Intergroup Contact (IC)**

|   | Relationship Conflict |           | Intergroup Competition |           |
|---|-----------------------|-----------|------------------------|-----------|
| Slope Differences   | <i>t</i>              | <i>df</i> | <i>t</i>               | <i>df</i> |
| $\Delta OI_{(high)}, IC_{(high)}/$<br>$OI_{(high)}, IC_{(low)}$ | -3.38**               | 35        | -3.33**                | 35        |
| $\Delta OI_{(high)}, IC_{(high)}/$<br>$OI_{(low)}, IC_{(high)}$ | -5.70***              | 35        | -5.52***               | 35        |
| $\Delta OI_{(high)}, IC_{(high)}/$<br>$OI_{(low)}, IC_{(low)}$  | -3.09**               | 35        | -2.95***               | 35        |

*Note.* \*\* $p < .01$ ; \*\*\* $p < .00$

## 5.5 DISCUSSION

The findings extend previous research in the following ways. First, I used social psychological theories (such as social identity and intergroup contact theory) to develop a main effect and contingency framework that explains the relationship between boundary spanners' group identification, organizational identification, intergroup contact, and intergroup conflict. Multiple regression analysis on two measures of intergroup conflict (i.e., relationship conflict and competition) found mixed results for the common ingroup identity model. While boundary spanners' organizational identification was a significant negative predictor of group members' perceptions of intergroup competition, no such effect was found if relationship conflict was the outcome variable. Results strongly supported the dual identity hypothesis. At high but not low levels of organizational identification, boundary spanners' group identification was positively related to harmonious intergroup relations. Conversely, contact frequency did not emerge as a moderator of this relationship. The best model fit was achieved if both intergroup contact and organizational identification interacted *in combination* to moderate the relationship between boundary spanners' group identification and intergroup conflict: If levels of both intergroup contact and organizational identification were high, the relationship between boundary spanners' group identification and harmonious intergroup relations was stronger and more positive than for any other combination of high or low levels of organizational identification and contact, supporting theories that propose combinations of identification and intergroup contact for harmonious intergroup relations (Gaertner et al., 1999; Hewstone & Brown, 1986; Pettigrew, 1998).

Second, I conceptualized intergroup conflict beyond common attitudinal measures like ingroup bias by measuring relationship conflict and intergroup competition, thereby extending

the predictive power of social psychological theories beyond intergroup bias (cf. van Knippenberg, 2003).

Finally, I remedied a number of weaknesses of prior field research by the identification and use of ideographic organizations, the use of measures that clearly distinguished group from organizational identification, the selection of groups with clear group boundaries, and the explicit identification, definition and control of group boundaries. In the remainder, I discuss implications for theory, management, and future research.

### **5.5.1 Theoretical Implications**

I demonstrated that social psychological theories both separately and combined provide a very powerful framework not only for predicting hostile attitudes, but also intergroup conflict. To my knowledge, this is the first study to unambiguously support the dual identity model for intergroup relations between organizational groups. Boundary spanners' organizational identification appears to function as a buffer to the detrimental effects of group identification on intergroup working by shifting the focus to a common superordinate group without blurring group boundaries. This effect appears most pronounced if boundary spanners have frequent rather than rare outgroup contact. Contemporary versions of intergroup contact theory (Gaertner et al., 1999; Hewstone & Brown, 1986; Pettigrew, 1998) have suggested combining categorization or identification with forms of intergroup contact, though in somewhat different ways. Thus, Gaertner et al. (1996; 1999) propose that dual identity perceptions function as a mediator between intergroup cooperation and ingroup bias; Pettigrew (1998) proposes that a reduction of intergroup bias is achieved by a sequential process of decategorization, salient categorization, and recategorization, as attained through cooperative intergroup contact; and Hewstone and Brown (1986) view the salience of in- and



outgroup categories as a precondition allowing positive experiences with outgroup members to generalize to the outgroup as a whole. Finally, results from this study indicate that organizational identification and intergroup contact function as contingencies of the relationship between boundary spanners' group identification and group members' perceptions of intergroup conflict. Despite agreement about the importance of contact and superordinate identification, there appears to be a Babylonian jumble about the mechanisms by which these factors operate. Future research may clarify this by conducting comparative tests of theories that help to integrate findings into one overall model.

If I remove the social psychological lens on intergroup relations that guided this study, the findings also have implications for, and can well be integrated into boundary spanning theory (Adams, 1976). Organizational identification represents a potential attribute of the boundary spanner, and other features might function as candidates that influence intergroup outcomes, e.g., personality or gender (cf. Callister & Wall, 2001). Similarly, intergroup contact would be subsumed by boundary spanning theory as person-outsider interaction, of which other aspects, such as negotiation style, would provide comparative insights. The theory has been used to examine how boundary spanners' activities affect group effectiveness (Choi, 2002; Druskat & Wheeler, 2003). Yet, from my understanding, this framework does not make predictions about how boundary spanners affect and shape relationships between groups. Social psychological theories may provide such an extension by pointing to the role of the boundary spanners' self-concept and behaviour. Future research is needed to complete this puzzle by identifying and examining additional factors predicting harmonious intergroup relations, preferably by integrating theoretical frameworks from different disciplines.

### **5.5.2 Managerial Implications**

Dysfunctional relationships among groups have been discussed as a pitfall for team-based organizations (e.g., Kramer, 1991). The results of this chapter suggest that managers may combat intergroup conflict by enhancing employees' identification with the organization, whilst acknowledging groups for their individual performances (cf. Ashforth & Mael, 1989; Hogg & Terry, 2000). Measures by which to enhance organizational identification may include communication of organizational successes, ethical orientations, values and goals. Additionally, managers may consider boundary spanners' identification along with intergroup contact as a starting point for intergroup interventions: Rotation of individual boundary spanners, and promotion of those employees into boundary positions who feel strong ties with both their work group and the organization, may help to overcome intergroup conflict. Such interventions might be more efficient than others targeting at all group members. Finally, practitioners who want to optimize team-based organizations should make sure that intergroup working is on a group's agenda, in order to combat silo-working and foster employees' dual identification (cf. Pettigrew, 1998). Intergroup social gatherings, frequent intergroup meetings or the use of cross functional teams are examples of ways to promote intergroup contact across group boundaries.

### **5.5.3 Limitations and Directions for Future Research**

First and foremost, I used a 1-item measure of intergroup contact, which raises concerns about uncertain reliability. Even though testing the predictions derived from the "mere exposure" perspective of intergroup contact theory may not require a contact measure that embraces multiple facets of contact, and researchers have frequently used 1-item measures to test predictions derived from intergroup contact theory (see Pettigrew & Tropp, *in press*), future research using multi-item measures is clearly desirable to replicate findings.

Second, relationships with goal and relationship conflict were tested cross-sectionally, and do therefore not allow any inference of causality. It is possible that, for instance, perceptions of intergroup competition may have caused stronger group identification (cf. Ashforth & Mael, 1989), rather than (as I argued) vice versa. Only longitudinal studies and experimental designs will clarify the direction of effects. Taking the relationship between group identification and conflict as an example, the literature does discuss both identification as a result of conflict, and a condition that creates conflict (Kramer, 1991). In fact, a reciprocal effect is supported by both intergroup relations theory (Alderfer, 1987) and social identity theory (Tajfel, 1978). Finally, this research was carried out with five similar public health care organizations embedded within the British National Health Service. Dynamics between groups might differ in private organizations, making study replications in the private sector desirable. Future research may examine how other attitudinal and behavioural aspects of group boundary spanners are related to intergroup conflict.



## **PART C: INTERGROUP CONFLICT AND TEAM WORKING EFFECTIVENESS**

### **Chapter 6: The Development of a Measure of Intergroup Effectiveness**

#### **6.0 CHAPTER SUMMARY**

Many see the absence of conflict between groups as indicative of effective intergroup relations. Others consider its management a suitable effectiveness criterion. The aim of this chapter is to demarcate a different approach and propose that these views are deficient in describing effective intergroup relations. The chapter theorises alternative criteria of intergroup effectiveness rooted in team representatives' subjective value judgements and assesses the psychometric characteristics of a short measure based on these criteria. Results on empirical validity suggest the measure to be a potential alternative outcome of organisational conflict. Implications for both the study of intergroup relations and conflict theory are discussed.

With increasing complexity and environmental demands, organisations specialise and diversify their workforce, adopting team-based structures, in order to bundle and focus efforts to most efficiently handle their subtasks (Lawrence & Lorsch, 1967; McCann & Galbright, 1981). The completion of subtasks is, however, only useful when organisations manage to coordinate and integrate these “parts” into a “whole”. Utilising these combined resources can be a challenge for team-based organisations, due to structural and psychological barriers between groups that hinder effective intergroup relations (Kramer, 1991; Lawrence & Lorsch, 1967; van Knippenberg, 2003; see also Alderfer, 1987): Groups pursue their own interests at the expense of the overall organisational goal (Tjosvold, 1991); they compete over scarce resources (Mohrmann et al., 1995); and fail to manage the disruptive dynamics of social categorisation (Terry & Callan, 1998). Dutton and Walton (1966) describe how manufacturing units’ preference for long, economic runs conflicts with sales units’ preference for quick delivery to good customers. Such conflicts of interest are frequently fostered by management rewarding group effectiveness at the expense of the development and maintenance of effective lateral relationships (see Hartley, 1996). But is there a difference between conflict free and effective intergroup relations, and if so, how is organisational conflict related to intergroup effectiveness?

To answer this question we need a measure other than intergroup conflict assessing the quality and effectiveness of how dyads or sets of groups perform their collaborative tasks. In order to develop such a measure, one first needs to clarify what exactly characterises well-developed, effective relationships between groups.

In the following section, I therefore review existing approaches to intergroup effectiveness. I conclude this review by proposing four criteria that characterise the effectiveness of lateral relationships. These criteria are based on work group boundary

spanners' or line managers' value judgements and represent potential alternative outcomes of organisational conflict. In the remainder of the paper I examine the psychometric properties of a short scale measuring these criteria.

## **6.1 WHAT IS INTERGROUP EFFECTIVENESS? EXISTING CONCEPTUALISATIONS OF EFFECTIVE INTERGROUP RELATIONS**

### **6.1.1 Defining Key Concepts**

An intergroup transaction occurs “whenever individuals belonging to one group interact collectively or individually with another group or its members in terms of their group identifications” (Sherif, 1966, p. 9). Thus, intergroup transactions may occur between group representatives who represent their groups' interests, not their own, on behalf of their group. Intergroup effectiveness is likely the product of an intergroup transaction and consequently a concept that needs to be conceptually allocated at the intergroup level.

I will revert to two separate lines of literature deemed most fruitful in our search for candidates of effective intergroup relations (cf. Brett & Rognes, 1986): As intergroup effectiveness represents a layer of organisational effectiveness, I refer to the organisational effectiveness literature. Second, I review this body of the organisational intergroup relations literature that is most concerned with the exchange and output of dyads or sets of groups, the dispute resolution literature.

### **6.1.2 The Organisational Effectiveness Literature**

The empirical and theoretical literature on organisational effectiveness generally



distinguishes three levels: Individual, group, and organisational effectiveness (Jones, 1997). The classical models of group effectiveness subsume groups' relationships with other groups within the "input" or "context" category that impact on group processes and group effectiveness (e.g., Hackman, 1987). These models are therefore not suitable for capturing how interdependent groups operate as a functional synergistic entity, as a larger work unit (Mathieu et al., 2001). Others, mostly adopting an open system perspective, rather stress groups' active role in shaping and managing their environment, thereby more actively integrating group members' external strategies and boundary management into their models of group effectiveness (e.g., Gladstein, 1984). However, these models do not actually explicate how dyads or sets of groups co- and interact in pursuit of common goals either. Conceptually, as with other group effectiveness models, *single* group effectiveness is the only outcome variable.

Mathieu and colleagues (Mathieu et al., 2001) present a theoretical framework of Multi Team Systems (MTSs) that demarcates the effectiveness with which dyads or sets of groups perform collaborative tasks. An MTS is defined as a functional collective network of two or more teams operating within or across organisational boundaries. It describes a "team of teams", a functional collective, which forms a network operating in an environment that demands both coordinated interteam and intrateam behaviours in order to succeed. MTS boundaries are defined by virtue of the fact that all teams within the system, while pursuing different proximal goals, share at least one common distal goal, and therefore exhibit interdependence with at least one other team in the system. No one individual team can single-handedly accomplish an MTS superordinate goal. Mathieu and colleagues illustrate this by describing how fire fighter and ambulance teams have to closely synchronise their efforts in order to quickly and safely extract injured motorists from the crash scenes. Effectiveness of an MTS is therefore defined not only in terms of how well each team

accomplishes its proximal goals, but more importantly on how well different teams collectively accomplish shared goals at higher levels of the goal hierarchy.

### **6.1.3 Dispute Resolution Literature**

In contrast to the organisational effectiveness literature, the dispute resolution literature suggests the successful management of intergroup conflict or conflict free relationships, respectively, to be suitable candidates for effective intergroup relations.

Walton's theory of lateral relationships (Walton, 1966; chapter 3) provides a description of effective intergroup relations in terms of intergroup behaviour, intergroup attitudes, and the formation of the intergroup structure. The theory distinguishes integrative (effective) from distributive (ineffective) intergroup relations. Integrative intergroup relations are characterised by a problem-solving decision-making mode; positive attitudes, namely trust, friendliness, and the inclusion of the other unit; and interaction patterns that are flexible, informal and open. Conversely, distributive intergroup relations are characterised by a bargaining decision-making mode of careful rationing and deliberate distortion of information; rigid, negative attitudes like suspicion, hostility, and dissociation from the other unit; and a formal and circumscribed structure of interaction.

Among Walton's factors, bargaining and problem solving decision making in particular has attracted the attention of many researchers investigating effective intergroup relations. In short, a problem solving approach is considered most constructive as it aims for a settlement that integrates the goals of both parties (Blake et al., 1964; De Dreu et al., 1999; Lawrence & Lorsch, 1967; Nauta & Sanders, 2000; Thomas, 1992). For example, Lawrence and Lorsch (1967) compared six plastic firms and found that interunit cooperation was more effectively achieved to the extent that managers openly confronted differences rather than



smoothed them over or forced decisions. However, in contrast to Walton's framework, the literature tends to consider negotiation style as a means by which to resolve or manage conflict, rather than an effectiveness criterion by itself (e.g., Blake et al., 1966; Lawrence and Lorsch, 1967; Nauta & Sanders, 2000). The endurance of the negotiated settlement of the conflict resolution and participants' evaluation of processes and outcomes in terms of procedural and distributive justice are cited as additional important criteria for effective intergroup relations (Brett & Rognes, 1986).

Social identity theory (Tajfel, 1978; Tajfel & Turner, 1979; cf. chapter 3) may represent the dominant paradigm in investigating relationships among organisational groups. Social identity theory proposes that a potentially important and positively valued component of people's identities derives from their group memberships, and that these positively valued "social identities" are maintained primarily by means of social comparison processes of in-group members with relevant out-groups (Festinger, 1954). According to social identity theory, group members may develop conflicting relationships with outgroup members, in order to enhance their positively valued social identities. Considering the disruptive dynamics of social categorisation as the basis for intergroup conflict implies that the successful management of social categorisation characterises effective intergroup relations (cf. Brewer & Brown, 1998; Haslam, 2001). Suggestions of how to accomplish this vary from enhancing organisational identification (Richter, van Dick, & West, 2004), fostering contact (Allport, 1954; Pettigrew & Tropp, in press), to redrawing group boundaries by means of cross-, de-, or recategorisation, respectively (Brewer & Brown, 1998).

A different line of intergroup conflict research explicitly shifts the focus from cognitive processes of individuals to structural characteristics of interdependent organisational groups. Notably the imbalance of both differentiation of subsystems and the need for integrating these subsystems in pursue of superordinate organisational goals



represents an inherent potential for interface or structural conflict between work units (Blake et al., 1964; Lawrence & Lorsch, 1967). Such interface conflict is characterised by groups who find themselves in negative interdependence with the likely result that one group's goal achievement decreases the possibility of another group's goal achievement (cf. Thomas, 1992). Research based on realistic conflict theory (Sheriff, 1966) as well as the theory of competition and cooperation (Deutsch, 1973; Tjosvold, 1998) similarly stress that effective intergroup relations are rooted in the cooperative rather than competitive interdependence between groups. In support of this theory, Tjosvold et al. (1992) found that under conditions of cooperative interdependence representatives from divergent departments approached problems that emerged at the interface between groups in an open-minded manner. Such constructive controversy was then positively related to the extent to which customers were well served, to efficiency, and to the extent that group leaders believed they can work with the other group leader productively in the future. Similarly, discussing views openly and cooperatively helped managers of different departments to win engineering contracts and improve productivity in a large consultancy firm (Tjosvold, 1988a). These studies suggest that perceptions of positive interdependence between groups represent the basis for effective intergroup relations.

Brett and Rognes (1986) further developed Williamson's (1975) concept of transaction costs for their criteria of intergroup effectiveness. This refers to the costs that emerge from the interaction of two groups when at least one of the parties pursues its own interests rather than maximising the two parties' joint benefits. Transaction costs can take the two forms that parties either engage in needless haggling over the terms of the transaction, or the terms of the transaction are advantageous to one party but sub optimal for the relationship as a whole.

The authors argue that transaction costs at the intergroup level of conceptualisation consist of the two elements quality and efficiency. Either element is a consequence of how intergroup conflict is dealt with. Quality refers to the degree to which the intergroup negotiation results in a well defined exchange agreement. If the quality is poor, then negotiations will be reopened after a settlement, because settlement was either incomplete or ill defined. Efficiency refers to the costs associated with the establishment of transaction terms, that is manpower and resources expended during intergroup negotiations. These costs may emerge in the form of constraints on both intragroup and intergroup activities, as well as manpower costs associated with developing the transaction terms. The authors argue that both quality and efficiency need to be balanced in order to assess the effectiveness of an intergroup relationship. So do incurred costs not necessarily have to be an indicator of reduced effectiveness; high quality interface solutions and enduring agreements between teams may simply require high costs, but pay off in the long run if they endure and are accepted by both parties. Brett and Rognes's conceptualisation is doubtlessly a major step in the development of intergroup effectiveness criteria. However, their rationale is based on the two premises that the reason for interaction between groups is to exchange resources, and that criteria are based on the transformation of a conflict into action by both groups.

#### **6.1.4 Evaluation of the Dispute Resolution and Organisational Effectiveness Literature**

In many of the outlined conceptualisations of effective intergroup relations, three aspects appear critical.

First, most approaches are based on the assumption that conflict between groups is both frequent and dysfunctional. Consequently, the absence of conflict, the transformation of a dispute into action, or the well-negotiated outcome are features of effective intergroup



relations. This assumption seems obvious as the potential for intergroup conflict is inherent in team-based organisations due to both structural characteristics and social categorisation processes (see Hartley, 1996; Kramer, 1991). Nevertheless, even though relationships between groups may bear considerable conflict potential (Thomas, 1992), they do not necessarily have to be rich in conflicts, or may be conflictual in some aspects, but harmonious in others. Several authors report case studies of harmonious relationships between groups as characterised by a friendly, cohesive intergroup atmosphere (Blake et al., 1964; Lawrence & Lorsch, 1967), even under conditions of considerable conflict potential, as it exists between production and sales departments (Dutton & Walton, 1966). Conversely, intergroup conflict does not have to be detrimental for organisations (Putnam, 1997); little or no conflict may even result in stagnation, poor decisions, and ineffectiveness (Rahim, 2001; p. 12), whereas positive effects of intergroup conflict include motivation through competition, enhancement of stability in the system through channelled inter-unit contact, and rigidity and formality in decision procedures (Walton & Dutton, 1969). Yet, most approaches are built upon the existence of dysfunctional conflict between groups, and are therefore deficient in explaining the effectiveness with which harmonious dyads of groups perform their collective tasks.

Second, most approaches (e.g., Brett & Rognes, 1986) are based on the assumption that groups solely interact to exchange valuable resources. This rationale, however, does not take into consideration that groups may also interact as one synergistic entity in order to accomplish the overall organisational goals (Tjosvold, 1991; van de Ven & Ferry, 1980, p. 300). The integration of differentiated units in order to produce integrative outcomes or services can be crucial for organisational effectiveness (see Mathieu et al., 2001). The second important point being made is that the criteria of intergroup effectiveness should therefore include such collective services or products that are cooperatively generated by different groups.



Finally, I argue that there is a varying understanding of whether effective intergroup relations are best characterised by intergroup attitudes (e.g. trust, bias), intergroup behaviour (i.e. integrative negotiation style), conflict free relationships, aspects of superordinate goal accomplishment, or comprises aspects of each. I proposed earlier that intergroup effectiveness is the *product* of intergroup transactions occurring between boundary spanners (i.e., those group members involved in intergroup transactions) or entire groups. I thus focus primarily on the *output in the form of a product or service* of these transactions. A group dyad may produce such an output, even under conditions of high conflict, dysfunctional attitudes and behaviour. The final important point therefore is that I explicitly demarcate the criteria of intergroup effectiveness from intergroup attitudes, negotiation style, and intergroup conflict.

#### **6.1.5 An Integrative Framework for Criteria of Intergroup Effectiveness**

In response to my criticism, I began the development of meaningful criteria of intergroup effectiveness with the question of why different groups interact. Such a perspective may allow me both to avoid criterion deficiency and to integrate existing conceptualisations. Additionally, it may divert attention away from the transformation of conflict as the sole basis of effective intergroup relations. Van de Ven and Ferry (1980) distinguished two causes for the development and maintenance of intergroup relationships.

The resource dependence model is consistent with former approaches (e.g., Brett & Rognes, 1986; cf. Aiken & Hage, 1968) and argues that groups interact with other groups because of their need for resources. Therefore, the causation of the relationship, the need for valuable resources, lies *within* the groups. Consequently, the extent of resource provision and utilisation between groups is an important criterion of intergroup effectiveness.

Complementary to this model is the organisational system position. This perspective argues that different groups also interact in order to respond to system problems, emerging opportunities, or mandates within the groups' organisational environment. According to this perspective, the causation of the intergroup relationship lies within the groups' environment and therefore *outside* the group. Both positions are in line with Mathieu and colleagues (Mathieu et al., 2001) as well as Tjosvold's (1998) rationale as they are related to the attainment of or rate of progress towards the achievement of superordinate goals. The extent to which both teams effectively respond to their environment would thus represent a second criterion.

Regardless of the cause of cross group working, I propose two additional criteria most relevant for effective collaboration between groups.

The first is the concept of transaction costs in the form of Brett and Rognes' (1986) efficiency and quality criterion. Ineffective intergroup relations are characterised by unreasonably high transaction costs, as indicated by a high ratio of invested resources to the quality of the outcome.

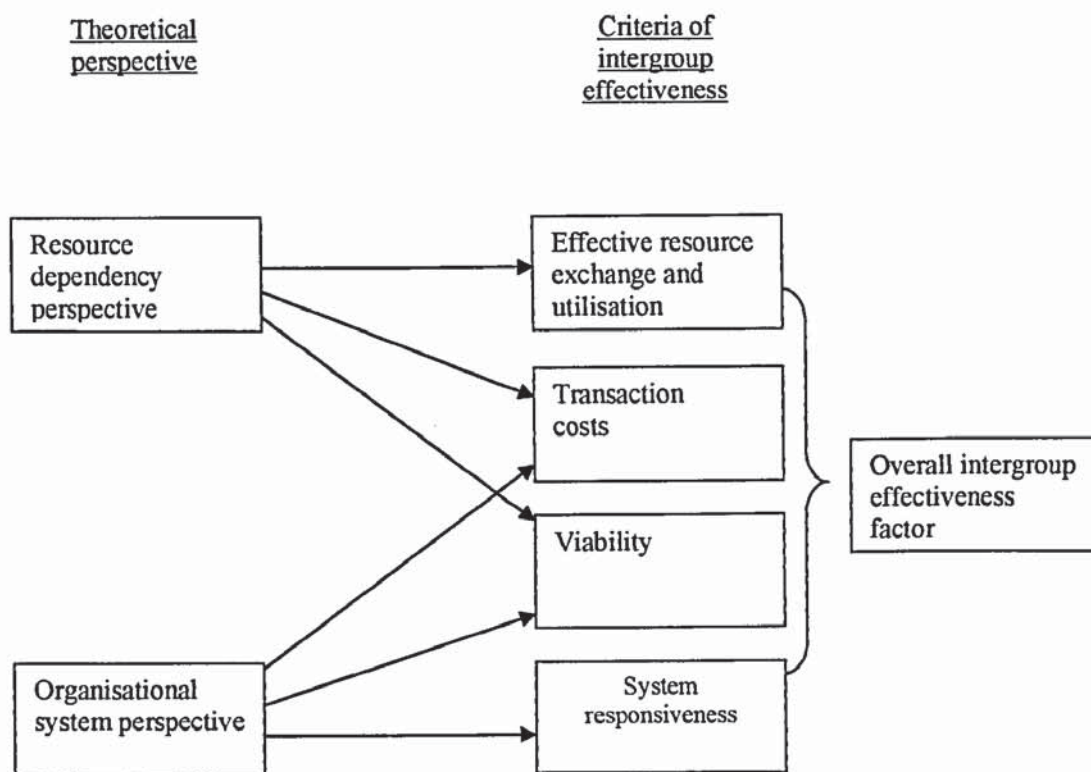
The final criterion refers to the viability of the intergroup relationship. If both groups do not honour their responsibilities and commitments towards each other and perceive the give and take relationship between both parties as unfair, resource exchange and efficient coordination may be reduced. Such unreliable or unbalanced relationships may lead to groups working in isolation or building alternative relationships with other work units.

Despite the theoretical utility of distinguishing different reasons why groups interact, groups may most likely cooperate in order to both provide each other with valuable resources and to work on collaborative mandates, problems or opportunities; similarly, complex tasks may embrace aspects of both. From there, it is proposed that the sub factors yield one superordinate factor of intergroup effectiveness, as illustrated by Figure 17.

From this analysis I set about developing a measure of intergroup effectiveness and the methods employed are described below.

**FIGURE 17**

**A Theoretical Model of Criteria of Intergroup Effectiveness**



## 6.2 METHOD

### 6.2.1 Item Generation

The aim was to create a short but parsimonious measure of intergroup effectiveness that could easily be administered within a larger survey. An initial item pool of 24 items capturing the four theoretical criteria (six items per category) was compiled by the first



author. Since the goals a dyad follows may not result in the dyad's objective output but rather be based on boundary spanners' subjective attitudes and perceptions, items reflected value judgments of the boundary spanners' subjective beliefs and attitudes (see van de Ven & Ferry, 1980; p. 417). Following Brett and Rognes (1986), items meant to represent the product of an intergroup interaction; to characterise the relationship over time; and to represent an index of the quality of the relationship. Items were generated following principles outlined by Nunnally and Bernstein (1994, p. 298) and van de Ven and Ferry (1980; cf. Guilford, 1954), including item simplicity, clarity, unidimensionality, and similarity in structure. As items were conceptualised at the intergroup level, item wording matched this level using an intergroup referent (e.g., "To what extent did *both teams work effectively together* in order to provide better services to patients?") (cf. Klein et al., 2001). Since some items with an intergroup referent appeared difficult to understand, these items were worded in such a way that two separate items assessed the perspective of each group of the dyad (e.g., "For *this other team* to accomplish its goals and responsibilities, to what extent did it receive the expected services, resources, or support from *your team*?" in addition to "For *your team* to accomplish its goals and responsibilities, to what extent did you receive the expected services, resources, or support from *this other team*?"). The pool also included five items from an existing measure of intergroup effectiveness (van de Ven & Ferry, 1980).

Three subject matter experts (PhD students familiar with research on teams and intergroup relations) were then asked to assign the items blindly to one of the four criteria in order to confirm the four-partite factor structure. Additionally, they were asked to indicate how difficult they found this assignment on a 1-5 likert scale (please find the rating sheet in Appendix 11). Items allocated by more than one expert in a deviant category or rated as difficult to assign were excluded from further analysis. For those items where one expert disagreed with the others, differences were discussed, and it was assessed whether they were

due to either different perceptions of what the items measure or weaknesses in the wording of the items. Either deletion or rewording of items, respectively, terminated the development process. The instrument was then given to six individuals working in three different health care organisations as well as a pilot team of one of the five participating organisations. Comments resulted in slight amendments of the measure. The final scale is outlined within Appendix 7.

### **6.2.2 Procedure**

The research followed the procedure detailed in chapter 4. In short, 57 administrative and service teams at the same hierarchical level that were established, worked together interdependently, had three or more members, and worked together interdependently with at least one other group (Brett & Rognes, 1986; Alderfer, 1987), agreed to participate and were asked to agree upon one other team within the organisation (apart from management) they worked the closest with. This was done to ensure both interaction frequency and high interdependence between teams. All questions on intergroup relations referred to this other team. The survey was disseminated to 475 individuals of 57 teams, and 276 staff belonging to 54 teams returned surveys, yielding an individual level response rate of 58%. We chose Dawson's (2003) selection rate as a criterion to exclude teams with low team level response rates from further analysis (cf. chapter 4). The cut-off point chosen was a selection rate of .32, which suggests that scores measured by incomplete data are correlated with true scores to .95 or higher. Four teams did not meet this cut-off point and were deleted for further analysis, yielding a resulting sample of 53 groups (274 respondents) that varied across service and administration groups. 206 participants (88%) were female, which is not surprising as a great part of teams were nursing teams. A selection question that asked whether team members did

interact on work related matters with members of the other team allowed to identify 222 individuals as the teams' boundary spanners, those individuals involved with members of the other team. These individuals answered the questions on intergroup effectiveness. Boundary Spanners are considered the most suitable assessors of effectiveness, as these individuals are directly involved in intergroup transactions (van de Ven & Ferry, 1980). As their judgments may, however, be prone to self-serving bias, I also asked teams to consent that the researcher approaches their line manager in order to obtain external ratings of team and interteam effectiveness. Forty-seven groups agreed, and a total of 40 external ratings at Time 1 and Time 2 (after five months) were obtained (see chapters 4 and 5 for details on drop out analysis).

### 6.3 RESULTS

The remainder of this paper is concerned with examining the psychometric properties of the intergroup effectiveness scale. I carried out individual level analysis to examine both construct validity (using confirmatory factor analysis) and discriminant validity (using exploratory factor analysis). I then aggregated the data to the team level. Consensual and discriminable validity was examined in order to justify aggregation. Further support for consensual validity was provided by examining correspondence of perceptions of four pure team dyads, as well as examining correlations of both self- and external ratings. Autocorrelations between subscales at Time 1 and Time 2 will be used for inferences about the measure's stability. Data on internal homogeneity conclude the analysis. Chapter 7 examines predictive validity by developing and testing a theoretical model predicting intergroup effectiveness.



### 6.3.1 Individual Level Analysis

**Construct validity.** I tested the model using confirmatory factor analysis (CFA) with AMOS version 3.51 (Arbuckle, 1995). Following the presented rationale, I tested the hypothesised four-factor model (representing the four sub factors of intergroup effectiveness) against a one-factor model (assuming participants do not differentiate between sub factors, but an intergroup effectiveness factor does exist) and a null-factor model (the data does not yield a single factor). The four-factor model was tested with both uncorrelated factors (indicative that no super ordinate intergroup effectiveness factor exists) and correlated factors (indicative that a super ordinate factor exists). As CFA yielded an initial poor fit for the four- and the one-factor models, I deleted four items according to the suggested modification indices. The resulting 12 items are included in Table 15.

**TABLE 14**

**Fit Indices of Confirmatory Factor Analysis for the Intergroup Effectiveness Scale**

|  | $\chi^2$ | <i>df</i> | $\chi^2/df$ | GFI | TLI |
|--|----------|-----------|-------------|-----|-----|
| Null model                               | 1273.31  | 66        | 19.29       | .34 | .00 |
| Four-Factors (uncorrelated) <sup>a</sup> | 456.54   | 56        | 8.15        | .72 | .61 |
| One-Factor <sup>b</sup>                  | 389.45   | 54        | 7.21        | .73 | .66 |
| Four-Factors (correlated) <sup>c</sup>   | 100.49   | 48        | 2.09        | .93 | .94 |

*Note.*  $N = 242$ ; GFI = goodness of fit index; TLI = Tucker Lewis index

<sup>a</sup>Difference four-factor (uncorrelated) and null-model:  $\Delta\chi^2(df) = 816.77(10)***$

<sup>b</sup>Difference one-factor and four-factor model (uncorrelated):  $\Delta\chi^2(df) = 67.09(2)***$

<sup>c</sup>Difference four-factor (correlated) and one-factor model (correlated):  $\Delta\chi^2(df) = 288.96(6)***$

\*\*\*  $p < .001$ .

Table 14 illustrates fit indices for the model based on the remaining 12 items. Low  $\chi^2$  values as well as high GFI and TLI values are suggestive of good model fit. In particular, for the TLI and GFI index, recommended levels of fit are above .90. Recommended values for the ratio of  $\chi^2$  indices to degrees of freedom ( $\chi^2/df$ ) range between 2 and 5 (Arbuckle, 1997).  $\chi^2$  values are more depending on sample size than others, e.g. the TLI values (Gerbing & Anderson, 1993), which is, however, not problematic for small samples. Only the correlated four factor model reaches the recommended values for the ratio of  $\chi^2$  values to degrees of freedom ( $\chi^2/df$ ) below 5, and TLI and GFI values above .90. I tested the improvement of model fit by calculating the differences of  $\chi^2$  values in relation to the differences in degrees of freedom ( $\Delta\chi^2/\Delta df$ ) for each model. The test indicates a significant model improvement for the correlated four factor model over the one factor model ( $\Delta\chi^2(\Delta df) = 288.96(6)$ ;  $p < .001$ ; Table 14), suggesting that the correlated four factor model fits the data best.

**Discriminant validity.** I then assessed the measure's discriminant validity by carrying out exploratory factor analysis with items measuring *team effectiveness*, *intergroup conflict*, *intergroup negotiation style*, *intergroup attitudes*, and *intergroup effectiveness*. The scales measured team performance standards (Vinokur-Kaplan, 1995), relationship conflict between teams (adapted from Janssen et al., 1999), forcing and problem solving negotiation style (De Dreu et al., 2001), and intergroup trust (Cummings & Bromiley, 1996) in addition to our intergroup effectiveness items. High discriminant validity would be indicated if the factor structure clearly differentiates intergroup effectiveness from other scales. Additionally, I expected the intergroup effectiveness sub scales to load on different factors, thereby providing additional support for the construct's four-factor structure.

Table 15

Principal Axis Factor Analysis of Self Report Data; Pattern Matrix, Oblique Rotation

|  | Rela-<br>tionship<br>conflict | Trans-<br>action<br>costs | Team<br>effec-<br>tiveness | Forcing<br>lem<br>solving | Via-<br>bility<br>trust | Inter-<br>group<br>trust | Inter-<br>group<br>produc-<br>tivity |
|--|-------------------------------|---------------------------|----------------------------|---------------------------|-------------------------|--------------------------|--------------------------------------|
| 1. Encounters with members from this team are frequently frustrating.                          | -.54                          | .20                       | .02                        | .08                       | -.08                    | .17                      | -.19                                 |
| 2. The tension we have is sometimes painful.   | -.65                          | .21                       | .10                        | .11                       | -.11                    | .00                      | -.04                                 |
| 3. Encounters with members from this team frequently produce anger.                            | -.61                          | .31                       | .01                        | .09                       | -.07                    | .04                      | -.11                                 |
| 4. The personal relationships are always excellent. (revised)                                  | -.71                          | -.04                      | .06                        | -.06                      | .09                     | -.05                     | -.03                                 |
| 5. The atmosphere is usually very companionable. (revised)                                     | -.77                          | -.07                      | -.02                       | .01                       | .03                     | -.09                     | -.08                                 |
| 6. We usually get on personally very well. (revised)   | -.62                          | -.03                      | -.05                       | .01                       | .19                     | -.00                     | -.13                                 |
| 7. I feel that the people in the other team negotiate with us honestly.                        | .02                           | .07                       | -.08                       | -.03                      | .07                     | -.02                     | .87                                  |
| 8. I feel that people in the other team negotiate joint expectations fairly.                   | .05                           | -.04                      | -.01                       | .02                       | -.10                    | .10                      | .61                                  |
| 9. I think that the people in the other team meet their negotiated obligations to our team.    | .02                           | -.09                      | -.02                       | .06                       | -.01                    | .07                      | .77                                  |
| 10. In my opinion, people in the other team are reliable.                                      | .01                           | .03                       | -.02                       | -.02                      | -.07                    | -.13                     | .70                                  |
| 11. I examine ideas from both sides to find a mutually optimal solution.                       | .12                           | -.15                      | -.09                       | -.16                      | -.59                    | .01                      | .00                                  |
| 12. I work out a solution that serves my own as well as other's interests as well as possible. | -.04                          | -.04                      | -.04                       | .07                       | -.59                    | .06                      | .03                                  |
| 13. I examine issues until I find a solution that really satisfies me and the other party.     | -.10                          | -.04                      | .05                        | .01                       | -.67                    | .00                      | .13                                  |



|     |   |      |      |      |      |      |      |      |      |
|-----|---|------|------|------|------|------|------|------|------|
| 14. | I stand up for my own and the other's goals and interests.  | .06  | .19  | .02  | .14  | -.44 | .01  | -.09 | -.00 |
| 15. | I do everything to win.   | .14  | .24  | .04  | .52  | .05  | .04  | .08  | .08  |
| 16. | I push my own point of view.  | -.06 | -.06 | .01  | .57  | -.11 | .04  | -.05 | .09  |
| 17. | I search for gains.   | -.11 | .03  | -.07 | .55  | -.00 | .01  | .01  | -.14 |
| 18. | I fight for a good outcome for myself.  | .00  | -.20 | .02  | .77  | -.00 | -.08 | -.02 | -.02 |
| 19. | Our team met the standards of quality expected by the PCT.  | .05  | .08  | -.80 | -.04 | -.01 | .11  | .05  | .06  |
| 20. | Our team met the standards of quantity expected by the PCT.   | -.10 | .02  | -.72 | -.05 | -.09 | -.04 | .06  | -.01 |
| 21. | Our team met the standards of timeliness expected by the PCT.   | .03  | -.14 | -.78 | .06  | .06  | .00  | .01  | .02  |
| 22. | Our team met the standards of implementation expected by the PCT  | -.03 | -.15 | -.79 | .06  | .07  | .03  | -.02 | -.09 |
| 23. | Our team had a reputation for work excellence within the PCT.   | .06  | .19  | -.78 | .00  | -.06 | -.00 | -.02 | .00  |
| 24. | To what extent did working with this other team result in too many constraints (e.g., time/staff shortage etc.) for your team's everyday activities?  | -.09 | .39  | -.07 | -.00 | -.01 | -.08 | -.14 | -.08 |
| 25. | To what extent did working with this other team entail too much loss of time and energy on trying to reach enduring agreements?   | -.35 | .41  | .14  | -.04 | -.03 | .08  | -.23 | -.02 |
| 26. | To what extent did working with your team result in too many constraints (e.g., time/staff shortage etc.) for this other team's everyday activities?  | -.11 | .59  | .14  | .00  | .08  | .01  | .02  | .12  |
| 27. | To what extent was there too much disagreement about resource allocation (e.g. time to invest, people or staff, allocation of tasks or duties, etc.) between your team and this other team? | -.27 | .55  | .05  | -.05 | .06  | .01  | -.22 | -.01 |

|     |  |            |      |      |      |      |            |      |             |
|-----|--|------------|------|------|------|------|------------|------|-------------|
| 28. | To what extent did both teams work effectively together in order to respond to tasks or duties that emerged from working within the PCT (e.g., coordinating cross-team activities, assignment of organisational duties, etc.)? | .16        | -.18 | .02  | .06  | -.08 | .15        | .09  | -.49        |
| 29. | To what extent did you feel the relationship between your team and this other team was productive?*  | <u>.31</u> | -.07 | -.09 | .09  | -.02 | .11        | .06  | <u>-.54</u> |
| 30. | To what extent did both teams work effectively together in order to provide better services to patients?   | .12        | .11  | -.03 | -.12 | -.11 | .05        | .10  | -.65        |
| 31. | To what extent did both teams work effectively together in order to respond to problems or flaws that emerged from working within the PCT (e.g., staff or time shortage, etc.)?  | .01        | .04  | -.07 | .06  | .01  | -.01       | -.02 | -.71        |
| 32. | To what extent did both teams effectively help each other out if resources (e.g., time to invest, people or staff, support etc.) were needed?  | .00        | -.05 | .02  | -.04 | -.05 | -.01       | .02  | -.81        |
| 33. | To what extent did both teams make effectively use of each other's resources (e.g., time to invest, people or staff, support etc.) in order to provide better patient care?  | .10        | .07  | .04  | -.00 | -.01 | .08        | .15  | -.70        |
| 34. | To what extent did your team carry out your responsibilities and commitments in regard to this other team? *   | .01        | .02  | -.09 | -.02 | -.03 | .88        | -.05 | .01         |
|     | To what extent did this other team carry out its responsibilities and commitments in regard to your team? *  | -.08       | -.18 | .03  | -.02 | .01  | <u>.51</u> | .19  | <u>-.45</u> |

Note.  $n = 274$ ; Total Variance Explained: 69.71%, Items loading above .30 in bold; cross loadings are underlined

\* Items from the Organizational Assessment Inventory (van de Ven & Ferry, 1980)

Table 15 indicates that differential validity is supported inasmuch as the intergroup effectiveness subscales by and large load on different factors than the other intergroup variables do. A closer inspection reveals that two items cross loaded between the relationship conflict and transaction cost factor, implying some conceptual overlap between both constructs. Similarly, one viability item displays a significant cross loading with the intergroup productivity factor. Further analysis will clarify whether transaction costs and viability represent independent subscales. Apart from these exceptions, the data suggests intergroup effectiveness to be distinct from team effectiveness, intergroup conflict, negotiation style, and intergroup trust. The relationships among the intergroup effectiveness subscales, however, are controversial. Whilst items measuring viability and transaction costs can be identified as separate factors, those measuring system responsiveness and resource exchange load on the same factor. Thus, contrary to the underlying rationale, participants may not distinguish very well between both. One possible explanation for this would be that the tasks the team dyads are working on may involve both the exchange of resources between teams and their response to problems, mandates, or opportunities within the organisation. Also, working together on tasks within the broader organisation may automatically require to exchange resources. Thus, the distinction between both scales may be more relevant from a theoretical than a practical point of view. Therefore both scales are collapsed into one intergroup productivity scale for the remainder of the analysis.

### **6.3.2 Group Level Analysis**

I chose Dawson's selection rate (Dawson, 2003) as a criterion to exclude teams with low team level response rates from further analysis (see chapter 4, for details). Selection rate



assesses the accurateness of incomplete team level data in predicting true scores as a function of team response rate and team size. The cut-off point chosen was a selection rate of .32, suggesting that scores measured by incomplete data are correlated with true scores to .95 or higher. Four teams were above this cut-off point and therefore deleted for further analysis, yielding a remaining sample of 53 teams.

*Consensual and discriminant validity.* I argued earlier that an intergroup theory would be justified as boundary spanners negotiate their group's interests, and not their personal interests, on behalf of their team. This suggests that all members within a team involved in cross team working have similar perceptions on their relationships with other teams, and that these perceptions may vary across teams. Therefore I aggregated the intergroup effectiveness data for each team. Statistical justification of aggregating individuals' responses by groups is given if interrater agreement within teams is high, as measured by  $r_{wg(j)}$  (George & James, 1993; James et al., 1984).  $R_{wg(j)}$  values above .70 suggest acceptable consensual validity (cf. Nunnally & Bernstein, 1994). Additionally, discriminant power needs to be assessed by demonstrating that the construct varies considerably across teams, suggesting that responses are dependent on team membership (Yamarino & Markham, 1992). Thus, I computed one-way ANOVAs on the aggregated intergroup effectiveness subscales to calculate the intra-class coefficients ICC1 and ICC2. ICC2 values above .50 are suggestive of acceptable discriminant validity. Minimum evidence for differences across groups is indicated if an ICC1 index has  $F$ -ratios from an ANOVA greater than 1; however, researchers commonly use a significant  $F$ -ratio to justify aggregation (Klein et al., 2000).

**Table 16**  
**Indices of Consensual and Discriminant Validity**

|                                | $r_{wg(j)}$ | ICC1 | ICC2 | <i>F</i> -value of<br>ICC(1) |
|--------------------------------|-------------|------|------|------------------------------|
| Intergroup productivity Time 1 | .87         | .22  | .52  | 2.10***                      |
| Intergroup productivity Time 2 | .91         | .29  | .59  | 2.50***                      |
| Transaction costs Time 1       | .86         | .39  | .72  | 3.57***                      |
| Transaction costs Time 2       | .82         | .32  | .63  | 2.68***                      |
| Viability Time 1               | .83         | .07  | .23  | 1.29                         |
| Viability Time 2               | .80         | .22  | .50  | 2.00***                      |

*Note.*  $n = 53$  teams at Time 1; 35 teams at Time 2

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

Table 16 illustrates that the average  $r_{wg(j)}$  indices for the four sub scales are above .70, indicating that all sub scales have sufficient consensual validity. Controversial, however, is the measure's discriminable validity. With the exception of viability (Time 1), all sub scale reach the recommended ICC2 values of .50 or above. On the other hand, *F*-values of the ICC1 are above unity for all sub-scales and significant for all sub-scales, except viability (Time 1), suggesting that three of the four sub scales have acceptable discriminant validity.

The literature discusses several potential reasons why indices of discriminant validity at group level yield inconsistent or low results. First, even though the ICC1 value controls for team size, the *F*-test for ICC1 indices and the ICC2 values are influenced by both number and size of the units in a sample. From there, the small size of this sample may have deteriorated results. Second, restrictions of range due to sample size artefacts can artificially cause low between group variance (George & James, 1993). Our teams are nested within a limited number of organisations, which are all embedded within the British National Health Service. They follow the same political and strategic guidelines, regulations, and have very similar

organisational structures. Teams may therefore not vary indiscriminately with respect to the viability subscale.

*Consensual validity for both teams in a dyad.* A critical issue in this research is that intergroup effectiveness is an intergroup construct, but information is gathered by only one team of each dyad. The implicit assumption that both teams of a dyad agree on their perceptions of the construct and therefore can be treated regarding their views on effectiveness as a homogenous whole is underlying this procedure. Klein, Palmer and Buhl-Conn (2000) criticise this frequent problem in research with dyads and suggest to examine whether generalisation is justified. I have therefore examined the four dyads within this sample in order to see whether both teams of the dyads agreed on their perceptions of intergroup effectiveness. Should both teams of a dyad rate intergroup effectiveness differently, the  $r_{wg(j)}$  for the dyad as an entity should be both above .70 and substantially lower than the separate  $r_{wg(j)}$  values for both individual teams.



TABLE 17

Comparison of  $R_{wg(j)}$  Values of Teams Individually and Collapsed to Dyads at Time 1

|                     | Intergroup         |             | Transaction        |             | Viability          |             |
|---------------------|--------------------|-------------|--------------------|-------------|--------------------|-------------|
|                     | Productivity       |             | Costs              |             |                    |             |
|                     | $r_{wg(j)}$        | $r_{wg(j)}$ | $r_{wg(j)}$        | $r_{wg(j)}$ | $r_{wg(j)}$        | $r_{wg(j)}$ |
|                     | dyad <sup>ab</sup> |             | dyad <sup>ab</sup> |             | dyad <sup>ab</sup> |             |
| Team 1 <sup>a</sup> | .98                |             | .85                |             | .91                |             |
| Team 1 <sup>b</sup> |                    | .94         |                    | .89         |                    | .91         |
| Team 2 <sup>a</sup> | .36                |             | .91                |             | .96                |             |
| Team 2 <sup>b</sup> |                    | .80         |                    | .93         |                    | .85         |
| Team 3 <sup>a</sup> | .98                |             | .98                |             | .86                |             |
| Team 3 <sup>b</sup> |                    | .90         |                    | .88         |                    | .00         |
| Team 4 <sup>a</sup> | .97                |             | .89                |             | .49                |             |
| Team 4 <sup>b</sup> |                    | .94         |                    | .89         |                    | .46         |
| Mean                | .85                | .89         | .88                | .90         | .63                | .55         |

Note.  $n = 8$  teams (4 dyads)

Table 17 displays the mean  $r_{wg(j)}$  values for the intergroup effectiveness sub scales for both teams of the dyads individually, and for entire dyads where I collapsed responses of both teams. Mean  $r_{wg(j)}$  values for individual teams and entire dyads are very similar, with the biggest difference in  $r_{wg(j)}$  for the viability sub scale ( $\Delta r_{wg(j)} = .08$ ). I therefore conclude that the (even though limited) data is, with the exception of the viability subscale, suggestive of generalising data from one team to the entire team dyad. Klein et al. (2000) suggest that when indices lead to differing conclusions regarding aggregation, researchers may base their decision on theory, prior research, or the belief in the superior merits of one of the indices before aggregating their measures. Following the presented rationale in this paper, I do

consider aggregation of the viability subscale theoretically justified, as issues dealt with at the interface between groups are interests relevant for groups as a whole, and not interpersonal issues (Brett & Rognes, 1986).

*Internal homogeneity and Intercorrelations.*

Table 18

## Intercorrelations Among Study Variables at Group Level

|                                  | M    | Sd  | 1.  | 2.     | 3.   | 4.   | 5.   | 6.     | 7.     | 8.     | 9.     | 10.    | 11.  | 12.    | 13.  |
|----------------------------------|------|-----|-----|--------|------|------|------|--------|--------|--------|--------|--------|------|--------|------|
| 1. Intergroup trust              | 3.65 | .54 | .87 | -.78** | -.16 | .31* | .13  | -.73** | -.69** | -.34*  | -.49** | .78**  | .13  | .68**  | .34* |
| 2. Relationship conflict         | 2.02 | .65 |     | (53)   | .17  | -.14 | .11  | .75**  | .74**  | .48**  | .50**  | -.68** | -.15 | -.51** | -.27 |
| 3. Contending                    | 1.89 | .42 |     |        | (53) | (53) | (53) | (53)   | (47)   | (53)   | (47)   | (53)   | (39) | (47)   | (39) |
| 4. Problem solving               | 3.65 | .37 |     |        | .64  | .05  | -.01 | -.08   | -.13   | .12    | .33*   | -.05   | -.07 | .03    | .05  |
| 5. Team effectiveness            | 3.83 | .38 |     |        |      | (53) | (53) | (53)   | (47)   | (53)   | (47)   | (53)   | (39) | (47)   | (39) |
| 6. Transaction costs<br>(Time 1) | 2.21 | .61 |     |        |      | .68  | .03  | -.10   | -.20   | .10    | .07    | .37**  | .00  | .24    | .15  |
| 7. Transaction costs<br>(Time 2) | 2.17 | .62 |     |        |      |      | .86  | -.27   | -.25   | -.38** | -.14   | .36**  | .26  | .36*   | .16  |
|                                  |      |     |     |        |      |      |      | (53)   | (47)   | (53)   | (47)   | (53)   | (39) | (47)   | (39) |
|                                  |      |     |     |        |      |      |      | .80    | .76**  | .43**  | .53**  | -.55** | -.21 | -.57** | -.28 |
|                                  |      |     |     |        |      |      |      |        | (47)   | (53)   | (47)   | (53)   | (39) | (47)   | (39) |
|                                  |      |     |     |        |      |      |      |        | .81    | .34*   | .36*   | -.46** | -.12 | -.48** | -.18 |
|                                  |      |     |     |        |      |      |      |        | (47)   | (47)   | (47)   | (47)   | (34) | (47)   | (34) |



|  |      |      |            |               |              |               |              |             |
|--|------|------|------------|---------------|--------------|---------------|--------------|-------------|
| 8. Viability (Time 1)                                | 1.23 | 1.09 | <b>.77</b> | <b>.44**</b>  | <b>-.34*</b> | <b>-.20</b>   | <b>-.29</b>  | <b>-.09</b> |
| 9. Viability (Time 2)                                | 1.20 | 1.23 | (47)       | (53)          | (39)         | (47)          | (39)         |             |
| 10. Intergroup<br>productivity (self,<br>Time 1)     | 3.36 | .52  | <b>.62</b> | <b>-.40**</b> | <b>-.12</b>  | <b>-.43**</b> | <b>-.12</b>  |             |
|  |      |      | (47)       | (34)          | (47)         | (34)          | (34)         |             |
| 11. Intergroup<br>productivity (external,<br>Time 1) | 3.14 | .94  |            | <b>.90</b>    | <b>.28</b>   | <b>.68**</b>  | <b>.55**</b> |             |
|  |      |      | (39)       | (47)          | (39)         | (47)          | (39)         |             |
| 12. Intergroup<br>productivity (self,<br>Time 2)     | 3.18 | .55  |            | <b>.96</b>    | <b>.30</b>   | <b>.64**</b>  |              |             |
|  |      |      | (34)       | (39)          | (34)         | (39)          |              |             |
| 13. Intergroup<br>productivity (external,<br>Time 2) | 3.35 | .65  |            | <b>.91</b>    | <b>.39*</b>  |               |              |             |
|  |      |      | (34)       |               |              |               | (34)         |             |
|  |      |      |            |               |              |               | <b>.89</b>   |             |

*Note.* *n* in parentheses; Cronbach's alpha on the diagonal of autocorrelations in bold; \*  $p < .05$ ; \*\*  $p < .01$ ; \*  $p < .001$

**Internal homogeneity.** Table 18 shows that Cronbach's Alphas are, with the exception of viability (Time 2;  $\alpha = .62$ ), clearly above values of .70, a value that has been judged as modest (Nunnally & Bernstein, 1994, p. 265), suggesting that the subscales have acceptable to good internal consistencies. Self and external ratings of intergroup effectiveness at Time 1 and Time 2 are moderately positive correlated ( $r_{\text{intergroup productivity Time 1 (self and external)}} = .28, p < .10$ ;  $r_{\text{intergroup productivity Time 2 (self and external)}} = .39, p < .05$ ), providing moderate further evidence for the construct's consensual validity. Studies of managers have reported even lower correlations of self- and supervisor judgements (average  $r = .19$ , Conway & Huffcutt, 1997). What might have prevented higher Intercorrelations is that self-report measures may have been more prone to self-serving biases, while external ratings may represent more objective estimations. As expected, some of the three intergroup effectiveness sub scales are significantly intercorrelated, suggesting a super ordinate factor of intergroup effectiveness. Intercorrelations that were void of common source variance, i.e. correlations between self-report data and external ratings, however, are predominantly non-significant. Thus, future research would be needed to find out whether a superordinate factor of intergroup effectiveness does exist. With the exception of viability ( $r = .44, p < .01$ ), all subscales have reasonable stability coefficients above .60. The stability of the viability subscale might be an underestimation of the real stability, as due to the scale's relatively low alpha coefficient (cf. Nunnally & Bernstein, 1994, p. 258).

**Intercorrelations.** Table 18 displays Intercorrelations of study variables. Information about the temporal stability of the subscales is provided by autocorrelations between subscales at Time 1 and Time 2. The consistently lower correlations between predictor variables and externally rated intergroup effectiveness in comparison to self rated intergroup effectiveness indicates that correlations may be inflated due to common method variance. Especially the very high correlations of transaction costs (Time 1) with relationship conflict and intergroup trust ( $r = .74$  and  $-.73, pps < .01$ . respectively) may question the constructs'

discriminant validity. In order to correct these correlations from biases (e.g., hypothesis guessing and cognitive consistency effects; Podsakoff et al., 2003), I controlled for common source variance (cf. Beersma & De Dreu, 1999) by randomly splitting individuals of each team in alternating order into two groups, and subsequently aggregating responses from both groups per team. Then I correlated responses from both groups across all teams. The split sample correlations between transaction costs (Time 1) and intergroup trust were then reduced to -.61 ( $p < .001$ ), and between transaction costs and relationship conflict to .63 ( $p < .001$ ).

As Intercorrelations are still considerable, and cross-loadings have been found within the exploratory factor analysis in the preceding section, this still questions whether transaction costs represent an independent factor. Therefore I conducted confirmatory factor analysis in order to test whether a.) two factor models (transaction costs and trust / transaction costs and relationship conflict as separate factors) provide a good model fit, and b.) whether the two-factor models are superior to one-factor models with transaction costs and trust/relationship conflict collapsed.

A 2-factor model with transaction costs and trust as separate but correlated factors ( $\chi^2 = 27.65$ ,  $df = 19$ ;  $TLI = .98$ ;  $CFI = .99$ ) fitted the data well. It also fitted the data significantly better than did a 1-factor model with transaction costs and trust collapsed ( $\chi^2 = 129.89$ ;  $df = 20$ ;  $TLI = .77$ ;  $CFI = .87$ ;  $\Delta\chi^2(\Delta df) = 102.24(1)$ ;  $p < .001$ ), suggesting both scales are independent. However, results were less supportive if transaction costs and relationship conflict were tested for discriminant validity. A 2-factor model with transaction costs and relationship conflict as separate but correlated factors ( $\chi^2 = 247.65$ ,  $df = 34$ ;  $TLI = .73$ ;  $CFI = .83$ ) fitted the data poorly, even though the 2-factor model was superior to the 1-factor model collapsing both scales ( $\chi^2 = 331.59$ ;  $df = 35$ ;  $TLI = .64$ ;  $CFI = .77$ ;  $\Delta\chi^2(\Delta df) = 83.94(1)$ ;  $p < .001$ ). In conclusion, poor single model fit in combination with the aforementioned cross-loadings in the exploratory factor analysis, and substantial split-sample intercorrelations



between relationship conflict and transaction costs suggest transaction costs does not represent a separate factor, and will therefore be excluded from further analysis.

## 6.4 DISCUSSION

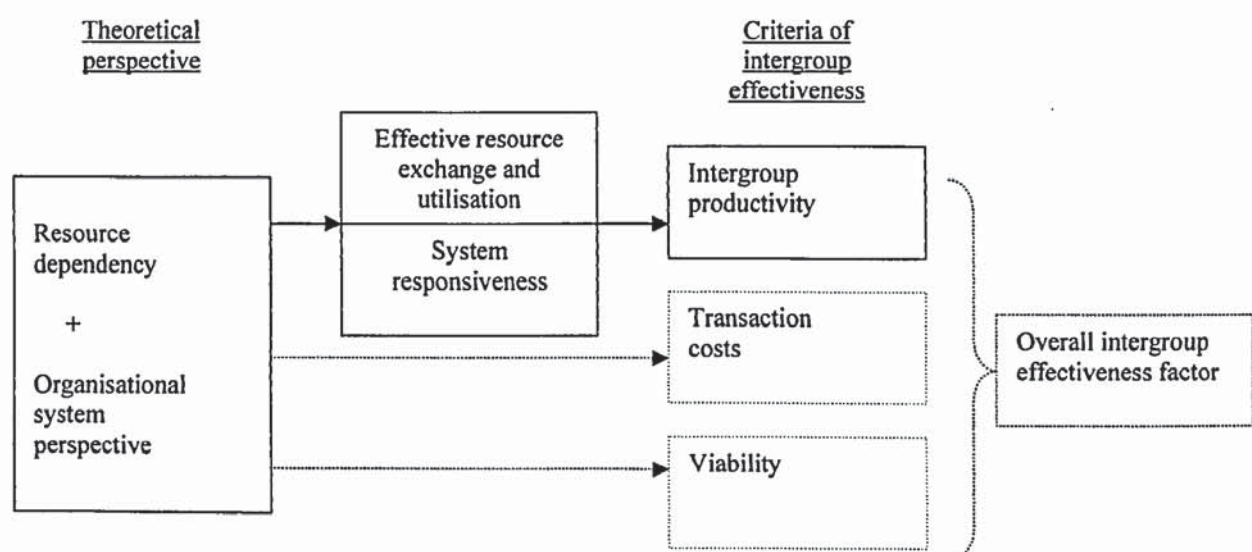
I argued in this paper that existing criteria describing effective intergroup relations are deficient. In particular, I disagreed that the absence or successful management of intergroup conflict would suffice to describe effective intergroup relations. Instead, I postulated that intergroup effectiveness can best be described by four alternative outcome criteria conceptually unrelated to intergroup conflict and alternative constructs. I examined the psychometric properties of a scale measuring these criteria. The psychometric properties supported its validity and reliability in many aspects. Support for the four-factor structure was limited. CFA suggested that the four-factor model fits the data very well and better than alternative models. However, both exploratory factor analysis and correlational analysis yielded that two of the sub scales, system responsiveness and resource exchange, may rather represent a single factor measuring intergroup productivity. *Consensual validity* was supported by high  $r_{wg(j)}$  values, tentatively supported by moderate positive correlations of self with external ratings, and high interrater agreements of a sub sample of four team dyads. With the exception of viability, subscales displayed considerable stability over time.

Support for *discriminant validity* was controversial. Factor analysis using individual level data distinguished intergroup effectiveness from measures of team effectiveness, intergroup conflict, intergroup behaviour, and intergroup attitude. Group level analysis, however, yielded mixed results. On the one hand, correlational analysis at team level showed that, even though intergroup effectiveness sub scales were correlated with other scales, intergroup effectiveness remained a distinct construct. Similarly, greater variation between than within teams for all three sub scales suggests that the construct has discriminable validity

across groups. On the other hand, ICC1 and ICC2 indices led to different conclusions whether discriminable validity for viability (Time 1) was sufficient to justify aggregation of data at group level. I discussed how sample characteristics, in particular that the teams are nested within a limited sample of very similar organisations, may have caused such a restriction in variance across teams. Most problematic was the transaction cost subscale, as it appeared not to be independent from relationship conflict between groups. Figure 18 represents a revised model of intergroup effectiveness based on these empirical findings. Changes to the theoretical model presented previously are as follows. First, the proposed theoretical positions are now collapsed, as participants don't happen to differentiate items developed from both perspectives. Second, both subscales resource exchange and utilisation and system responsiveness now present a single subscale. Third, as suggested by the dotted lines, the transaction costs subscale requires further conceptual work. Fourth, the viability subscale needs further development. Fifth, future research is needed to clarify whether a superordinate factor of intergroup effectiveness exists.

**FIGURE 18**

**An Empirical Model of Criteria of Intergroup Effectiveness**



*Note.* Dotted lines indicate mixed empirical support.



Overall, with the exception of the transaction cost subscale, I presented a theory driven, short, but parsimonious measure of intergroup effectiveness. Among its strengths is certainly its clear demarcation from related constructs, as well as its (with restrictions for the viability subscale) acceptable to very good psychometric properties. Its independence from intergroup conflict in particular indicates how little is known so far about the concept of intergroup effectiveness. Future studies may investigate whether the same factors are distinguishable with samples comprising groups from a diverse range of organisations. Also, the measure is of great utility for organisational research, as it is short and can easily be administered within a larger survey.

The construct of intergroup effectiveness represents an alternative outcome of organisational conflict, hitherto ignored by conflict researchers, which is built upon boundary spanners' and line managers' subjective value judgements of effective cross group working. The disruptive effects of intergroup conflict on aspects of intergroup effectiveness have been indicated and discussed, but not properly measured (e.g., Lawrence & Lorsch, 1967). Of particular interest may be under which conditions intergroup conflict positively predicts intergroup effectiveness. Intergroup conflict, in contrast to intragroup conflict, has predominantly been seen as detrimental for organisations, with a few exceptions focusing on beneficial aspects as well (see Walton & Dutton, 1969; Erev et al., 1993; Putnam, 1997). As I provided evidence for a measure that is conceptually different from intergroup conflict, it is now possible to investigate the effects of intergroup conflict on intergroup effectiveness, as well as potential moderators of this relationship. Similarly, the effect of within group conflict on intergroup effectiveness may be examined within the social identity theory or alternative frameworks, like the carryover effect (Keenan & Carnevale, 1989).



## **Chapter 7: The Relationship Between Intergroup Competition and Longitudinal Change in Team Working Effectiveness**

### **7.0 CHAPTER SUMMARY**

This chapter draws upon a 3-phase repeated measures design over 10 months to examine the relationship between intergroup competition and longitudinal change in team working effectiveness (i.e., both group and intergroup effectiveness). I examine the moderating effect of both structural (resource interdependence) and behavioural (negotiation style) variables. As regards group outcomes, results revealed that the relationship between intergroup competition and group performance was contingent upon both resource interdependence and boundary spanners' negotiation style: Intergroup competition was more positively related to change in group performance if resource interdependence between groups was low rather than high. Similarly, intergroup competition was positively related to change in group performance if group boundary spanners used a problem solving approach to conflict management, but negatively if an avoiding management style was used. As regards intergroup outcomes, competition was positively related to change in intergroup productivity, if group boundary spanners' used an active negotiation style (problem solving or contending), but negatively if conflicts were avoided.

## **7.1 INTERGROUP COMPETITION AND TEAM WORKING EFFECTIVENESS IN THEORY AND PRACTICE**

Organisations frequently reward work groups for their group effectiveness, rather than for the maintenance and development of productive lateral relationships (Hartley, 1996). Similarly, groups may compete with each other over scarce resources, and management may even stimulate intergroup competition by making group rewards contingent to intergroup performance rankings. As a consequence, competitive and disharmonious intergroup relations may develop, which – given that groups are functionally interdependent – may have effects on both group and intergroup effectiveness, being the latter defined as the effectiveness with which dyads of groups perform joint tasks. It is relevant to analyse both group and intergroup effectiveness, because what might be helpful for group effectiveness, might actually be detrimental for intergroup effectiveness, and vice versa. For instance, teams within this research were to integrate their diversified expertise and efforts to jointly treat and care for patients. Even though a group may display good single group performance, patient treatment may suffer if patients do not receive coordinated treatment from different health care groups.

Interdependencies between organizational groups have hardly received any attention in extant theory, even though researchers agree that they represent an important aspect of a group's performance environment (Mathieu et al., 2001). Some research has investigated how aspects of intergroup relations relate to within group processes. A prominent example may be the relationship between intergroup conflict and within group cohesion (e.g., Labianca et al., 1998). Others tried to predict intergroup relations by means of both individual and group level constructs. For instance, research within the realm of social identity theory investigated how group status relates to intergroup attitudes within the context of an organizational merger (e.g., Terry & Callan, 1998). Yet others examined relationships between and among aspects of intergroup relations. For example, research guided by realistic group conflict theory looked

at how intergroup competition relates to intergroup attitudes (e.g., Brown et al., 1986; Sherif, 1966).

Yet intergroup relations appear to be relevant for effectiveness outcomes both within and between organizational groups (cf. Brett & Rognes, 1986; Mathieu et al., 2001). For example, teams in this sample needed to cooperate across group boundaries for both resources required to meet their group targets (group effectiveness), as well as for the treatment of patients that required the concerted efforts of different health care groups (intergroup effectiveness). Thus, team working effectiveness in organizations does not only include within-group effectiveness, but should in fact also embrace the effectiveness with which dyads or sets of groups perform their collaborative tasks. Empirical studies examining the effect of organizational intergroup relations on group performance effectiveness are scant (Guzzo & Shea, 1992; Mulvey & Ribbens, 1999). Similarly, the relationship between intergroup relations and intergroup performance outcomes beyond intergroup attitudes and cognitions has hardly been examined (van Knippenberg, 2003).

The purpose of this chapter is thus to examine how competition between groups predicts change in both group and intergroup effectiveness. I extend existing research in the following ways. First, I develop a theoretical framework about how intergroup competition may affect team working effectiveness. Second, I examine main effects as well as structural and behavioural moderators of the relationship between intergroup competition and team working effectiveness within a longitudinal design.

## **7.1 INTERGROUP COMPETITION AND TEAM WORKING EFFECTIVENESS**

### **7.1.1 Intergroup Competition**



If intergroup conflict has been investigated as an independent variable, then mostly in the form of intergroup competition. Yet researchers refer to intergroup competition in different ways (see also discussion chapter 1). De Dreu et al. (1999), for instance, refer to intergroup competition as conflict over resource issues, suggesting scarcity of shared but limited resources as the basis of competition (cf. Kramer, 1991). Conversely, social identity theorists refer to competition as social competition, which aims to enhance status or self-esteem (e.g., Tajfel & Turner, 1979). The work of others suggests to think of intergroup competition as competitive negotiation behaviour between group representatives (e.g., Lawrence & Lorsch, 1967). Finally, interdependence theorists refer to competition as (either objective or subjective) outcome or goal interdependence, such that one party's gain is another party's loss (Kelly, 1984; Deutsch, 1949; Tjosvold, 1998). These theoretical perspectives may in fact be complementary rather than mutually exclusive, and although clearly distinguishable in theory, they are highly interrelated in practice. For example, if two groups find themselves in conflict over resources, they likely perceive their goals to be negatively interlinked, behave competitively, and social competition between groups may be fostered. Drawing upon the theory of competition and cooperation (Deutsch, 1949, 1973; Tjosvold, 1998), I conceptualise intergroup competition as group members' perceptions of antagonistic goals, thereby distinguishing it from other aspects of conflict, such as conflict behaviour.

### **7.1.2 Team Working Effectiveness**

In adopting an inclusive approach to team working, I argue that team working effectiveness embraces both group effectiveness and intergroup effectiveness. Following predominant models of work group effectiveness comprising both group performance and social criteria (Gladstein, 1984; Hackman, 1987), I conceptualise group effectiveness as the

extent to which groups meet their performance standards, as well as group members' satisfaction with their group. The intergroup effectiveness concept used within this chapter embraces both intergroup productivity and viability (see chapter 6, for details). The former constitutes the extent to which groups effectively exchange and make use of each other's resources, as well as the extent to which groups effectively cooperate on tasks that require the concerted efforts of different groups (cf. Brett & Rognes, 1986; Mathieu et al., 2001; van de Ven & Ferry, 1980). The latter refers to whether both groups honour each other's responsibilities and commitments (cf. van de Ven & Ferry, 1980).

## **7.2 THE RELATIONSHIP BETWEEN INTERGROUP COMPETITION AND TEAM WORKING EFFECTIVENESS**

### **7.2.1 Intergroup Competition and Group Effectiveness**

*Intergroup competition and models of work group effectiveness.* Intergroup competition, as an aspect of intergroup relations, is usually not explicitly incorporated into models of work group effectiveness, most of which adopt an “input-process-output” framework (McGrath, 1964). From a theoretical perspective, intergroup relations could be integrated as an input variable, a group process variable, and a moderator of the group process – group effectiveness relationship. Nieva, Fleishman and Rieck (1978), for example, acknowledge that most groups are part of a larger organizational system, which affects group membership, group structure, and group procedures. Thus, intergroup relations could be subsumed under the authors' “external conditions” category, which functions as a *group input*. Similarly, Campion and colleagues (Campion, Medsker, & Higgs, 1993; Campion, Papper, & Medsker, 1996) subsume cooperation between groups (as flip side of competition) within the organizational context category that directly affects group effectiveness (cf. Salas,



Stagl, & Burke, 2004). Complementary, Gladstein (1984) encompasses group members' external boundary spanning activities as an aspect of (externally directed) *group processes*, which affect group effectiveness contingent upon aspects of the group task. Finally, Hackman's (1987) model implies that intergroup relations could additionally function as a *moderator* of the group process – group outcome relationship. The model incorporates the sufficiency of material resources (frequently supplied by other groups) as a necessary condition for group processes to result in group effectiveness.

With the exception of Campion et al. (1993), none of those models in particular refer to the concept of intergroup competition in any further detail. Thus, it is deemed more fruitful to revert to alternative theoretical frameworks that more explicitly focus on competition.

***Alternative frameworks of intergroup competition.*** Researchers have demarcated intergroup competition from interpersonal competition, as it embraces both cooperative (within group cooperation) and competitive (between group competition) aspects (Stanne et al., 1999; Tauer & Harackiewicz, 2004). Consequently, investigating the link between intergroup competition and group effectiveness requires to focus on intergroup specific rather than general theories of competition. I suggest two competing theoretical frameworks:

First, realistic conflict theory (Sherif, 1966) proposes conflictual intergroup attitudes and behaviours reflect “real” conflicts of interest between groups. To pursue the own group's interest in competition, group members foster interaction and collaboration, and develop strong within-group loyalty and cohesiveness. Both motivational and structural processes, such as enhanced effort and interaction among group members, were discussed to convey these effects (Brown, 1988). According to this perspective, intergroup competition and relationship conflict should *enhance* group performance and group members' satisfaction with their group.

Contrary, the resource-dependency perspective (cf. Pfeffer & Salancik, 1978) suggests that competition between organizational groups is a threat to group effectiveness, as groups in



conflict restrain each other from valuable resources, support and information (e.g., Mohrman et al., 1995). Other mechanisms by which intergroup competition may be negatively related to within group processes have been discussed: For instance, Labianca et al. (1998) argue social networks may represent conduits for negative affective relationships through which conflictual relations “spill over” across group boundaries, providing a hostile, contagious frame of reference (cf. Alderfer, 1987; Keenan & Carnevale, 1989). Following this rationale, intergroup competition and relationship conflict should *reduce* both group performance and group members’ satisfaction with their group.

**Empirical evidence.** Studies examining the relationship between *intergroup competition and group processes* reported both functional and detrimental effects (Guzzo & Shea, 1992; Tajfel, 1982). Experimental research within the realm of social identity theory revealed that competition between groups enhances within-group loyalty, cohesion, and identification (Tajfel, 1978). Similarly, the introduction (and even anticipation) of competition between groups led to within-group loyalty and cohesiveness of groups of boys in Sherif’s summer camps (Sherif, Harvey, White, Hood, & Sherif, 1961). These effects are not restricted to experimental and quasi-experimental research: Likewise, Friedkin and Simpson (1985) found that competition among schools over resources was positively related to school principals’ identification with their subunit. Notably, research on organizational conflict also yielded contrary results: Labianca and colleagues (1998) conclude in their review of the intergroup conflict – group cohesiveness that results are inconsistent. The authors report that health care workers’ perceptions of intergroup conflict were related to *reduced* within group cohesiveness within a US health care organisation.

Many studies examined the link between *intergroup competition and performance related outcomes at the individual level*. In a meta-analysis predominantly drawing on experimental studies and studies in educational settings, Johnson et al. (1981) found within group cooperation combined with between group competition superior to interpersonal

competition and individualistic efforts in promoting achievement. Similarly, Okebukola (1985, 1986) found in experimental studies that intergroup competition can increase students' academic performance. Likewise, the combination of intergroup competition and within group cooperation led to higher individual performance and motivation in a series of experimental studies among basketball players, than within group cooperation and competition in isolation (Tauer & Harackiewicz, 2004). Those positive effects found in experimental research, however, do not generalize to organizations in a straightforward fashion: Walton and Dutton (1969) summarized consequences of inter-unit conflict identified in early studies, some of which confounding intergroup competition with other aspects of intergroup conflict. Amongst the negative outcomes were psychological strain, turnover of personnel, and decrease in individual performance. Positive consequences included provision of checks and balances, and motivation through competition. Rahim (2001), however, questions the validity of those early studies.

Studies explicitly looking at the relationship between *intergroup competition and group effectiveness* are scant. Julian (1967) found in an experimental setting that cooperative undergraduate student groups in competition with other groups had a higher increase of quality and quantity of group output than groups under collaborative conditions. Mulvey and Ribbens (1999) similarly revealed in an experimental study that intergroup competition increased student groups' efficacy, productivity, and decreased inefficiency. Erev et al. (1993) conducted a field experiment where groups in competition outperformed those that worked without reference to other groups in terms of the quantity of group output. Uncontrolled organizational studies, however, report competition among and between workgroups to be predominantly detrimental rather than beneficial for group effectiveness: Campion et al. (1996) found that intergroup cooperation and communication (as opposites of competition) were partially positively related with performance ratings from managers and employees. Mohrman and colleagues (1995), in a comprehensive study of group-based organizations



involving questionnaire and case study methods, found that intergroup competition is a major threat for group based working, because competing groups had greater commitment to the group's success than to the organization's success, which led to a higher concern on increasing their own resources at the expense of other groups.

In summary, evidence as to the effect of intergroup competition on group effectiveness is inconclusive: Notably, whilst experimental and field experimental research suggest performance enhancing effects, organizational research tends to support performance reducing effects. In line with the resource-dependency perspective, I expect a negative relationship between intergroup conflict and group effectiveness.

*H7: Intergroup competition negatively affects change in group effectiveness*

### **7.2.2 Intergroup Competition and Intergroup Effectiveness**

The relationship between intergroup competition and intergroup effectiveness may best be pictured by application of the theory of competition and cooperation (Deutsch, 1973; Tjosvold, 1998). The theory proposes that conflict processes and outcomes between parties (both individuals and groups) are a function of how parties perceive their goals to be interlinked. If individuals perceive their goals to be competitively (as opposed to cooperatively) linked, they are prone to develop dysfunctional interaction processes such as suspicion, hostility, and distrust, which in turn result in reduced collaborative outcome (Deutsch, 1949; Johnson & Johnson, 1989; Tjosvold, 1998).

To my knowledge, only one study related intergroup competition to intergroup performance outcomes other than cognitions or attitudes. Tjosvold et al. (1992) have shown that competitive interdependence between departments in a telecommunication company was



related to reduced performance of served common customers by means of destructive controversy.

In line with the proposed rationale, intergroup competition between groups should negatively affect the effectiveness with which both groups work together.

*H8: Intergroup competition negatively predicts change in intergroup effectiveness*

### **7.3 MODERATORS OF THE INTERGROUP COMPETITION – TEAM WORKING EFFECTIVENESS RELATIONSHIP**

The literature on organizational intergroup relations suggests that both structural and behavioural variables are related to intergroup conflict and effectiveness (e.g., Lawrence & Lorsch, 1967; McCann & Galbraith, 1981; Walton & Dutton, 1969). Thus, in the following section, the moderating effect of both resource interdependence and behavioural variables will be examined.

#### **7.3.1 Resource interdependence**

*Resource interdependence and group effectiveness.* Many conceptualizations of interdependence exist (e.g., Deutsch, 1949; Kelley, 1984; McCann & Ferry, 1979; Nauta & Sanders, 2000; Thompson, 1967; Victor & Blackburn, 1987). Johnson and Johnson (1989) distinguish interdependence of goals and outcomes (e.g., Deutsch, 1973; Kelley, 1984) from interdependence over means. Whilst the former describes the relationships among the mutual goals and rewards between two parties, the latter specifies the extent to which a task is structured in such a way that it requires the input of another party for completion. If parties are highly means interdependent, one party thus needs resources or input from the other in

order to accomplish its task. In the organizational literature, resource interdependence has considerable conceptual overlap with task interdependence (van de Ven & Ferry, 1980), degree of interdependence (Nauta et al., 2000), or means interdependence (Tauer & Harackiewicz, 2004). It has been discussed in terms of both its potential for and exacerbation of intergroup conflict (see Brett & Rognes, 1986; De Dreu et al., 1999; Kramer, 1991; McCann & Galbraith, 1981).

Stanne et al. (1999) argue that competition in combination with *resource independence* resembles *competitive co-action* as characterized by parties co-acting (as opposed to interacting) independent of each other on the same task with explicit rivalry. In that case, parties compete without being able to interfere with or hamper each others' task accomplishment, and the motivational effects of a challenging competition come to bear. The same effect might be expected for relationship tensions across groups, which might enhance motivation to outmatch the outgroup. Contrary, *resource interdependence* enables parties to interfere with each other's task completion in numerous ways; information prevention, resource restriction, and even actively working against each others' agenda might represent tolerated organizational "phenotypes" of hampering other groups' efforts.

Stanne et al. (1999) found in a meta-analysis including experimental and field studies, that the effect of competition relative to cooperation on levels of achievements on motor tasks was contingent upon resource interdependence: cooperation resulted in higher achievements for means-interdependent than means-independent tasks. The five studies of intergroup competition included in the meta-analysis, however, were categorized together with cooperative conditions, preventing me from drawing any differential conclusions; additionally, the minority of 24 field studies of this meta-analysis was restricted to class rooms, recreational and camp settings (as opposed to organizational settings). Within a series of experimental studies in basketball camps, Tauer and Harackiewicz (2004) investigated the effect of intergroup competition and within group cooperation on intrinsic motivation and



performance on a means-independent individual task (basketball–shooting). The combination of intergroup competition and within group cooperation consistently led to higher levels of intrinsic motivation and performance in 2 out of 3 studies. However, sample selection (basketball is a competitive sport, likely to attract competitive people), non-organizational setting, and the fact that no means-interdependent tasks were used for comparison purposes may limit the generalisability of study findings to organizational settings.

The hitherto unexamined moderating effect of resource interdependence between organizational groups on the intergroup competition and group effectiveness relationship would allow both a reconciliation of theoretical positions, and an integration of divergent findings from experimental studies (being suggestive of performance enhancing effects) and organizational studies (being suggestive of performance reducing effects).

*H9: Resource interdependence moderates the relationship between intergroup competition and group effectiveness: If teams are resource-interdependent with other teams, intergroup competition negatively predicts change in group effectiveness. If teams are resource-independent, intergroup competition positively predicts change in group effectiveness.*

**Resource interdependence and intergroup effectiveness.** If intergroup effectiveness rather than group effectiveness is the outcome, resource interdependence may have an opposite moderating effect: If groups find themselves in competition, but are means interdependent, i.e., depend upon each other for the provision of valuable resources, being accountable for working toward a common effectiveness outcome may refrain them from hampering each other's efforts. Instead, resource interdependence may urge groups to overcome controversies resulting from negative interdependency, because both groups would not want to risk poor intergroup performance outcome for which both may be held ultimately



accountable. Similarly, through resource exchange, more channels for conflict resolution may be available, by which to overcome conflict issues and resolve misunderstandings. Finally, as both groups are acquainted with each other's procedures and agendas, cross-group cooperation and coordination may be facilitated. Contrary, if groups are means independent and find themselves in competition, there is little need to preserve harmony and be cooperative, potentially resulting in poor intergroup performance outcome.

*H10: Resource interdependence moderates the relationship between intergroup competition and intergroup effectiveness: If teams are resource-interdependent with other teams, intergroup competition positively predicts change in intergroup effectiveness. If teams are resource-independent, intergroup competition negatively predicts change in intergroup effectiveness.*

### 7.3.2 Negotiation Style

A Babel-like confusion of tongues exists regarding the denomination and classification of conflict behaviors (van de Vliert & Euwema, 1994). Most frequently used by conflict management researchers though is a conceptualization of four negotiation styles based on Dual Concern Theory (Blake et al., 1964; De Dreu et al., 2001; Pruitt & Rubin, 1986; Rahim, 1995; see chapter 1, for details). The theory suggests that a party's high or low concern for self and high or low concern for the other results in the four styles yielding, forcing, problem solving, and avoiding. There is some disagreement on whether compromising constitutes a fifth unique style (van de Vliert, 1997) or rather a form of problem solving (e.g., Pruitt & Rubin, 1986; cf. De Dreu et al., 2001). Many alternative conceptualizations of conflict behaviour exist. For instance, derived from Deutsch's (1973) theoretical framework, a two-factor model would suggest to collapse (a) problem solving and

accommodating and (b) Contending and avoiding. Additionally, Putnam and Wilson's (1982) analysis suggests a three factor model in which items of avoiding and accommodating would be grouped as a single factor, but contending and problem solving remain independent subscales.

In the light of this confusion, van de Vliert and Euwema (1994) suggest to integrate conflict management styles into higher-order dimensions. Such a strategy has a number of advantages. First, it allows researchers to examine conflict behavior along a continuum as opposed to it to four or five distinct strategies (DeChurch & Marks, 2001). Second, demonstrating how other typologies of conflict behavior map into higher order dimensions enables integration of prior research (DeChurch & Marks, 2001). Finally, conflict parties are more likely to follow combinations of these styles at once, than exhibiting a single style, and they also do alternate strategies during the course of negotiation episodes (e.g., Pruitt & Rubin, 1986). Van de Vliert and Euwema (1994) additionally argue that existing conceptualizations of conflict management confound independent and dependent variables, thereby hindering unambiguous observations and theoretical progress. To overcome this problem, the authors adopt agreeableness and activeness as more appropriate descriptions of conflict behaviors. The taxonomy subsumes Blake and Mouton's (1964) five styles under the two higher order categories agreeableness and activeness. The agreeableness dimension captures "the extent to which conflict behaviors make a pleasant and relaxed rather than unpleasant and strainful impression". The activeness dimension pictures "the extent to which conflict behaviors make a responsive and direct rather than inert and indirect impression" (van de Vliert & Euwema, 1994). If parties show low concern for self but high concern for the other, such behavior represents agreeableness. Conversely, high concern for self but low concern for the other represents activeness. Alternative meta-taxonomies have been suggested within the literature. For instance, Chanin and Schneer (1984) advocate a two-dimensional taxonomy with assertiveness and cooperativeness, which is conceptually linked to activeness



and agreeableness (DeChurch & Marks, 2001). Van de Vliert and Euwema (1994) empirically showed that this taxonomy suitably pictures avoiding, accommodating, compromising, problem solving, indirect fighting, plus two forms of direct fighting - issue fighting and outcome fighting. Following Nauta and Sanders (2000), active negotiation style embraces problem solving and contending, while passive negotiation style contains accommodating and avoiding. Similarly, agreeable negotiation style has been referred to as problem solving and accommodating, while disagreeable negotiation style contains contending and avoiding. Empirical support for the active and agreeable dimension mainly stems from studies on within group negotiation (DeChurch & Marks, 2001; cf. Lovelace, Shapiro, & Weingart, 2001), yet the conceptualization has also been applied to negotiation between representatives of different departments (Nauta & Sanders, 2000).

*Negotiation style and group effectiveness.* If groups find themselves in competition with other groups, group representatives may need to approach conflicting interests in an active way, in order to achieve optimal outcomes and resources for their own group.

In partial support of this position, empirical evidence suggests that problem solving negotiation of conflict issues between groups may result in better negotiation outcomes, more productive exchange, and thereby enhance group effectiveness. Blake and Mouton (1964), for example, found that through integrative or problem solving communication group representatives can create their relationships harmoniously and thereby arrive at higher quality solutions (Blake & Mouton, 1964). Similarly, as organizational groups frequently find themselves in commons dilemmas over a limited but shared pool of organizational resources (Kramer, 1991), group representatives need to compete at least to a certain extent for those resources in order to achieve optimal outcomes for their own groups.

Thus, I propose that intergroup competition will be more positively related to group performance, if group boundary spanners negotiate interface conflicts in an active (i.e.,



problem solving and contending) fashion, but less positively, if they negotiate them in a passive manner (i.e., accommodating and avoiding).

*Hypothesis 11: Group boundary spanners' negotiation style moderates the relationship between intergroup competition and change in group performance:*

*Hypothesis 11a.) The relationship will be more positive if group boundary spanners use a problem solving negotiation style.*

*Hypothesis 11b.) The relationship will be more positive if group boundary spanners use a contending negotiation style.*

*Hypothesis 11c.) The relationship will be less positive if group boundary spanners use an accommodating negotiation style.*

*Hypothesis 11d.) The relationship will be less positive if group boundary spanners use an avoiding negotiation style.*

On the other hand, *group members'* negotiations with outgroup members when encountering conflicts of interest may affect their satisfaction with their group. For instance, it could be that negative behavioural interactions across groups might spill over into dysfunctional within group interactions (cf. research on spill over effects; Keenan & Carnevale, 1989; Labianca et al., 1998), and thereby reduce satisfaction. However, from a social identity perspective, disagreeable behavioural interactions with outgroup members might enhance group satisfaction by means of enhancing within group loyalty and cohesion. Thus, if group members find their group in competition with another group, and use

disagreeable (i.e., contending and avoiding) negotiation styles, this might ameliorate their levels of group satisfaction by means of enhanced cohesion and loyalty. Conversely, use of agreeable (i.e., problem solving and accommodating) negotiation styles may buffer the satisfaction enhancing effect of intergroup competition. Thus, I propose that group members' negotiation style moderates the relationship between intergroup competition and group members' satisfaction with their group.

*Hypothesis 12: Group members' negotiation style moderates the relationship between intergroup competition and change in group satisfaction:*

*Hypothesis 12a.) The relationship will be more positive if group members use a contending negotiation style.*

*Hypothesis 12b.) The relationship will be more positive if group members use an avoiding negotiation style.*

*Hypothesis 12c.) The relationship will be less positive if group members use a problem solving negotiation style.*

*Hypothesis 12d.) The relationship will be less positive if group members use an accommodating negotiation style.*

***Negotiation style and intergroup effectiveness.*** If intergroup productivity rather than (within) group performance is the focus of interest, theory and evidence suggests problem solving negotiation of conflicting interests may similarly result in enhanced intergroup performance outcome. Lawrence and Lorsch (1967) conclude that interunit cooperation will

be more effectively achieved and overall performance will be higher to the extent that managers openly confront differences rather than smooth them over or force decisions. However, not all active negotiation styles may result in enhanced intergroup performance outcomes, in particular because research suggests that one party's conflict management strategies frequently are reciprocated by the other party (see Pruitt & Rubin, 1986; De Dreu et al., 1999). Thus, if group representatives find their groups in competition, and choose a contending approach to conflict management, this may likely result in reduced collaborative intergroup performance outcomes. Similarly, avoiding negotiation style, especially if reciprocated, might likely worsen the effect of intergroup competition on intergroup productivity, as unresolved issues might hamper effective coordination and cooperative work.

Thus, I propose that intergroup competition will be stronger related to intergroup productivity, if group boundary spanners negotiate interface conflicts in an *agreeable* (i.e., problem solving and accommodating) fashion, but weaker, if they negotiate them in a *disagreeable* (i.e., contending and avoiding) manner.

*Hypothesis 13: Group boundary spanners' negotiation style moderates the relationship between intergroup competition and change in intergroup productivity:*

*Hypothesis 13a.) The relationship will be more positive if group boundary spanners use a problem solving negotiation style.*

*Hypothesis 13b.) The relationship will be more positive if group boundary spanners use an accommodating negotiation style.*

*Hypothesis 13c.) The relationship will be less positive if group boundary spanners use a contending negotiation style.*



*Hypothesis 13d.) The relationship will be less positive if group boundary spanners use an avoiding negotiation style.*

Similarly, group representatives negotiating intergroup issues disagreeably, may worsen the intergroup relationship as a whole, jeopardizing efficiency in future collaborations, and resulting in unfulfilled intergroup responsibilities and commitments. In order to maintain a viable intergroup relationship that endures turbulences and overcomes intergroup competition, group representatives may need to revert to agreeable conflict communication styles. Thus, I propose that the relationship between intergroup competition and intergroup viability should be more positive, if group representatives choose agreeable rather than disagreeable negotiation styles.

*Hypothesis 14: Group boundary spanners' negotiation style moderates the relationship between intergroup competition and change in intergroup viability:*

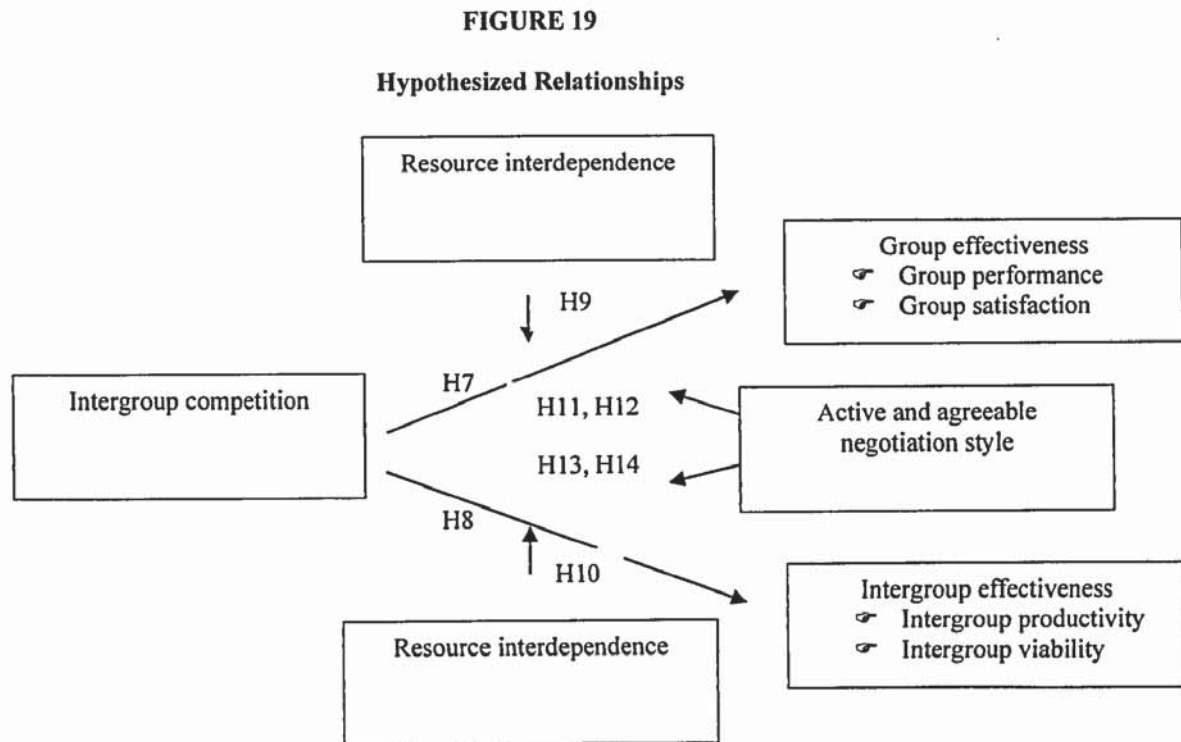
*Hypothesis 14a.) The relationship will be more positive if group boundary spanners use a problem solving negotiation style.*

*Hypothesis 14b.) The relationship will be more positive if group boundary spanners use an accommodating negotiation style.*

*Hypothesis 14c.) The relationship will be less positive if group boundary spanners use an avoiding negotiation style.*

*Hypothesis 14d.) The relationship will be less positive if group boundary spanners use a contending negotiation style.*

Figure 19 summarises the proposed relationships.



## 7.4 METHOD

### 7.4.1 Organizational Context, Procedure and Sample

The research procedure and sample description has been detailed in chapter 4. In essence, 57 teams of five Primary Care Trusts agreed to participate (teams were established, worked together interdependently, had three or more members, and worked together interdependently with at least one other group (Brett & Rognes, 1986; Alderfer, 1987); teams agreed upon one other team within the organisation (apart from management) they worked the

closest with, in order to warrant both interaction frequency and high interdependence between teams. Questions on intergroup relations referred to this other team. Out of 475 surveyed individuals, 276 staff belonging to 54 teams returned surveys (58%). After deletion of four teams who did not meet a selection rate of .32 (Dawson, 2003; chapter 4), the remaining sample of 53 groups (274 respondents) varied across service and administration groups. To avoid biases such as self-serving bias (Podsakoff et al., 2003), as well as common source variance, I asked groups to consent to the first author approaching the groups' line managers external to the groups, in order to obtain ratings of group performance. Forty-seven groups agreed, and a total of 42 external ratings at Time 1, Time 2 (after five months), and 27 ratings at Time 3 (after ten months) were obtained. Low response rate at Time 3 was due to two organisations not allowing conduction of a third wave. Drop out analysis revealed that one of the teams that did not agree had reservations about the researcher approaching their line manager, whilst six teams did not report to an external line manager, and could not identify an alternative suitable person outside the team. Three teams did not explain why they did not consent. In the remaining seven cases, the line managers did not provide ratings. Statistical drop out analyses contained two steps. First, following Goodman and Blum (1996), I conducted loglinear regression analysis onto a dichotomous variable (drop out/no drop out) at Time 2 and 3, in order to see whether intergroup competition predicted drop out. Neither at Time 2 (Wald coefficient = 2.32, ns) nor Time 3 (Wald coefficient = .60, ns) was competition related to drop out. Second, I carried out *t*-tests to assess whether teams with and without external ratings differed from each other on their levels of intergroup competition. The *t*-tests revealed no significant differences ( $t = .15$ , ns). Similarly, *t*-tests revealed no differences in levels of intergroup competition between the 16 teams without performance ratings at Time 3, and the 25 groups of which ratings at Time 3 were obtained ( $t = .39$ , ns). In conclusion, statistical drop out analysis provides additional support that drop out was unsystematic.



#### 7.4.2 Questionnaire Measures

**Intergroup competition.** I measured competition as group members' perceptions of antagonistic goals with four items adapted from Alper et al. (1998), for example, "Both teams have a win-lose relationship." Answers were given on 5-point scales ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alpha was .81.

**Resource interdependence.** I measured resource interdependence with a 4-item scale from van de Ven and Ferry (1980). Example items were "For *your team* to accomplish its goals and responsibilities, how much do you need the services, resources, or support from this other team?" and "For *this other team* to accomplish its goals and responsibilities, how much does it need the services, resources, or support from your team?". Cronbach's alpha was .90.

**Negotiation style.** I measured negotiation style with the 20-item version of the Dutch Test of Conflict Handling (De Dreu, Evers, Beersma, Kluwer, & Nauta, 2001; van de Vliert, 1997). An example item was "I concur with the other party." (avoiding sub scale). See the section treatment of the data for details on subscale homogeneity and psychometric properties.

Prior research suggests it is the group leaders rather than any member of the group who negotiates substantive issues between groups (Blake et al., 1964; Lawrence & Lorsch, 1967). I therefore used responses from group leaders to compute the indexes in most analyses. For the 11 leaderless groups, responses were taken from that group member who had the most work-related contact with the outgroup (cf. chapter 5). Even though group representatives' boundary spanning behaviours likely influence resource flow between groups (Gladstein, 1984), it will not affect group members' satisfaction. Therefore I chose responses from all group members for analysis with group member satisfaction as outcome variable.

**Group satisfaction.** I measured group satisfaction using a 3-item scale adapted from Wageman et al. (2005). An example item was “I am very satisfied with working in this team.” Cronbach’s alpha was .88 at Time 1, and .91 at Time 2.

**Intergroup viability.** I measured intergroup viability with the 2-item scale developed within this research project ranging from 1 (to no extent) to 5 (to a great extent), for example, “To what extent did your team carry out your responsibilities and commitments in regard to this other team?” (see chapter 6, for details). Cronbach’s alpha was .77 at Time 1, and .62 at Time 2.

### 7.4.3 External Ratings

**Group performance.** I measured group performance by ratings from the groups’ line managers external to the groups, using a 5-item likert scale (Vinokur-Kaplan, 1995). An example item was “To what extent do you feel that the (team’s name inserted) met the standards of quality expected by the Trust?”, ranging from 1 (not at all) to 5 (completely). Cronbach’s alpha was .86 at Time 1, .84 at Time 2, and .92 at Time 3.

**Intergroup productivity.** The 6-item intergroup productivity scale was developed within this research project (see chapter 6, for details). An example item was “To what extent did both teams work effectively together in order to respond to tasks or duties that emerged from working within the Trust (e.g., coordinating cross-team activities, assignment of organisational duties, etc.)?”, ranging from 1 (to no extent) to 5 (great extent).

### 7.4.4 Control Variables

Becker (in press) discusses the need to use control variables consistently to make study findings comparable. He recommends that if certain control variables were included in

some analyses but not others, or if some are treated differently than others in the same analyses, an explicit rationale for the differences should be given. Thus, I used the same set of control variables as in chapter 5, with the exception that I did not control for clarity of group boundaries. Though this concept is central for the test of social identity theories, it is less relevant for the test of intergroup competition as a predictor of team working effectiveness. I controlled for group size and group membership change, as team demographics were found to affect group effectiveness (e.g., Campion et al., 1993; 1996; Hackman, 1987). Group size was assessed by the number of names returned on the consent form. Group membership change was measured with a single item, asking “How many people have left your team during the past 5 months?”. A questionnaire item asked how long the team had been set up (response choices were less than 6 months, less than 1 year, between 1 and 2 years, and 2 years or more). I controlled for task interdependence as it has been linked to team performance (Wageman, 1995), by measuring the extent to which groups worked interdependently (for example, “Generating the outcome or product of this team requires a great deal of communication and coordination among members”, with two items from Wageman et al. (2005), ranging from 1 (very inaccurate) to 5 (very accurate). Variations in organizational affiliation were controlled ( $N-1$  dummy coded).

## **7.5 RESULTS**

### **7.5.1 Treatment of the Data**

Aggregation of data at the group level requires both a theoretical basis and empirical justification (Kozlowski & Klein, 2000). As intergroup competition is at least partially rooted in structural characteristics that concern the relationship between both groups as a whole (Tjosvold, 1988a). Resource interdependence similarly focuses on the relationship between



groups as a whole, and was therefore also aggregated. Intergroup viability similarly has been theorised as a group level outcome (see chapter 6). To empirically justify aggregation, I computed both interrater reliability coefficients to demonstrate consensual validity ( $Rwg(j)$ , James et al., 1984), and  $F$ -statistics of intraclass correlation coefficients (ICC1) to demonstrate discriminant validity (cf. Bliese, 2000). Coefficients justified aggregation the three scales to the group level (for intergroup competition,  $Rwg(j) = .82$ ; eta-squared = .20;  $F = 2.10$ ,  $p < .001$ ; for resource interdependence,  $Rwg(j) = .92$ ; eta-squared = .21;  $F = 2.11$ ,  $p < .001$ ; for intergroup viability Time 1,  $Rwg(j) = .83$ ; eta-squared = .07;  $F = 1.29$ ,  $ns$ ; for intergroup viability Time 2,  $Rwg(j) = .80$ ; eta-squared = .22;  $F = 2.00$ ,  $p < .001$ ). Group satisfaction as well as negotiation style were conceptualized and phrased as individual level constructs and therefore not aggregated.

Following De Dreu et al. (2001), and in line with the aforementioned rationale, CFA was used to examine whether negotiation style would best be captured by a one-factor model (participants do not differentiate between subscales), a two-factor model (problem solving + accommodating and contending + avoiding; cf. Deutsch, 1973), a three-factor model (avoiding and accommodating collapsed; Putnam & Wilson, 1982), a four-factor model (problem solving, yielding, contending and avoiding as separate factors; Pruitt & Rubin, 1986), or a five-factor model (four factor model plus compromising; van de Vliert, 1997).

All models with two or more factors allowed the factors to correlate, as suggested by dual concern theory (Blake et al., 1964).

TABLE 19

## Fit Indices of Confirmatory Factor Analysis for Negotiation Style

|                                 | $\chi^2$ | <i>df</i> | $\chi^2/df$ | RMSEA | CFI | TLI |
|---------------------------------|----------|-----------|-------------|-------|-----|-----|
| Null model                      | 693.46   | 120       | 5.78        | .17   | .00 | .00 |
| One-Factor model <sup>a</sup>   | 530.58   | 107       | 4.96        | .15   | .26 | .17 |
| Two-Factor model <sup>b</sup>   | 413.34   | 105       | 3.94        | .13   | .39 | .46 |
| Three-Factor model <sup>c</sup> | 299.00   | 102       | 2.93        | .08   | .68 | .58 |
| Four-Factor model <sup>d</sup>  | 230.23   | 98        | 2.35        | .07   | .79 | .71 |
| Five-Factor model <sup>e</sup>  | 433.68   | 160       | 2.71        | .08   | .70 | .60 |

*Note.*  $n = 198$ ; all models are correlated; CFI = comparative fit index; TLI = Tucker Lewis index; RMSEA = root mean square error of approximation; \*\*\* =  $p < .001$

<sup>a</sup>Difference one-factor and null-model:  $\Delta\chi^2(df) = 162.88(13)***$

<sup>b</sup>Difference two-factor and one-factor model:  $\Delta\chi^2(df) = 117.24(2)***$

<sup>c</sup>Difference three-factor and two-factor model:  $\Delta\chi^2(df) = 114.34(3)***$

<sup>d</sup>Difference four-factor and three-factor model:  $\Delta\chi^2(df) = 68.77(4)***$

<sup>e</sup>Difference five-factor and four-factor model:  $\Delta\chi^2(df) = 203.45(62)***$

Table 19 reveals that the four-factor model shows best model fit, being superior to the five-factor model ( $\Delta\chi^2(df) = 203.45(62)$ ;  $p < .001$ ), which comes closest. Despite comparative superiority, and a Chi square/degrees of freedom ratio of below five, CFI and TLI indices do not reach recommended levels of .90 (cf. chapter 6). Therefore I conducted exploratory factor analysis to examine whether cross loading items may have caused restricted discriminant validity of subscales.

**TABLE 20**  
**Principal Axis Factor Analysis of Self Report Data; Pattern Matrix, Oblique Rotation**

|  | Avoiding   | Problem<br>Solving | Conten-<br>ding | Compro-<br>mising | Yielding   |             |
|--|------------|--------------------|-----------------|-------------------|------------|-------------|
| <i>Accommodating items</i>   |            |                    |                 |                   |            |             |
| 1. I concur with the other party.  | .13        | .29                | -.07            | -.17              | .09        | -.01        |
| 2. I try to accommodate the other party.   | .11        | <u>.34</u>         | -.05            | .09               | <u>.37</u> | .07         |
| 3. I adapt to the other party's goals and interests.   | -.01       | .04                | -.00            | -.02              | <b>.45</b> | -.06        |
| 4. I give in to the wishes of the other party.   | .07        | <u>-.31</u>        | .03             | -.08              | <u>.48</u> | -.25        |
| <i>Avoiding items</i>  |            |                    |                 |                   |            |             |
| 5. I try to make differences look less severe.   | .08        | -.03               | -.01            | -.22              | .16        | -.47        |
| 6. I avoid confrontation about our differences.  | <b>.87</b> | .07                | -.02            | .09               | -.03       | .01         |
| 7. I avoid differences of opinion as much as possible.   | <b>.74</b> | -.19               | .02             | -.26              | -.00       | .07         |
| 8. I try to avoid confrontation with the other.  | <b>.78</b> | .11                | .00             | .07               | -.01       | -.09        |
| <i>Contending items</i>  |            |                    |                 |                   |            |             |
| 9. I do everything to win.   | .09        | -.08               | <b>.60</b>      | -.08              | -.01       | .04         |
| 10. I push my own point of view.   | -.16       | .07                | <b>.66</b>      | -.01              | -.00       | .01         |
| 11. I search for gains.  | -.03       | .10                | .18             | .10               | .01        | <b>-.59</b> |
| 12. I fight for a good outcome for myself.   | .06        | -.03               | <u>.49</u>      | .06               | .07        | <u>-.30</u> |
| <i>Problem solving items</i>   |            |                    |                 |                   |            |             |
| 13. I examine ideas from both sides to find a mutually optimal solution.                       | .05        | <b>.67</b>         | -.07            | .04               | -.18       | .03         |
| 14. I work out a solution that serves my own as well as other's interests as well as possible. | .17        | <b>.67</b>         | .21             | .08               | .14        | .08         |
| 15. I examine issues until I find a solution that really satisfies me and the other party.     | .02        | <b>.67</b>         | -.03            | -.08              | .08        | -.17        |
| 16. I stand up for my own and the other's goals and interests.                                 | -.15       | <b>.45</b>         | .23             | -.13              | -.15       | -.10        |
| <i>Compromising items</i>  |            |                    |                 |                   |            |             |
| 17. I emphasize that we have to find a compromise solution.                                    | -.12       | <b>.51</b>         | -.11            | -.10              | .08        | .04         |
| 18. I try to reach a middle-of-the-road solution.  | .08        | .05                | .08             | -.22              | <u>.63</u> | <u>.53</u>  |
| 19. I insist we both give in a little.   | -.05       | .05                | .08             | <b>-.68</b>       | -.09       | -.07        |
| 20. I strive whenever possible towards a fifty-fifty compromise.                               | .08        | .08                | -.00            | <b>-.73</b>       | .14        | .11         |

*Note.*  $n = 198$ ; Total Variance Explained: 61.84%; Items loading above .30 in bold; cross loadings are underlined

Inspection of Table 20 reveals that, even though subscales can be identified as separate factors, several items show considerable cross loadings. In support of the four factor model, two items of the compromising subscale cross load on other factors, questioning whether compromising represents a single factor. Additionally, two items of the



accommodating subscale cross load with the problem solving subscale.

Reliability analysis was conducted for further analysis. Initial reliabilities for accommodating were .39, for problem solving .68, for contending .64, for avoiding .72, and compromising .65, suggesting that only avoiding met the criterion of .70 as a minimal threshold (Nunnally & Bernstein, 1994). Based on alpha statistics, deletion of item 5 (Table 20) allowed enhancement of the alpha for the avoidance scale to .83. However, as reliability is a function of both the homogeneity of the theoretical construct and the number of items per subscale (Bortz, 1993), researchers have used scales with reliabilities around .65 (e.g., Zhou, 2003).

In conclusion, the accommodating subscale was deleted from further analysis, because both exploratory factor analysis revealed cross loadings, and Cronbach's alpha indicated homogeneity was too low. The compromising subscale was deleted for further analysis, because confirmatory factor analysis suggested superiority of a four-factor model, exploratory factor analysis revealed items show cross loadings, and Cronbach's alpha was at best modest.

The resulting three-factor model (problem solving, contending, and avoiding) was subjected to confirmatory factor analysis again, and yielded reasonable absolute fit, and best comparative fit relative to the other models ( $\Delta\chi^2 = 101.87$ ,  $df = 51$ ; CFI = .88; TLI = .80; RMSEA = .07).

TABLE 21  
Descriptive Statistics and Correlations at Group and Individual Level

|                                    | Mean | s.d. | 1 | 2    | 3      | 4    | 5     | 6    | 7     | 8     | 9     | 10    |
|------------------------------------|------|------|---|------|--------|------|-------|------|-------|-------|-------|-------|
| 1. Organization 1 <sup>b</sup>     | .28  | .45  | 1 | -.16 | -.38** | -.06 | -.19  | .13  | -.22  | .11   | .20   | .00   |
| 2. Organization 2 <sup>b</sup>     | .02  | .14  |   | 1    | -.30*  | -.05 | -.19  | -.03 | -.19  | -.24  | .09   | .03   |
| 3. Organization 3 <sup>b</sup>     | .17  | .38  |   |      | 1      | -.12 | .55** | .24  | .63** | -.01  | .32*  | .33*  |
| 4. Organization 4 <sup>b</sup>     | .42  | .50  |   |      |        | 1    | .05   | .09  | -.01  | -.31* | .05   | -.05  |
| 5. Group membership change         | 1.23 | 1.09 |   |      |        |      | 1     | .20  | .44** | .12   | .26   | .48** |
| 6. Group age                       | 3.61 | .59  |   |      |        |      |       | 1    | .11   | -.00  | .14   | -.04  |
| 7. Group size                      | 8.47 | 5.85 |   |      |        |      |       |      | 1     | -.02  | .36** | .26   |
| 8. Group interdependence           | 4.15 | .57  |   |      |        |      |       |      |       | 1     | -.14  | -.03  |
| 9. Intergroup competition          | 2.33 | .50  |   |      |        |      |       |      |       |       | 1     | .63** |
| 10. Relationship conflict          | 2.02 | .65  |   |      |        |      |       |      |       |       |       | 1     |
| 11. Resource interdependence       | 3.19 | .65  |   |      |        |      |       |      |       |       |       |       |
| 12. Problem solving                | 3.70 | .65  |   |      |        |      |       |      |       |       |       |       |
| 13. Contending                     | 1.93 | .62  |   |      |        |      |       |      |       |       |       |       |
| 14. Avoiding                       | 2.44 | .92  |   |      |        |      |       |      |       |       |       |       |
| 15. Group satisfaction Time 1      | 4.09 | .91  |   |      |        |      |       |      |       |       |       |       |
| 16. Group satisfaction Time 2      | 3.93 | 1.03 |   |      |        |      |       |      |       |       |       |       |
| 17. Group performance Time 1       | 3.85 | .55  |   |      |        |      |       |      |       |       |       |       |
| 18. Group performance Time 2       | 3.85 | .52  |   |      |        |      |       |      |       |       |       |       |
| 19. Group performance Time 3       | 3.67 | .68  |   |      |        |      |       |      |       |       |       |       |
| 20. Viability Time 1               | 3.35 | .49  |   |      |        |      |       |      |       |       |       |       |
| 21. Viability Time 2               | 3.21 | .63  |   |      |        |      |       |      |       |       |       |       |
| 22. Intergroup productivity Time 1 | 3.14 | .94  |   |      |        |      |       |      |       |       |       |       |
| 23. Intergroup productivity Time 2 | 3.35 | .65  |   |      |        |      |       |      |       |       |       |       |
| 24. Intergroup productivity Time 3 | 3.37 | .80  |   |      |        |      |       |      |       |       |       |       |

Note. <sup>a</sup> Cross level correlations among boundary spanners' negotiation style and group level variables above the diagonal of autocorrelations; *n* varies from 53 to 24 (intergroup productivity Time 3) for group level variables; <sup>b</sup> Dummy variable.

TABLE 21 (CONTINUED)

|                                    | 11    | 12   | 13   | 14   | 15     | 16     | 17   | 18    | 19     | 20     | 21     | 22    | 23    | 24    |
|------------------------------------|-------|------|------|------|--------|--------|------|-------|--------|--------|--------|-------|-------|-------|
| 1. Organization 1 <sup>b</sup>     | .04   | -.08 | .03  | .25  | .05    | .38*   | .14  | .07   | .21    | .21    | .01    | .36*  | .35*  | .13   |
| 2. Organization 2 <sup>b</sup>     | -.18  | -.18 | .20  | .08  | .16    | .24    | -.12 | -.13  | c      | -.17   | .20    | -.20  | -.38* | c     |
| 3. Organization 3 <sup>b</sup>     | .16   | .15  | -.01 | -.27 | -.10   | -.48** | -.28 | -.30  | -.57** | -.14   | -.34*  | -.25  | -.16  | -.44* |
| 4. Organization 4 <sup>b</sup>     | .01   | -.10 | .13  | -.17 | -.22   | c      | -.02 | .05   | c      | -.16   | -.10   | -.26  | -.34* | c     |
| 5. Group membership change         | .41** | -.09 | -.06 | -.16 | -.21   | -.39*  | -.12 | -.10  | -.38*  | -.04   | -.02   | -.20  | -.09  | -.32  |
| 6. Group age                       | .08   | .08  | -.02 | -.12 | -.06   | .05    | -.09 | -.01  | -.15   | .03    | -.07   | -.17  | .00   | .19   |
| 7. Group size                      | .13   | .09  | -.02 | -.22 | -.23   | -.51** | -.04 | -.13  | -.02   | -.21   | -.37*  | -.07  | -.05  | -.20  |
| 8. Group interdependence           | .15   | .09  | -.22 | -.06 | .20    | .20    | .09  | .07   | .14    | .33*   | .15    | .11   | .19   | .26   |
| 9. Intergroup competition          | .03   | -.14 | .18  | -.11 | -.36** | -.45*  | -.29 | -.21  | -.26   | -.40** | -.38** | -.13  | -.33* | -.38  |
| 10. Relationship conflict          | .29*  | -.06 | .08  | -.22 | -.23   | -.51** | -.09 | -.05  | -.29   | -.39** | -.20   | -.15  | -.27  | -.43* |
| 11. Resource interdependence       | 1     | -.25 | -.12 | .02  | -.02   | -.18   | .27  | .36*  | -.02   | .18    | .11    | -.06  | .24   | .04   |
| 12. Problem solving                |       | 1    | -.01 | -.06 | .15    | .23    | .01  | -.04  | .15    | .15    | .13    | -.10  | -.10  | .15   |
| 13. Contending                     |       |      | 1    | .00  | -.26   | -.27   | -.08 | .00   | .05    | -.01   | .08    | -.17  | -.13  | .07   |
| 14. Avoiding                       |       |      |      | 1    | .14    | .27    | .15  | .25   | .25    | .16    | .15    | .40*  | .07   | .24   |
| 15. Group satisfaction Time 1      |       |      |      |      | 1      | .59*   | .09  | .03   | .23    | .35*   | .27    | .06   | .06   | .27   |
| 16. Group satisfaction Time 2      |       |      |      |      |        | 1      | .27  | .11   | .32    | .27    | .26    | .06   | .04   | .73*  |
| 17. Group performance Time 1       |       |      |      |      |        |        | 1    | .80** | .60**  | .30    | .14    | .48** | .42** | .78** |
| 18. Group performance Time 2       |       |      |      |      |        |        |      | 1     | .54**  | .25    | .18    | .26   | .30   | .65** |
| 19. Group performance Time 3       |       |      |      |      |        |        |      |       | 1      | .25    | .17    | .47*  | .31   | .67** |
| 20. Viability Time 1               |       |      |      |      |        |        |      |       |        | 1      | .46**  | .22   | .51** | .41*  |
| 21. Viability Time 2               |       |      |      |      |        |        |      |       |        |        | 1      | .01   | .13   | .27   |
| 22. Intergroup productivity Time 1 |       |      |      |      |        |        |      |       |        |        |        | 1     | .64** | .42*  |
| 23. Intergroup productivity Time 2 |       |      |      |      |        |        |      |       |        |        |        |       | 1     | .58** |
| 24. Intergroup productivity Time 3 |       |      |      |      |        |        |      |       |        |        |        |       |       | 1     |

Note. <sup>a</sup> Cross level correlations among boundary spanners' negotiation and group level variables above the diagonal of autocorrelations;

<sup>b</sup> *n* varies from 53 to 24 (intergroup productivity Time 3) for group level variables; <sup>c</sup> Dummy variable; correlation could not be computed, because one of the variables is constant.



Scale characteristics and Intercorrelations of variables are shown in Table 21. The significant correlation between resource interdependence and relationship conflict ( $r = .29, p < .05$ ; Table 21) is in line with Nauta and Sander's (2000) note that highly interdependent work groups have more interaction, resulting in more conflicts. The significant relationship between resource interdependence and group performance at Time 2 ( $r = .36, p < .05$ ; Table 21) supports the view that groups in organizations interact in order to gain resources needed for task accomplishment (Brett & Rognes, 1986).

Intercorrelations between external ratings of group performance and intergroup productivity at Time 3 are substantial ( $r = .67, p < .001$ ), questioning the independence of both outcome variables. Therefore exploratory factor analysis was conducted to examine the degree to which both scales are independent from each other across the three measurement points. Table 22 shows that despite two items revealing cross loadings (and despite likely correlational inflation as to common source variance; Podsakoff et al., 2003), items can be clearly separated into two factors, and are therefore considered to be independent.

**TABLE 22**  
Principal Axis Factor Analysis of Line Managers' Team Working Effectiveness Ratings; Pattern Matrix, Oblique Rotation<sup>a</sup>

|  | Time 1                  |                   | Time 2                  |                   | Time 3                  |                   |
|--|-------------------------|-------------------|-------------------------|-------------------|-------------------------|-------------------|
|  | Intergroup Productivity | Group Performance | Intergroup Productivity | Group Performance | Intergroup Productivity | Group Performance |
| <i>Group performance items</i>   |                         |                   |                         |                   |                         |                   |
| 1. to what extent do you feel that the (team's name inserted) ... met the <i>standards of quality</i> expected by the Trust?   | .21                     | <b>.67</b>        | -.11                    | <b>.69</b>        | <u>.36</u>              | <u>.54</u>        |
| 2. ... met the <i>standards of quantity</i> expected by the Trust?   | .03                     | <b>.71</b>        | .20                     | <b>.60</b>        | -.02                    | <b>.92</b>        |
| 3. ... met the <i>standards of timeliness</i> expected by the Trust?   | .03                     | <b>.80</b>        | -.07                    | <b>.88</b>        | -.14                    | <b>.98</b>        |
| 4. ... met the <i>standards of implementation</i> expected by the Trust?   | -.05                    | <b>.87</b>        | -.02                    | <b>.82</b>        | .15                     | <b>.73</b>        |
| 5. ... had a <i>reputation for work excellence</i> within the Trust?   | -.08                    | <b>.80</b>        | .15                     | <b>.64</b>        | <u>.38</u>              | <u>.57</u>        |
| <i>Intergroup productivity items</i>   |                         |                   |                         |                   |                         |                   |
| 6. To what extent did both teams work effectively together in order to respond to <i>tasks or duties that emerged from working within the Trust</i> (e.g., coordinating cross-team activities, assignment of organisational duties, etc.)? | <b>.89</b>              | .04               | <b>.60</b>              | .10               | <b>.73</b>              | .14               |
| 7. To what extent did both teams <i>work effectively together</i> in order to provide better services to patients?   | <b>.85</b>              | -.02              | <b>.64</b>              | .23               | <b>.84</b>              | .04               |
| 8. To what extent did you feel the <i>relationship</i> between both teams was <i>productive</i> ?  | <b>.90</b>              | -.03              | <b>.75</b>              | .19               | <b>.80</b>              | .08               |
| 9. To what extent did both teams work effectively together in order to respond to <i>problems or flaws that emerged from working within the Trust</i> (e.g., staff or time shortage, etc.)?  | <b>.96</b>              | -.03              | <b>.87</b>              | -.01              | <b>.92</b>              | -.10              |
| 10. To what extent did both teams effectively <i>help each other out</i> if resources (e.g., time to invest, people or staff, support etc.) were needed?   | <b>.88</b>              | -.01              | <b>.74</b>              | -.11              | <b>.90</b>              | -.07              |
| 11. To what extent did both teams <i>make effectively use of each other's resources</i> (e.g., time to invest, people or staff, support etc.) in order to provide better patient care?   | <b>.86</b>              | .10               | <b>.90</b>              | -.20              | <b>.85</b>              | .05               |
| Total Variance Explained   | 72.03%                  |                   | 58.58%                  |                   | 73.60%                  |                   |

Note.  $n_{\text{Time 1 and Time 2}} = 41$  (group performance) and 39 (intergroup productivity)  
 $n_{\text{Time 3}} = 27$  (group performance) and 24 (intergroup productivity)  
 Items loading above .30 in bold; cross loadings are underlined

### 7.5.2 Hypotheses Testing

To enhance legibility, Tables 23 - 26 are placed at the end of this chapter. Hypotheses on group level outcomes (group performance, intergroup viability and productivity) were tested by conducting block entry multiple regression analyses (Tables 18, 19, and 20). I entered the control variables into the first block of the regression. Regressions on outcome variables at Time 2 and Time 3 also included the respective outcome variable at Time 1 in an additional block, to allow inferences about longitudinal change. The main effect model contained intergroup competition as the next Block 2 (model 1, Tables 24, 25, 26). Model 2 to 5 were used to test the contingency hypotheses. The interaction term (Block 3) was computed by the respective two predictor variables, which were centred in order to reduce multicollinearity (cf. Aiken & West, 1991). VIF scores varied from 1.05 to 4.52 across regressions. None of the tolerance tests for multicollinearity diagnostics reached statistical significance, suggesting multicollinearity did not deter regression results. Hypotheses on group satisfaction as outcome were tested using hierarchical linear modelling with Mlwin2.0, in order to account for the nested nature of the data. The variables were entered analogously to the regression procedure (Table 23).

Hypotheses 7 proposed a negative main effect of intergroup competition on group effectiveness. Table 24 (model 1) illustrates that for group performance as outcome variable, no significant, direct relationship could be revealed. Table 23 contains results from multilevel analysis on group satisfaction Time 2 as outcome. Model 1 revealed that the relationship between intergroup competition and change in satisfaction was marginally significant (coefficient = -.29;  $Se = .17$ ;  $p < .10$ ). Thus, providing at best tentative support for hypothesis 7, intergroup competition marginally predicted change in group satisfaction, but not performance.

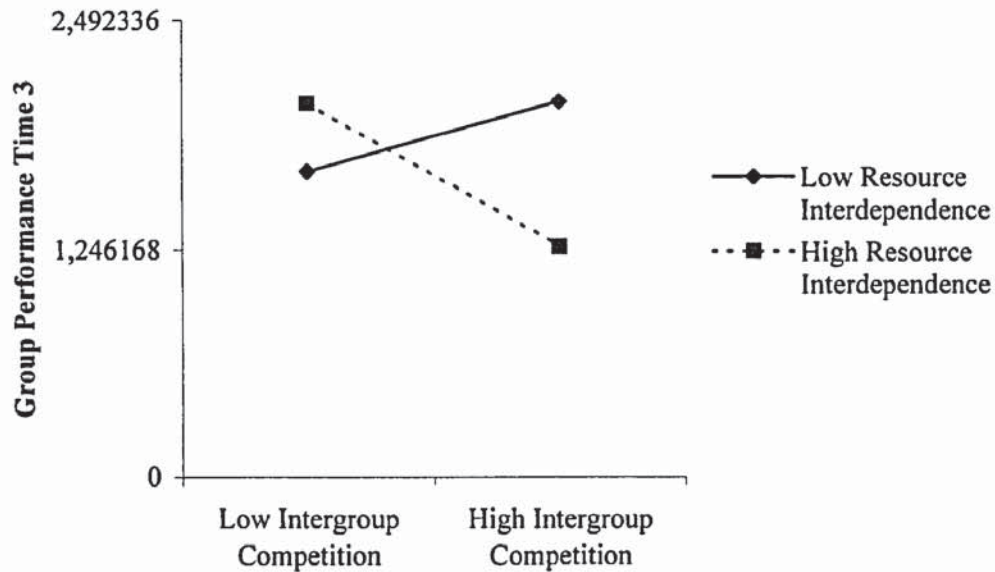


Hypotheses 8 proposed that intergroup competition negatively predicts change in intergroup effectiveness. Table 25, model 1, revealed that while competition negatively predicted short term change in intergroup productivity Time 2 ( $\beta_{\text{interaction}} = -.31, p < .05$ , model 1), this effect was (even though in the predicted direction) non significant at Time 3 ( $\beta_{\text{interaction}} = -.17$ , ns; model 1). Similarly, if intergroup viability was the outcome variable, intergroup competition negatively predicted short term change in viability ( $\beta_{\text{interaction}} = -.35, p < .05$ ; model 1, Table 26). Thus, Hypothesis 8 was partially supported.

Hypothesis 9 proposed a moderating effect of resource interdependence, such that the relationship between intergroup competition and group effectiveness was positive if groups were resource-independent, but negative if they were resource-interdependent. Table 24 (model 2) revealed that whilst the short term relationship with performance Time 2 was marginally significant ( $\beta_{\text{interaction}} = -.21, p < .10$ ), it reached statistical significance after 10 months at Time 3 ( $\beta_{\text{interaction}} = -.32, p < .05$ ). Figure 20 illustrates that while the relationship between competition and performance Time 3 was positive if resource interdependence was low, it was negative if resource interdependence was high. Further post hoc tests as suggested by Aiken and West (1991) revealed that while the simple slope for resource independence did not reach statistical significance ( $t_{\text{resource independence}} = -2.11$ , ns), the slope for resource interdependence did ( $t_{\text{resource interdependence}} = -2.94, p < .05$ ).

FIGURE 20

Resource Interdependence as a Moderator of the Relationship between Intergroup Competition and Group Performance Time 3



Multilevel modelling was used to examine the moderating effect on group satisfaction at Time 2 (Table 23). Model 2 revealed that the interaction effect did not reach statistical significance (coefficient<sub>interaction</sub> = -.42, ns); however, the negative coefficient indicates that the effect was in the predicted direction. Thus, H9 was supported for medium-term change in group performance, but not for group satisfaction.

Hypothesis 10 hypothesized a moderating effect reversed to H9, such that the relationship between intergroup competition and intergroup effectiveness is *positive* if groups were resource-interdependent, but *negative* if they were resource-independent. Inspection of Table 25 and 20, models 2, revealed that none of the interaction effects reached statistical significance. Thus, H10 was rejected.

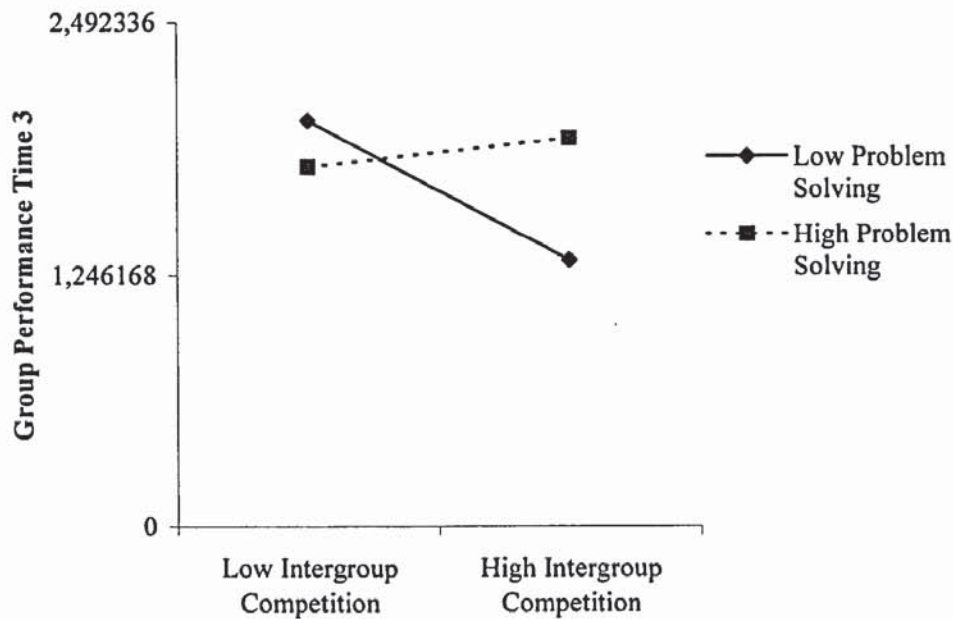
Hypothesis 11a-d proposed a moderating effect of group boundary spanners' negotiation style, such that the relationship between intergroup competition and change in

group performance was more positive if boundary spanners chose active negotiation styles (problem solving and contending), but weaker if passive styles were employed (accommodating and avoiding). As a reliable scale for accommodating could not be computed, Hypothesis 11c could not be tested. While inspection of Table 24 revealed no short-term effects for group performance Time 2, significant medium-term interaction effects were found for group performance Time 3: If boundary spanners chose a problem solving style to manage interface conflicts between groups, intergroup competition was more positively related to longitudinal change in group performance ( $\beta_{\text{interaction}} = .35, p < .05$ ; Table 24, model 3). Post hoc tests of simple slopes (Aiken & West, (1991) revealed that simple slopes for neither low nor high problem solving reached statistical significance ( $t_{\text{low problem solving}} = 2.02, \text{ns}$ ;  $t_{\text{high problem solving}} = 1.87, \text{ns}$ ), suggesting the relationship between competition and performance varies across the continuum of problem solving. Thus, problem solving negotiation appeared to buffer the negative effects of intergroup competition. Figure 21 illustrates that while the relationship was positive for high levels of problem solving, it was negative for low levels of problem solving.



FIGURE 21

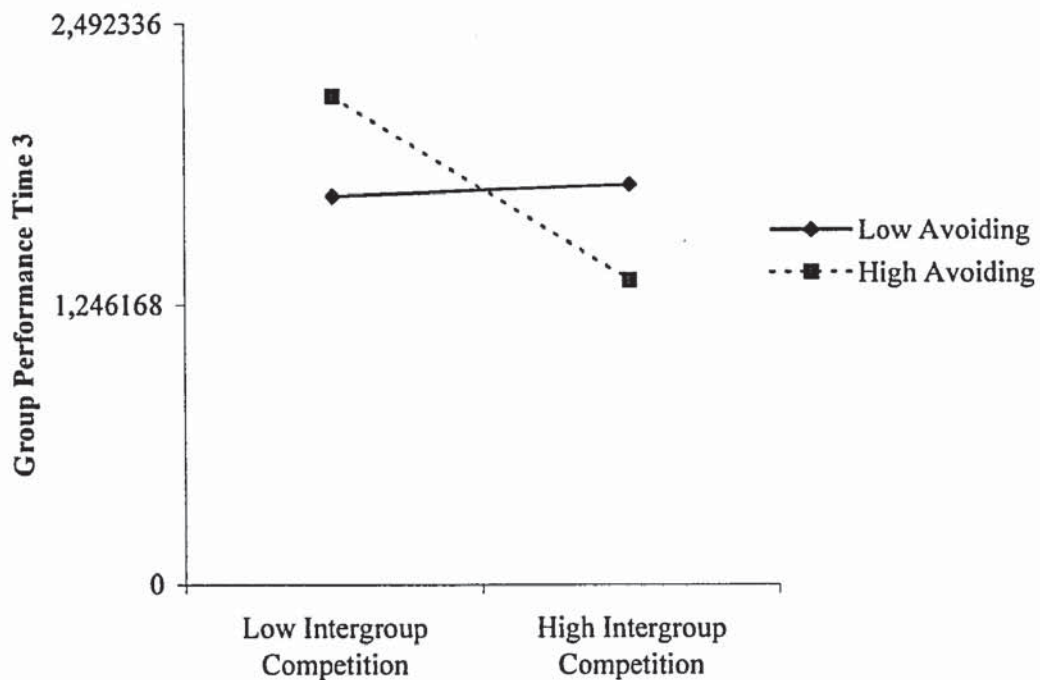
**Problem Solving Negotiation Style as a Moderator of the Relationship between  
Intergroup Competition and Group Performance Time 3**



Conversely, if boundary spanners avoided intergroup problems, intergroup competition was a stronger negative predictor of group performance Time 3 ( $\beta_{\text{interaction}} = -.42$ ,  $p < .05$ ; Table 24, model 4). Simple slope tests revealed that neither the regression line for high avoidance ( $t_{\text{high avoidance}} = -1.68$ , ns), nor the simple slope for low avoidance reached statistical significance ( $t_{\text{low avoidance}} = -.70$ , ns), suggesting that the relationship between intergroup competition and change in group performance varied across the range of avoidance. Figure 22 illustrates that while the relationship was positive for low levels of avoiding, it was negative for high levels.

FIGURE 22

Avoiding Negotiation Style as a Moderator of the Relationship between Intergroup Competition and Group Performance Time 3

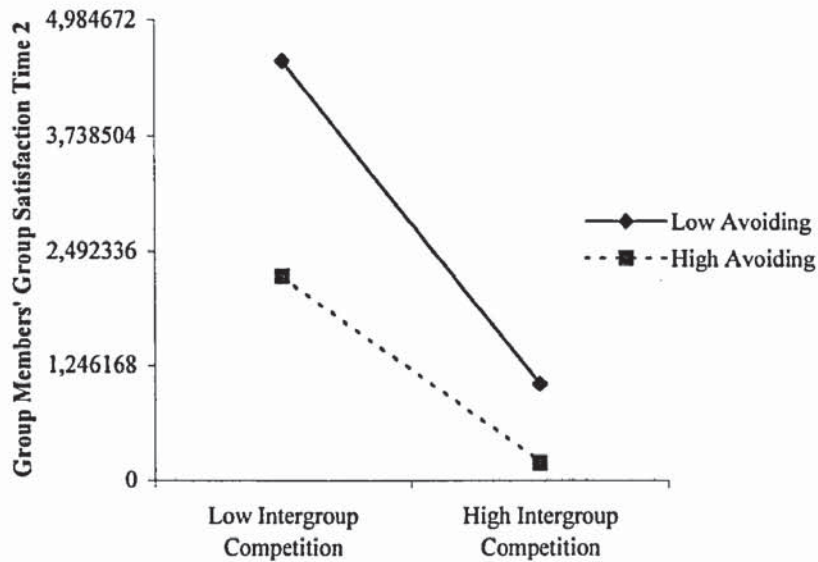


Thus, in conclusion, for medium (but not short-term) change in group performance, H11a and H11c were supported.

Hypothesis 12a-d proposed that group members' agreeable negotiation style moderates the relationship between intergroup competition and change in group members' satisfaction with their group. H12d (unreliable yielding scale) could not be tested. Inspection of Table 23 revealed that while H12a and c were not supported, the interaction term (model 4, H12b) reached statistical significance (coefficient<sub>interaction</sub> = 3.93,  $p < .05$ ). Figure 23 illustrates that, in line with H12b, if group members' avoided their conflicts with members of the other group, the relationship between intergroup competition and change in satisfaction was less negative, than if they did not avoid problems in intergroup encounters.

FIGURE 23

Group Members' Avoiding Negotiation Style as a Moderator of the Relationship  
between Intergroup Competition and Group Members' Satisfaction Time 2



Thus, while H12b was supported, H12a, c, and d could not be supported. While avoiding intergroup conflicts appeared to be a useful strategy to preserve group satisfaction, it appeared less conducive for group performance.

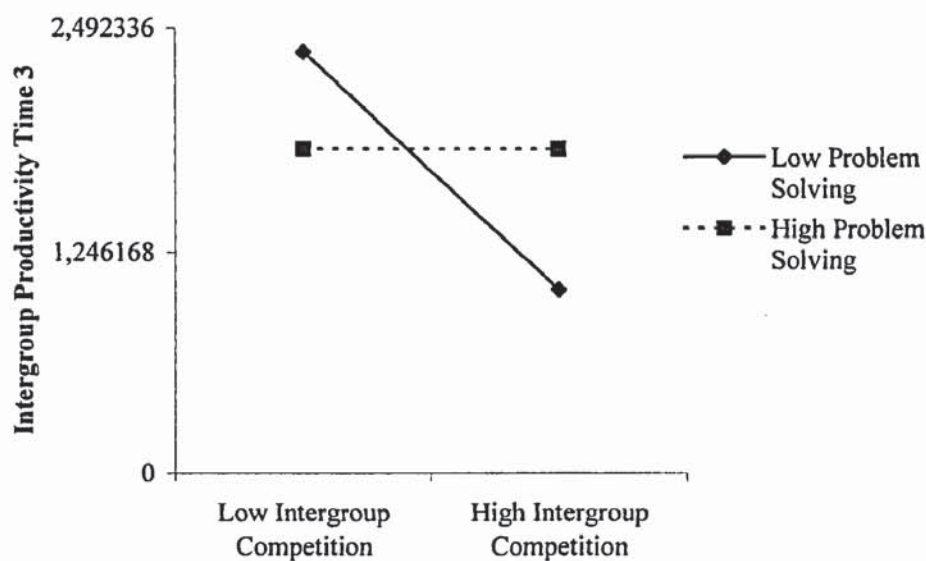
Hypothesis 13a-d proposed that the relationship between intergroup competition and change in intergroup productivity is moderated by group boundary spanners' negotiation style, such that the relationship should be more positive if interface conflicts are negotiated agreeably (problem solving and accommodating) rather than disagreeably (contending and avoiding). While H13b could not be tested due to an unreliable accommodating sub scale, inspection of Table 25 revealed significant interaction terms for medium-term, but not short-term change: If boundary spanners managed interface conflicts with a problem solving negotiation style, competition was less negatively related to change in intergroup productivity ( $\beta_{\text{interaction}} = .48, p < .05$ ; Table 25, model 3). Post hoc simple slopes tests revealed that while



the slope for low problem solving did not reach statistical significance ( $t_{\text{low problem solving}} = 1.98$ , ns), the slope for high problem solving did ( $t_{\text{high problem solving}} = 2.33$ ,  $p < .05$ ), suggesting that high problem solving ameliorated the relationship between intergroup competition and productivity. Thus, problem solving negotiation appeared to function as a buffer of the relationship between intergroup competition and change in intergroup productivity (Figure 24).

**FIGURE 24**

**Problem Solving Negotiation Style as a Moderator of the Relationship between Intergroup Competition and Intergroup Productivity Time 3**

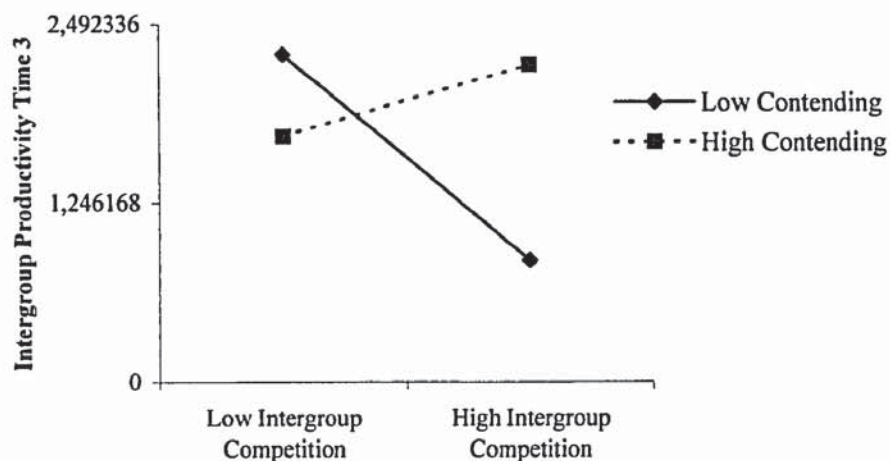


Similarly, boundary spanners' contending negotiation style moderated the relationship between intergroup competition and intergroup productivity Time 3 ( $\beta_{\text{interaction}} = .55$ ,  $p < .001$ ; Table 25, model 4). Surprisingly, however, the direction of the moderation was against prediction. While the relationship was positive for high levels of contending, it was negative for low levels (Figure 25). Post hoc tests (Aiken & West, 1991) revealed that simple slopes for neither high nor low levels of contending reached statistical significance ( $t_{\text{high contending}} =$

2.51,  $p < .05$ ;  $t_{\text{low contending}} = 2.51, p < .05$ ), suggesting the effect is pronounced at both high and low levels of contending. Thus, both active negotiation styles (problem solving and contending) appeared to moderate the relationship between intergroup competition and intergroup productivity.

**FIGURE 25**

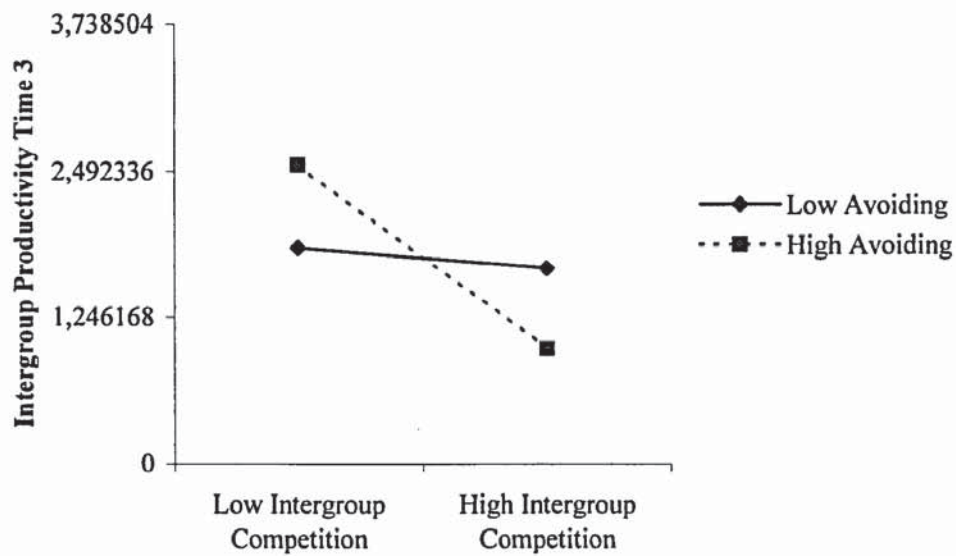
**Contending Negotiation Style as a Moderator of the Relationship between Intergroup Competition and Intergroup Productivity Time 3**



Conversely, if boundary spanners avoided intergroup conflicts, the relationship between intergroup competition and longitudinal change in intergroup productivity was stronger negative, than if they did not avoid conflicts ( $\beta_{\text{interaction}} = .56, p < .05$ ; Table 25, model 5). Post hoc tests revealed that neither the slope for high, nor for low avoidance reached statistical significance ( $t_{\text{high avoidance}} = -.25, \text{ns}$ ;  $t_{\text{low avoidance}} = -.43, \text{ns}$ ), suggesting the relationship between competition and productivity varied across the continuum of avoidance. Thus, avoiding communication appeared to deteriorate the relationship between intergroup competition and longitudinal change in intergroup productivity (Figure 26).

**FIGURE 26**

**Avoiding Negotiation Style as a Moderator of the Relationship between Intergroup Competition and Intergroup Productivity Time 3**



In conclusion, for medium-term (as opposed to short-term) change in intergroup productivity boundary spanners' active negotiation style appeared to function as a moderator.

H14a-d proposed that group boundary spanners' agreeable negotiation style moderates the relationship between intergroup competition and change in viability. Inspection of Table 26 (models 2-5) revealed the hypotheses were not supported, as none of the interaction terms reached statistical significance.



## 7.6 DISCUSSION

This paper examined the relationship between intergroup competition and longitudinal change in both group and intergroup effectiveness. Results provided almost no support for a main effect model that proposed a direct relationship between intergroup competition and change in team working effectiveness. Similarly, almost none of the analyses on short-term change (after 5 months) reached statistical significance. Instead, contingency models better explained this relationship in the medium term (after 10 months).

The relationship between intergroup competition and change in group performance was contingent upon both resource interdependence between groups and the group boundary spanners' negotiation style: If groups were resource interdependent, intergroup competition negatively predicted change in group performance; if groups were resource independent, intergroup competition positively predicted changes. Similarly, if group boundary spanners used a problem solving negotiation style, and did not avoid interface issues that emerge between groups, intergroup competition was positively related to change in group performance. If intergroup productivity was the outcome variable, boundary spanners' active negotiation style (problem solving and contending) appeared to be more beneficial to manage intergroup competition, whilst an avoiding negotiation style appeared rather detrimental. Before discussing implications for practitioners and researchers, I revert to study limitations and directions for future research.

### 7.6.1 Limitations and Directions for Future Research

First and foremost, both sample mortality and sample size at Time 3 ( $n = 27$  for group performance ratings;  $n = 24$  for intergroup productivity ratings) represent a serious study

limitation. However, both theoretical and statistical drop out analyses suggested that drop out was unsystematic, and the found results are representative (Goodman & Blum, 1996).

Second, despite advantages over cross-sectional studies, the used repeated measures design has limitations. So does it, for instance, not allow to rule out the reverse causal hypothesis that less effective groups may develop more intergroup competition. Complete two-panel designs and experimental research would give more confidence in causal interpretations.

### **7.6.2 Implications for Research and Practice**

Interestingly, most of the effects reported in this chapter occurred in the medium-term (after 10 months), but hardly any short-term relationships (after 5 months) could be revealed, and this despite sample attrition at Time 3. Researchers are strongly advised to build better theory in management research according to the timing of effects (e.g., Ancona et al., 2001; Mitchell & James, 2001). Results from this chapter suggest effects of competition on team working effectiveness require some time before they emerge. Thus, future research should explicitly adapt a temporal lens to the investigation of the effects of intergroup competition. Similarly, the effects of competition within organisations might remain undetected for managers, if they appear to occur in the long run rather than synchronously. Consequently, managers might underestimate or fail to link relationships between competition and changes in team working effectiveness.

The moderating effect of resource interdependence on the relationship between intergroup competition and changes in group effectiveness provided an integration of opposed theoretical predictions from realistic conflict theory (Sherif, 1966) versus the resource dependency perspective (Pfeffer & Salancik, 1978), and an integration of inconclusive results from experimental versus organizational research. Teams in the quoted laboratory and field



experimental studies were not depending on each others' resources for task accomplishment. Consequently, when in competition, they were unable to hamper each other's task performance. Solely the motivational effects of competition came to bear, resulting in an enhancement of group effectiveness. So did orange pickers in the Erev et al. (1993) field experiment not need the support or resources of other orange picking teams to accomplish their group goal, which was to collect more oranges than other groups. The effectiveness of organizational groups, on the other hand, does to a great extent depend on resource provision from other teams (Brett & Rognes, 1986; Thompson, 1967), thereby displaying a great amount of resource interdependence. So do nursing teams in healthcare frequently need social services to arrange and coordinate patient treatment, whilst social services depend on nursing teams to provide treatment to patients in order to meet funding schedule targets.

This finding has also strong implications for management: First, enhancing intergroup competition per se is *not* a conducive management practice, as some research would suggest (e.g., Erev et al., 1993; Putnam, 1997). Similarly, as others have argued (e.g., Mohrman et al., 1995), it is not by itself detrimental. An analysis of the interdependencies between groups allows further insights, suggesting that if resource interdependence is low, competition between groups is a suitable means by which managers may enhance group performance. However, if resource interdependence is high, competition may lead groups to hamper each other's efforts, resulting in reduced effectiveness. Our data would therefore suggest managers should simultaneously foster competition between non-interdependent groups, but foster friendly, cooperative relationships between interdependent groups. This might allow organizations to utilize the motivational and structural benefits of intergroup competition, whilst at the same time avoiding its drawbacks. Future research may investigate whether these effects are confounded with proximity or distance between groups. Resource interdependent groups may have more proximity toward each other, while resource independent groups might



cooperate in relative distance. Thus, other factors than interdependence might have contributed to these results.

The ameliorating moderating effect of group boundary spanners' problem solving negotiation style, and the exacerbating moderating effect of avoiding negotiation style, on the relationship between intergroup competition and changes in group performance supported the position that boundary spanners need to openly negotiate intergroup conflicts of interest in order to gain most advantageous outcomes for their groups (cf. Blake et al., 1964; Lawrence & Lorsch, 1967). Yet a very similar pattern of negotiation style was also useful for performance outcomes *between* groups: If boundary spanners actively negotiated interface conflicts between groups, competition was more positively related to intergroup productivity. To my knowledge, this is the first study to examine the moderating effect of conflict management styles on both group and intergroup performance outcomes. Even though no different pattern of negotiation style could be found for group and intergroup outcomes, the findings suggest that negotiation should generally be openly confronting rather than avoiding. Thus, these findings support the need for managers to develop group boundary spanners' conflict management skills in order to overcome intergroup competition for enhanced effectiveness at both the group and the intergroup level.

**Table 23**  
**Results of Hierarchical Multiple Regression Analysis of Group Satisfaction Time 2 onto Intergroup Competition, Resource interdependence, and Negotiation Style<sup>a</sup>**

| Variables                              | Group Satisfaction Time 2 |             |             |             |             |
|--|---------------------------|-------------|-------------|-------------|-------------|
|  | Model 1                   | Model 2     | Model 3     | Model 4     | Model 5     |
| <i>Block 1: Controls</i>               |                           |             |             |             |             |
| Org 2                                  | .37(.23)                  | .33(.23)    | .47(.26)    | .42(.26)    | .45(.26)    |
| Org 3                                  | .14(.23)                  | .26(.24)    | .24(.28)    | .12(.26)    | .12(.27)    |
| Org 4                                  | .43(.25)                  | .45(.25)    | .50(.27)    | .41(.26)    | .51(.26)    |
| Org 5                                  | .80(.52)                  | .91(.52)    | .78(.72)    | .79(.70)    | .70(.71)    |
| Membership Change                      | .06(.07)                  | .03(.08)    | .05(.08)    | .07(.08)    | .09(.08)    |
| Teamage                                | .02(.10)                  | .02(.11)    | .08(.13)    | .15(.13)    | .12(.13)    |
| Teamsize                               | -.03(.01)                 | -.03(.01)   | -.04(.02)   | -.04(.02)   | -.03(.02)   |
| Interdependence                        | .23(.16)                  | .26(.16)    | .24(.18)    | .19(.17)    | .25(.17)    |
| Satisfaction Time 1                    | .56(.09)***               | .60(.09)*** | .47(.10)*** | .46(.10)*** | .49(.10)*** |
| <i>Block 2: Main effects</i>           |                           |             |             |             |             |
| Competition                            | -.29(.17)                 | 1.00(1.00)  | .90(.92)    | -.11(.47)   | -1.38(.54)* |
| Resource interdependence               |                           | 1.00(.71)   |             |             |             |
| Problem Solving                        |                           |             | .77(.59)    |             |             |
| Contending                             |                           |             |             | .03(.53)    |             |
| Avoiding                               |                           |             |             |             | -.80(.40)*  |
| <i>Block 3: Interactions</i>           |                           |             |             |             |             |
| Competition * Resource interdependence |                           | -.42(.32)   |             |             |             |
| Competition * Problem Solving          |                           |             | -.36(.25)   |             |             |
| Competition * Contending               |                           |             |             | -.12(.23)   |             |
| Competition * Avoiding                 |                           |             |             |             | .35(.18)*   |
| IGLS                                   | 205.64                    | 203.24      | 172.76      | 170.16      | 171.20      |
| $\Delta\chi^2$ <sup>b</sup>            | 3.04                      | 1.71        | 2.07        | .29         | 3.85        |

*Note.* <sup>a</sup> Unstandardised coefficients shown are equivalent to b-coefficients in regression analysis; Standard errors in parentheses;  $n = 137$  individuals;  
<sup>b</sup> Changes in  $\Delta\chi^2$  are from the previous block within the same model.  
 $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 24

Results of Multiple Regression Analysis of Group Performance Time 2 and 3 onto Intergroup Competition, Resource Interdependence, and Negotiation Style<sup>a</sup>

| Variables                    | Group Performance Time 2 |         |         |         |         | Group Performance Time 3 |         |         |         |         |
|------------------------------|--------------------------|---------|---------|---------|---------|--------------------------|---------|---------|---------|---------|
|                              | Model 1                  | Model 2 | Model 3 | Model 4 | Model 5 | Model 1                  | Model 2 | Model 3 | Model 4 | Model 5 |
| <i>Block 1: Controls</i>     |                          |         |         |         |         |                          |         |         |         |         |
| Org 2                        | -.24                     | -.26    | -.24    | -.25    | -.29    | -.04                     | -.05    | -.06    | -.04    | .04     |
| Org 3                        | -.25                     | -.21    | -.26    | -.27    | -.24    | -.67**                   | -.58**  | -.78*** | -.64*   | -.58**  |
| Org 4                        | -.17                     | -.17    | -.16    | -.19    | -.18    |                          |         |         |         |         |
| Org 5                        | -.02                     | -.00    | -.02    | -.03    | .02     |                          |         |         |         |         |
| Membership Change            | .03                      | -.04    | .03     | .04     | .03     | -.22                     | -.17    | -.18    | -.23    | -.32*   |
| Teamage                      | .13                      | .16     | .15     | .14     | .16     | .04                      | .08     | .08     | .03     | -.00    |
| Teamsize                     | -.11                     | -.11    | -.12    | -.10    | -.09    | .51**                    | .48*    | .46*    | .52*    | .47*    |
| Interdependence              | -.00                     | .03     | -.01    | .01     | .03     | .13                      | .20     | .09     | .16     | .11     |
| Group Performance Time 1     | .80***                   | .73***  | .77***  | .80***  | .79***  | .39*                     | .40*    | .30*    | .37*    | .35*    |
| <i>Block 2: Main effects</i> |                          |         |         |         |         |                          |         |         |         |         |
| Competition                  | .17                      | .10     | .10     | .17     | .22     | -.03                     | -.15    | -.20    | -.07    | -.28    |
| Resource interdependence     |                          | .12     |         |         |         |                          | -.16    |         |         |         |
| Problem Solving              |                          |         | -.05    |         |         |                          | .14     |         |         |         |
| Contending                   |                          |         |         | .09     |         |                          |         |         | .12     |         |
| Avoiding                     |                          |         |         |         | .20     |                          |         |         |         | .01     |



### Block 3: Interactions

|  | -0.21   | .11     | -.32*   |         |
|--|---------|---------|---------|---------|
| Competition * Resource interdependence |         |         |         |         |
| Competition * Problem Solving          |         | .11     | .35*    |         |
| Competition * Contending               |         | -.01    | .09     |         |
| Competition * Avoiding                 |         |         |         | -.42*   |
| $\Delta R^2{}^b$                       | .02     | .01     | .06     | .01     |
| F for $\Delta R^2{}^b$                 | 1.67    | .63     | 4.37*   | 5.00*   |
| R <sup>2</sup>                         | .69     | .70     | .77     | .80     |
| F                                      | 6.78*** | 7.08*** | 5.27**  | 5.85*** |
|  |         | 5.24*** | 5.86*** | 3.86**  |
|  |         | 5.28*** | 5.21**  | 5.96**  |

**Note.**

<sup>a</sup> Standardized regression coefficients are shown;  $n = 41$  for regressions onto group performance Time 2;  $n = 27$  for regressions onto group performance Time 3.  
<sup>b</sup> Changes in  $R^2$  are from the previous block within the same model.

$p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Table 25

Results of Multiple Regression Analysis of Intergroup Productivity Time 2 and 3 onto Intergroup Competition, Resource Interdependence, and Negotiation Style<sup>a</sup>

| Variables                      | Intergroup Productivity Time 2 |         |         |         |         | Intergroup Productivity Time 3 |         |         |         |         |
|--------------------------------|--------------------------------|---------|---------|---------|---------|--------------------------------|---------|---------|---------|---------|
|                                | Model 1                        | Model 2 | Model 3 | Model 4 | Model 5 | Model 1                        | Model 2 | Model 3 | Model 4 | Model 5 |
| <i>Block 1: Controls</i>       |                                |         |         |         |         |                                |         |         |         |         |
| Org 2                          | .18                            | .14     | .18     | .16     | .16     | -.24                           | -.27    | -.23    | -.28*   | -.04    |
| Org 3                          | -.15                           | -.10    | -.14    | -.17    | -.19    | -.50                           | -.51    | -.58*   | -.26    | -.37    |
| Org 4                          | -.28                           | -.26    | -.31    | -.30    | -.25    |                                |         |         |         |         |
| Org 5                          | -.28                           | -.27    | -.31*   | -.29    | -.30*   |                                |         |         |         |         |
| Membership Change              | .08                            | -.02    | .04     | .09     | .15     | -.16                           | -.23    | -.14    | -.23    | -.32    |
| Teamage                        | .12                            | .13     | .15     | .13     | .13     | .45*                           | .45*    | .49*    | .36**   | .34     |
| Teamsize                       | .12                            | .10     | .13     | .12     | .10     | .18                            | .18     | .11     | .14     | .14     |
| Interdependence                | -.08                           | -.07    | -.09    | -.08    | -.11    | .24                            | .22     | .19     | .28*    | .21     |
| Intergroup Productivity Time 1 | .42**                          | .43**   | .35*    | .43**   | .57**   | .39                            | .40     | .26     | .43**   | .15     |
| <i>Block 2: Main effects</i>   |                                |         |         |         |         |                                |         |         |         |         |
| Competition                    | -.31*                          | -.33*   | -.41*   | -.32    | -.23    | -.17                           | -.15    | -.42    | -.29*   | -.55*   |
| Resource interdependence       |                                | .19     |         |         |         |                                | .17     |         |         |         |
| Problem Solving                |                                |         | -.19    |         |         |                                |         | .08     |         |         |
| Contending                     |                                |         |         | .09     |         |                                |         |         | .25*    |         |

| Avoiding                               | -.24    |        | .00    |          |
|--|---------|--------|--------|----------|
| Block 3: Interactions                  |         |        |        |          |
| Competition * Resource interdependence | -.13    | .01    |        |          |
| Competition * Problem Solving          | .12     | .48*   |        |          |
| Competition * Contending               | -.01    |        | .55*** |          |
| Competition * Avoiding                 |         | .15    |        | -.56*    |
| $\Delta R^2$ <sup>b</sup>              | .06     | .01    | .02    | .12      |
|  |         | .01    |        | .26      |
| $F$ for $\Delta R^2$ <sup>b</sup>      | 4.36*   | .50    | .72    | 5.05*    |
|  |         | .63    | .58    | 30.76*** |
| $R^2$                                  | .63     | .66    | .69    | .72      |
|  |         | .69    | .72    | .90      |
| $F$                                    | 4.78*** | 4.11** | 3.66** | 10.55*** |
|  | 4.79*** | 4.67** | 3.03*  | 3.04*    |

*Note.* <sup>a</sup>Standardized regression coefficients are shown;  $n = 39$  for regressions onto intergroup productivity Time 2;  $n = 24$  for regressions onto intergroup productivity Time 3.  
<sup>b</sup>Changes in  $R^2$  are from the previous block within the same model.

$p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$



**Table 26**  
**Results of Multiple Regression Analysis of Intergroup Viability Time 2 and 3 onto Intergroup Competition, Resource interdependence, and Negotiation Style<sup>a</sup>**

|                              |  | Intergroup Viability Time 2 |         |         |         |         |
|------------------------------|--|-----------------------------|---------|---------|---------|---------|
|                              | Variables                              | Model 1                     | Model 2 | Model 3 | Model 4 | Model 5 |
| <i>Block 1: Controls</i>     |  |                             |         |         |         |         |
|                              | Org 2                                  | -.21                        | -.23    | -.18    | -.21    | -.22    |
|                              | Org 3                                  | -.29                        | -.30    | -.38    | -.30    | -.35    |
|                              | Org 4                                  | .16                         | .24     | .22     | .15     | .15     |
|                              | Org 5                                  | -.07                        | -.07    | -.06    | -.07    | -.10    |
|                              | Membership Change                      | .29                         | .16     | .43     | .28     | .31     |
|                              | Teamage                                | .05                         | .03     | .11     | .06     | .06     |
|                              | Teamsize                               | -.12                        | -.09    | -.19    | -.11    | -.10    |
|                              | Interdependence                        | .13                         | .14     | .16     | .12     | .10     |
|                              | Intergroup Viability Time 1            | .41*                        | .36*    | .36     | .41     | .44*    |
| <i>Block 2: Main effects</i> |  |                             |         |         |         |         |
|                              | Competition                            | -.35*                       | -.29    | -.40    | -.33    | -.26    |
|                              | Resource interdependence               |                             | .27     |         |         |         |
|                              | Problem Solving                        |                             |         | .26     |         |         |
|                              | Contending                             |                             |         |         | -.06    |         |
|                              | Avoiding                               |                             |         |         |         | -.06    |
| <i>Block 3: Interactions</i> |  |                             |         |         |         |         |
|                              | Competition * Resource interdependence |                             | .19     |         |         |         |
|                              | Competition * Problem Solving          |                             |         | .13     |         |         |
|                              | Competition * Contending               |                             |         |         | -.05    |         |
|                              | Competition * Avoiding                 |                             |         |         |         | .12     |
|                              | $\Delta R^2$ <sup>b</sup>              | .08                         | .02     | .01     | .00     | .00     |
|                              | <i>F</i> for $\Delta R^2$ <sup>b</sup> | 4.28*                       | 1.25    | .43     | .05     | .18     |
|                              | <i>R</i> <sup>2</sup>                  | .57                         | .61     | .63     | .58     | .58     |
|                              | <i>F</i>                               | 3.23**                      | 2.91*   | 2.66*   | 2.16    | 2.21    |

*Note.* <sup>a</sup>Standardized regression coefficients are shown; *n* = 35.

<sup>b</sup>Changes in *R*<sup>2</sup> are from the previous block within the same model.  
*p* < .05; \*\* *p* < .01; \*\*\* *p* < .001

## **Chapter 8: Integration and Conclusions**

### **8.0 CHAPTER SUMMARY**

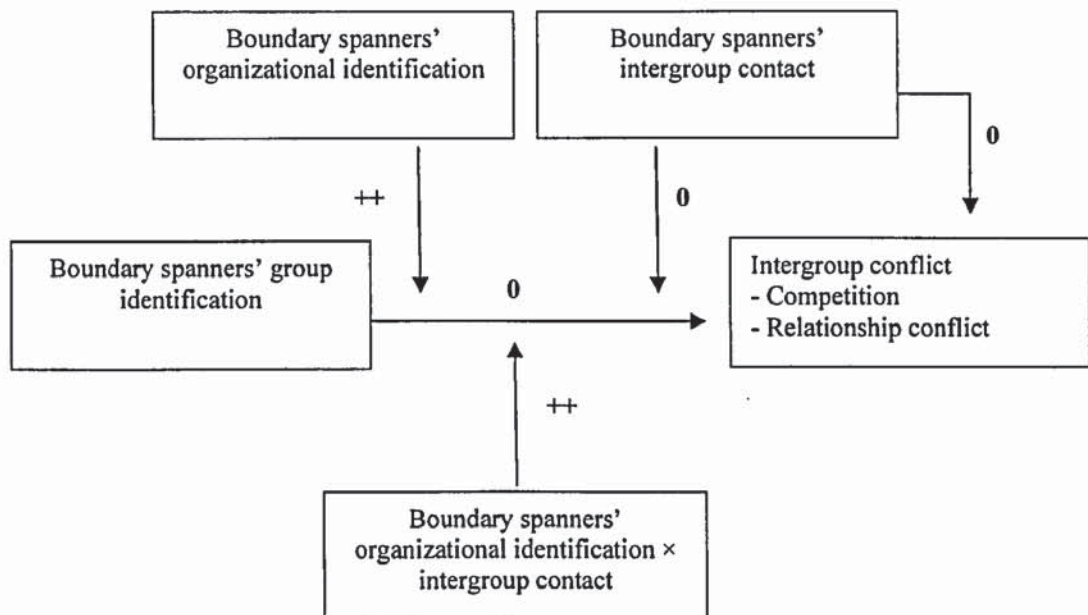
The aim of this chapter is to summarise and discuss the core findings, limitations, and implications of this thesis, and to give a view on areas for future research. The chapter starts by highlighting selected key findings, which are summarised and integrated into refined empirical models. It continues with the implications of these findings for theory and management and highlights study limitations, which primarily focus on methodological weaknesses. Directions for future research, which target at both potential methodological and content-related areas, conclude this chapter.

### **8.1 SUMMARY OF MAIN FINDINGS**

This thesis was set out with two aims. First, to explain the emergence of competition and conflict between health care teams. And second, to investigate how intergroup competition is related to longitudinal change in team working effectiveness. Figure 27 summarises the empirical findings for conflict and competition as outcome (chapter 5).

FIGURE 27

Empirical Relationship



Note. 0 = no empirical support

+ = moderate empirical support, positive Beta of interaction term

++ = strong empirical support, positive Beta of interaction term

- = moderate empirical support, negative Beta of interaction term

-- = strong empirical support, negative Beta of interaction term

Intergroup conflict and competition was not predicted by boundary spanners' group identification, nor by their amount of intergroup contact. Instead, in line with the dual identity model of intergroup relations, group members' perceptions of intergroup conflict and competition were predicted by an interaction effect of boundary spanners' identification with both their work group and the organisation. Best fit, however, was achieved for a three-way interaction model combining group identification, organisational identification, and intergroup contact. If boundary spanners' dual identity was aligned by frequent rather than

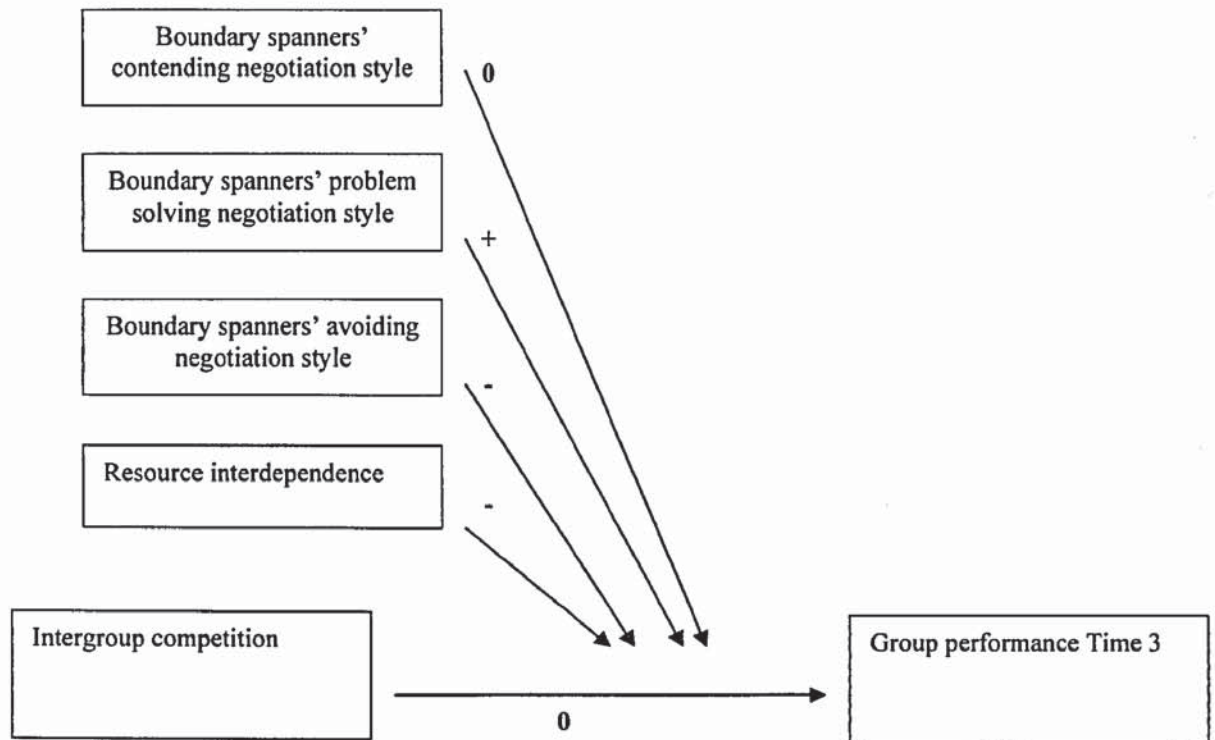


infrequent work related contact. Thus, the social psychological lens adopted to explain intergroup conflict proved useful for health care teams in this sample.

Within chapter 7, I investigated the relationship between intergroup competition and longitudinal change in group performance and group members' satisfaction with their group. While a main effect model received only limited support, group members' avoiding negotiation style moderated the relationship between intergroup competition and group members' satisfaction: In line with predictions from social identity theory, intergroup competition was more strongly related to group members' satisfaction with their group, if group members avoided intergroup problems. If group performance was the outcome variable, no relationships were discovered for short term longitudinal change (after 5 months). However, for medium-term change (after 10 months), a number of variables emerged as moderators of this relationship (see Figure 28).

FIGURE 28

Summary of Empirical Main and Interaction Effects onto Group Performance Time 3



Note. 0 = no empirical support

+ = empirical support, positive Beta of interaction term

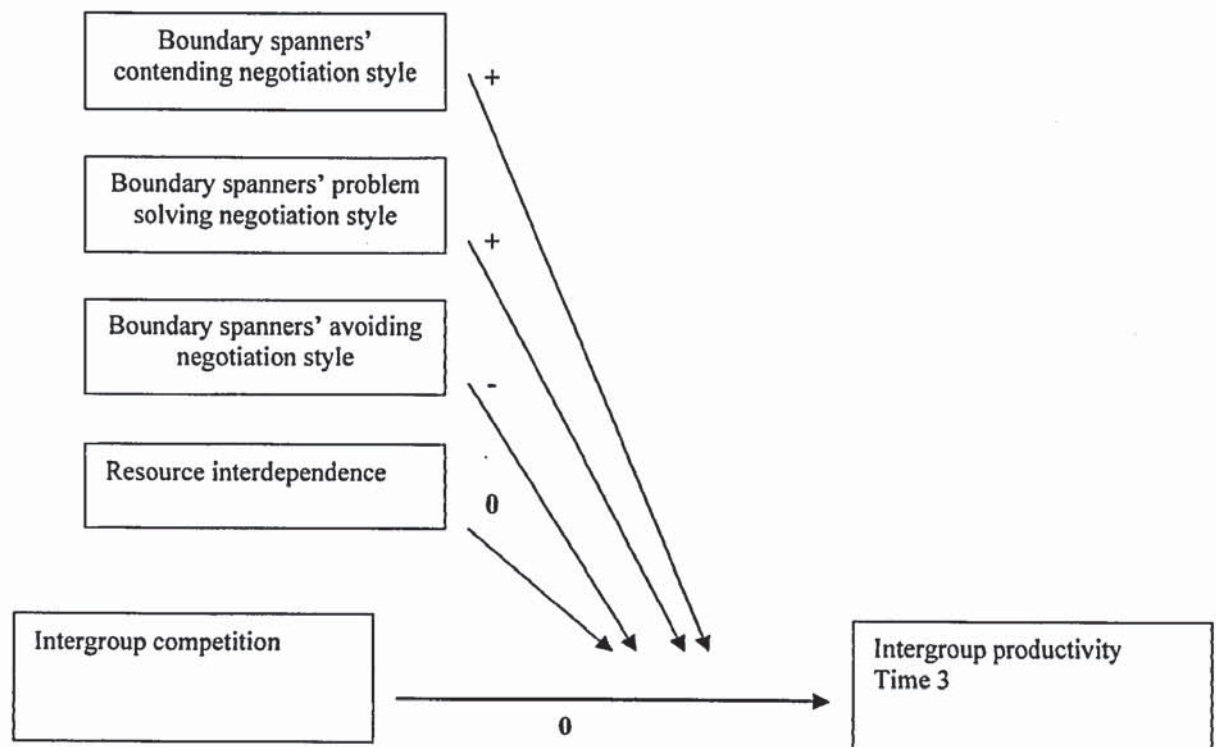
- = empirical support, negative Beta of interaction term

Medium-term change was predicted by both structural and behavioural moderators. Consistent with predictions, intergroup competition was positively related to longitudinal change in group performance, if groups were resource independent, but negatively if groups depended upon each other's resources. Similarly, the style in which boundary spanners managed interface conflicts moderated the competition-performance relationship. While a problem solving negotiation style ameliorated this relationship, avoiding negotiation style exacerbated it: Thus, the more boundary spanners openly confronted differences with the

outgroup, the more positive was the relationship between intergroup competition and medium-term change in group performance.

The relationship between intergroup competition and longitudinal change in intergroup effectiveness (i.e., intergroup viability and productivity), on the other hand, was less straightforward. None of the variables tested predicted longitudinal change in intergroup viability. Similarly, none of the variables predicted short-term change in intergroup productivity. However, boundary spanners' negotiation style emerged as a moderator of the relationship between intergroup competition and medium-term change (after 10 months; see Figure 29).

**FIGURE 29**  
**Summary of Empirical Main and Interaction Effects**  
**onto Intergroup Productivity Time 3**



*Note.* 0 = no empirical support

+ = empirical support, positive Beta of interaction term



- = empirical support, negative Beta of interaction term

As predicted, problem solving negotiation style emerged as an ameliorator, and avoiding negotiation style as an exacerbator: Thus, similar to within group performance, if groups find themselves in competition, an open and active approach of intergroup conflicts was more conducive for longitudinal change in intergroup productivity. However, against predictions, a contending negotiation style also emerged as an ameliorator, suggesting that the relationship between intergroup competition and intergroup productivity was more positive if boundary spanners' actively pursued their own interest at the expense of the other party's interest.

Within the next sections, I will briefly summarise the main implications for theory and management, before I will discuss in more detail study limitations and avenues for future research.

### **8.1.1 Implications for Theory**

As discussed within chapter 5, both intergroup contact theory and social identity theory appeared to represent very powerful theoretical frameworks to predict competition and conflict between groups in this sample. As an alternative to contemporary version of intergroup contact theory, such as the common ingroup identity model (Gaertner et al., 1993), results from this thesis suggest that group identification, organizational identification, and intergroup contact in combination predict conflict and competition between groups best. Thus, this research suggests that the mechanisms by which intergroup conflict would be reduced are multiplicative rather than additive. Future models of intergroup contact theory should consider this complex interplay of contact, group and organizational identification, and examine it as a competitive model to existing frameworks. Further, contemporary models of

intergroup contact should take into consideration that field tests of social psychological theories need to be tailored to the organizational context in which intergroup relations occur: In this research, effects were found only for formal group leaders and those individuals of leaderless groups who have most frequent outgroup contact, as opposed to every individual within the group. Thus, the limited empirical support of contemporary versions of intergroup contact theory in organizational settings might be due to the fact that the nature of organizational intergroup interactions has not been taken sufficiently into account.

The empirical relationships between intergroup competition and longitudinal change in both group performance and intergroup productivity replicated some of the theoretical and empirical findings in particular of early research on intergroup relations (e.g., Lawrence & Lorsch, 1967; Blake et al., 1964). However, these approaches were less refined and explicit in theorising and measuring both group and intergroup performance outcomes as separate constructs within one study. Results from this research project suggest that boundary spanners' conflict management styles are crucial for performance outcomes at both levels, and very similar patterns of results suggest problem solving negotiation style to be beneficial, while avoiding negotiation style to be rather detrimental. Thus, future theoretical frameworks on the management of intergroup conflict should incorporate performance outcomes at both the group and the intergroup level, and develop refined theories of how group boundary spanners' conflict management styles interact with intergroup interdependence.

### **8.1.2 Implications for Management**

Some implications for management have already been discussed within the respective chapters of this thesis, and will therefore only be highlighted briefly here. Findings suggested that harmonious intergroup relations might best be fostered if management supports intergroup contact and a dual identity of those boundary spanners primarily involved in



intergroup interactions. Similarly, in order to manage competitive interdependence between groups, both boundary spanners' negotiation style and resource interdependence appeared as important moderators for team working performance outcomes.

Viewing those results as a whole suggests levers for management interventions targeting at both structural and psychological factors. For instance, a diagnosis of the resource interdependence between teams could have implications when managers should stimulate competition, and when competition should be rather downplayed. Managers might stimulate competition between distal groups that do not depend on each other's resources, but reward collaborative relationships between groups working closely together. Furthermore, both aspects of individuals' self concept and behaviour, represent levers where management could intervene to improve team working effectiveness. Such interventions could be rather cost efficient and feasible; for instance, the support of intergroup gatherings and rotations of boundary spanners from group to group might be achieved with little financial effort, yet could result in more harmonious intergroup relations. Similarly, results suggest managers should invest into the training of group boundary spanners' conflict management skills. Additionally, results of this thesis might also have implications for the selection of employees into boundary role positions. Choosing those individuals for boundary role positions that feel strong ties with both their work group and the organisation, and have good conflict management skills, might result in both harmonious intergroup relations, and effective team outcomes at both the group and the intergroup level.

## **8.2 STUDY LIMITATIONS**

In the following, I will discuss a number of predominantly methodological issues that run as common threads throughout the chapters of this thesis.



*Study design.* Analyses of the cross-sectional data in chapter 5 do bear the problem of both reverse causation and treatment of third variables. For instance, theory would as easily justify that competition and conflict would enhance boundary spanners' group identification, rather than vice versa. Similarly, a third variable might have influenced both independent and dependent variables, and thereby produced the relationships. Thus, causal inferences with such a design can not be proven (Holland, 1986). Within chapter 7, a 3-phase repeated measures design has been employed. Such a design allows that third variables can be controlled for by inclusion into the first step, and occasion factors and background variables as a source of spurious dependency can be ruled out. (The more potential variables are included, the more explanations of spuriousness can be ruled out.) However, a number of limitations are linked to this approach (cf. Cohen et al., 2003; Dwyer, 1983):

Synchronous causal relationships can not be identified by this approach, if the independent variable is not stable; reverse causal effects can not be tested; and problems such as assumptions of uncorrelated measurement error persist. I have attempted to minimise those weaknesses by strong theoretical basis, good psychometric properties of the scales, and careful choice of time lags.

Similarly, sample mortality appeared to be a problem for the longitudinal analysis. Most significant effects were found for external ratings at Time 3, yet those effects were based on a reduced sample of 25 and 28 teams for intergroup productivity and group performance, respectively. Statistical drop out analyses, however, has been conducted within chapter 7, and comparisons with the sub sample of complete data suggested sample attrition is not a problem (Goodman & Blum, 1996).

*Sample restrictions.* This study reverted to a sample of British health care teams from five public sector organisations. As discussed within chapter 4, those organisations were very similar and comparable, suggesting that replication in other settings, especially the private sector, would be desirable. Another issue relates to the analysis of the data, which was

conducted with one and the same sample. This strategy represents a limitation in particular for that part of this thesis where a measure was developed (chapter 6), and the same measure used to test a theoretical model by reverting to the same sample (even though at different points in time, and different respondents provided information). Replication of these findings are strongly desirable to eliminate the possibility that sample specific attributes might have affected results.

*Source of the information.* Some constructs within this research attempted to measure the relationship between both groups of a dyad, yet responses were only taken from one group (as was the case for the conflict scales). The underlying assumption of representativeness of responses from one group to the dyad is but unproven and has been criticised recently (Klein, Palmer, & Buhl-Conn, 2000). However, there is some evidence from the literature which suggests that such a generalisation is justified. Empirical evidence from conflict research suggests that parties both converge on their perceptions of issues (Pinkley et al., 1994), and that conflict behaviour is indeed frequently reciprocated (Pruitt & Rubin, 1986). Thus, given the team dyad has established an intergroup relationship over time (which was the case in this sample), this issue might be less of a problem. This, however, has implications for the generalizability of study findings to other organisational settings. Teams in this research were co-located, which likely facilitated the development of shared perceptions of intergroup constructs. Sharedness of perceptions may differ in other organisational contexts where teams are locally dispersed, and therefore may not develop shared perceptions of their relationship with each other. Similarly, sharedness might be restricted in hierarchical intergroup contexts, such as labour-union relationships, due to an unequal power distribution.

*Time lag.* The time lag chosen is crucial for the detection of meaningful results in longitudinal research (Ancona et al., 2001; Mitchell & James, 2001). Ideally, the intervals should be short enough in order to allow detection of emerging changes, but at the same time long enough to allow full development of effects (van de Ven & Ferry, 1980). Thus, theory



about the emergence of effects should guide the choice of the time frame. In this project, hardly any effects could be found for outcomes measured after 5 months (Time 2), even though sample size was considerable ( $n = 37$  or 40 teams, respectively). The fact that a number of significant results could be found after 10 months (Time 3), despite a much smaller sample size, suggests that effects might not have emerged by the time of 5 months. This is a problem for analyses examining longitudinal change where outcome variables were only available at Time 1 and Time 2 (i.e., analyses on group members' satisfaction with their group and intergroup viability). In fact, hardly any significant effects could be found in those analyses, leaving it up for speculation whether effects are non existing, or whether effects would have occurred later onwards and have not been detected.

### **8.3 AVENUES FOR FUTURE RESEARCH**

#### **8.3.1 Level of Analysis Issues**

The analysis and diagnosis of organisational intergroup relations requires consideration of multiple levels of analysis. These need to be considered from theoretical, conceptual, and statistical viewpoints. Interestingly, the levels are not constrained to the individual and the group level, but embrace the level of the dyad (e.g., negotiations between the leaders of two groups), the intergroup dyad (e.g., constructs emerging as a result of intergroup interactions, such as intergroup effectiveness), and the intergroup set (e.g., performance outcomes that result out of the efforts of sets or networks of teams; cf. Mathieu et al., 2001). This thesis has illustrated that theoretical considerations in line with organizational realities need to be considered for the theoretical meaning as well as the measurement of the constructs (cf. Klein et al., 2001): Hence, intergroup conflict was measured as a group level construct, and responses from group members were aggregated; yet



responses on negotiation behaviour of intergroup issues was measured with selected boundary spanners, those individuals primarily involved in intergroup transactions. Much more knowledge is needed as regards what aspects of intergroup relations are a matter of interpersonal relationships, and which should be conceptualised at the group or intergroup level.

Similarly, more development is needed in the statistical analysis of intergroup data. For instance, to what extent can group members' responses be analysed as if they were independent from the intergroup relations they are nested in (cf. Kenny & Judd, 1986), for some related statistical problems)? Most group research in organisations treats teams as if they were independent entities. Yet some team dyads might rather function as a single synergistic entity, while others don't. The analysis of dyadic relationships (e.g., Kashy & Kenny, 2000) might be extended to dyads and sets of intergroup relationships in future.

### **8.3.2 Complementary Methodological Approaches**

While a predominantly quantitative approach was adapted in this thesis (cf. chapter 4), alternative research methodologies could be used to complement and extend the findings of this research. For instance, qualitative methods could be employed to explore other aspects of intergroup relations that may affect team working effectiveness, to triangulate the findings of this research, or to shed further light onto the mechanisms through which conflict between groups operates (see Jehn, 1997, and Smith, 1989, for such approaches to organizational conflict). Experimental research could be used to implement causality of the found relationships by experimental manipulation of intergroup competition (see, for instance, Mulvey & Ribbons, 1999). Finally, social network analysis (both qualitative and quantitative) could add to the findings of this research by an examination of the role of interpersonal relationships across groups for intergroup relations (e.g., Labianca et al., 1998).

### 8.3.3 Conceptual Issues in Intergroup Conflict Research

A lack of conceptual clarity exists regarding the construct and dimensionality of intergroup conflict. This is reflected in both theory and research, as has been discussed in chapter 1 in detail. Much more conceptual clarity and a more integrative framework would be needed to look at the different facets of intergroup conflict. Given the bulk of theory and research on interpersonal and intragroup conflict, there is relatively little theoretical and empirical development regarding intergroup conflict. In particular, with a few exceptions (e.g., Erev et al., 1993), there is a strong focus on dysfunctional aspects, at the expense of beneficial aspects. Future research may pay more attention to the functional aspects of intergroup conflict, which have been suggested by some scholars (e.g., Putnam, 1997; Walton & Dutton, 1969), but would need much further elaboration.

A fruitful avenue might be to use concepts that have been developed within social psychological intragroup research, and to adapt them to the intergroup level. For instance, application of minority dissent theory to the organizational level would allow predictions about how groups in work organizations could bring about organizational change and innovation through persistent dissent, given that the right strategies are chosen and organizational support for their actions is received (cf. Richter et al., 2005). Such applications of within group concepts and theories to the intergroup level, however, unlikely occur in a simple one-to-one fashion. Instead, Richter et al. (2005) argue that in addition to the management of the issue which is at stake, individuals need to pay explicit attention to the management of group boundaries (i.e., the management of categorisation and interdependence; Kramer, 1991).



### **8.3.4 Organizational Context and Intergroup Relations**

Additional factors that should be addressed in future intergroup relations research include aspects of the organizational context (cf. Alderfer's concept of embedded intergroup relations; Alderfer, 1987). In this thesis, the group dyad was treated as if it acted in isolation – yet an operating intergroup relationship is embedded within an organizational context, and is therefore likely to be influenced by top management strategies such as reward structures (Hartley, 1996), as well as organizational level constructs such as organizational climate and culture. Similarly, the dyad as entity is by itself a microscopic perspective, as teams frequently are embedded in sets of teams or multiteam systems (Mathieu et al., 2001), which may embrace the coordinated efforts of more than two teams. What factors of the wider organizational context affect intergroup relations, and in what way? To my knowledge, with some exceptions from researchers using social network analysis (e.g., Labianca et al., 1998), very limited research and theory has dealt with those questions.

### **8.3.5 Intergroup Relations and Organizational Level Outcomes**

Alderfer and Smith (1982) pointed out that intergroup relations have outcomes at the individual, the group, the intergroup, and the organizational level, and that it is important to look at all these levels to thoroughly understand effects intergroup relations may have. With the exception of a few studies (e.g., Nelson, 1989), very little research has looked at how relationships among (as opposed to between) groups are related to organizational level outcomes. Similarly, within this research, the organizational level has not been considered. Interesting research questions may include an analysis of the relative contributions of group versus intergroup constructs in predicting organizational level outcomes. For instance, would



group or rather intergroup effectiveness represent a more important predictor of overall organizational effectiveness?

### **8.3.6 Leadership in Intergroup Relations**

Another issue involves that not every individual within a team may occupy a meaningful role in managing intergroup transactions – leadership theory in the scope of intergroup relations frequently pointed out that during intergroup conflict strong leaders emerge (cf. Alderfer, 1987). Historical examples, for example the role of dictators such as Hitler, would also suggest reversed causality, such that leader's behaviour may affect and shape relationships between groups. How leaders or boundary spanners manage and affect intergroup relations for intergroup performance outcomes has received little attention in intergroup relations and boundary spanning frameworks. Recent research suggests functional leader behaviour is related to multiteam system performance in the laboratory (DeChurch & Marks, in press). An interesting future research topic would be to see to what extent leader behaviour, attitude, and personality affect organizational intergroup outcome *beyond* mere representation of her or his group's interests. Both boundary spanning theory (Adams, 1967) and intergroup relations theory (Alderfer, 1987) have considered leader characteristics and behaviour predominantly as an outcome of intergroup relations. Leadership theory might complement this view by theorising how leaders manage relationships between groups.

### **8.3.7 Intergroup Effectiveness as a New Research Agenda**

If compared to other organizational performance levels, such as individual, group, and organizational, intergroup effectiveness received very little attention. The measure developed within this research project certainly needs further development, and its factor structure needs

further clarification. Within this research, the concept of intergroup effectiveness has been investigated as an outcome of intergroup competition. However, a number of factors that might predict intergroup effectiveness could be investigated in both laboratory and field settings. Experimental paradigms to investigate related research questions on cross group behaviour have been developed (e.g., Marks, DeChurch, Mathieu, Panzer, & Alonso, in press; Keenan & Carnevale, 1989). Content areas of interest may include intergroup interdependence, aspects of intergroup attitudes and behaviour, and leadership behaviour, to name but a few. Finally, intergroup effectiveness itself could represent a condition that affects intergroup relations. For example, intergroup effectiveness might result in low levels of intergroup conflict or high levels of intergroup trust.

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**APPENDICES**

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## **Appendix 1:** Interview Guide

VP No.:

**Part 1: Establishing rapport, general questions, and introduction of the Critical Incident Technique**

Participant's ID:

Your profession:

Position in the team:

**Introducing CIT**

The purpose of this research is to investigate how well different teams work together, how this influences the effectiveness with which they perform their tasks, and which factors facilitate and hinder this process. Questions will refer to members of this other team or work group (apart from management) that your team has most important interactions with to accomplish your team's goals.

This interview aims to identify critical incidents that occur between teams in this organisation, how these incidents are dealt with, and what consequences occurred.

The content of this interview will be treated completely confidential by the research team. A summary of all interviews will be forwarded to the organisation in such a way that it will not be possible to identify participants. Do you feel comfortable if the interview will be audio taped? This would facilitate the analysis and make it more objective. All recorded transcripts will be held at Aston until the analysis has been completed and the guidelines for a Ph.D. at Aston require (currently this data has to be kept until 2 years after completion). Afterwards, all recorded transcripts will be destroyed.

The suggested procedure is as follows: Firstly, I will ask you some general questions about the way both teams work together; then I would like you to explore two recent, significant incidents in which you had a disagreement or problem with a member of the other team that was relevant for your team's task accomplishment. I will then ask more precise questions regarding those incidents. The interview will last approximately 50 minutes.

Do you have any questions regarding the procedure so far?

***General questions:***

How would you describe everyday work of your team? What sort of tasks does your team work on?

Why do members of your team work with members of the other team together?

How would you describe the relationship between both teams?

What types of disagreements or problems arise between both teams?

*Could you now describe two recent, significant incidents in which you discussed a disagreement or problem with a member of the other team?*

### *Part 2: The Critical Incident Technique*

*Pick up the most relevant incident.*

#### ***General questions:***

Could you please describe in detail what occurred? (Everyday interactions, sharing workloads where a situation came up, that you remember vividly? It can be a problem which was obviously resolved very well?)

*-Explore the incident-*

What was the situation like in which the incident occurred?

About what were you both really contending?

What did the parties concerned feel?

What was the opponent's profession and team position?

### *Part 3: Structured Questions*

#### ***Competition and Cooperation:***

Please focus on the objectives that you and the other were trying to accomplish. To what extent do you feel did you follow cooperative or competitive goals?

Could you please indicate on a scale from (1) for "strongly disagree" to (5) for "strongly agree", to which extent you agree with the following statements?

1. Both teams want each other to succeed.
2. Both teams "swim or sink" together.



3. Both teams seek joint goals.
4. Both teams have the same goals.
5. The goals of both teams are not reconcilable with each other.
6. Both teams try to show that they are superior to each other.
7. Team members structure things in ways that favour their own goals rather than the goals of the other team.
8. Both teams have a “win-lose” relationship.
9. Both teams working together usually have common goals.
10. Team members give high priority to the things their team wants to accomplish and low priority to the things members of the other team want to accomplish.

*Negotiation style (self):*

General question: How did you deal with this incident?

The following questions refer to how you dealt with this incident; could you please indicate on a scale from (1) for “not at all” to (5) for “very much”, to which degree the statements met your behaviour:

1. I gave in to the wishes of the other party.
2. I concurred with the other party.
3. I tried to accommodate the other party.
4. I adapted to the other party’s goals and interests.
5. I tried to reach a middle-of-the-road solution.
6. I emphasized that we have to find a compromise solution.
7. I insisted we both give in a little.
8. I strove whenever possible towards a fifty-fifty compromise.
9. I pushed my own point of view.
10. I searched for gains.
11. I fought for a good outcome for myself.

12. I did everything to win.
13. I examined issues until I found a solution that really satisfied me and the other party.
14. I stood up for my own and other's goals and interests.
15. I examined ideas from both sides to find a mutually optimal solution.
16. I worked out a solution that serves my own as well as the other's interests as well as possible.
17. I avoided confrontation about our differences.
18. I avoided differences of opinion as much as possible.
19. I tried to make differences look less severe.
20. I tried to avoid confrontation with the other.

***Trust:***

In the following statements you will be asked to describe your opinion about how this member of team X dealt with this incident on a scale from (1) for "strongly disagree" to (5) for "strongly agree".

1. I felt that he tried to get the upper hand.
2. In my opinion, (s)he is reliable.
3. I felt that (s)he negotiated with me honestly.
4. I felt that (s)he tried to get out of her commitments.
5. I think that (s)he did not mislead me.
6. I think that (s)he took advantage of our problems.

***Negotiation style (other):***

General question: How did the other party deal with the incident?

The following questions refer to how the other party dealt with this incident; could you please indicate on a scale from (1) for "not at all" to (5) for "very much", to which degree the statements met her (his) behaviour:

1. (S)he gave in to my wishes.

2. (S)he concurred with me.
3. (S)he tried to accommodate me.
4. (S)he adapted to my goals and interests.
5. (S)he tried to reach a middle-of-the-road solution.
6. (S)he emphasized that we have to find a compromise solutions.
7. (S)he insisted we both give in a little.
8. (S)he strove whenever possible towards a fifty-fifty compromise.
9. (S)he pushed her own point of view.
10. (S)he searched for gains.
11. (S)he fought for a good outcome for herself.
12. (S)he did everything to win.
13. (S)he examined issues until (s)he found a solution that really satisfied her (him) and me.
14. (S)he stood up for her own and my goals and interests.
15. (S)he examined ideas from both sides to find a mutually optimal solution.
16. (S)he worked out a solution that serves her own as well as my interests as well as possible.
17. (S)he avoided confrontation about our differences.
18. (S)he avoided differences of opinion as much as possible.
19. (S)he tried to make differences look less severe.
20. (S)he tried to avoid confrontation with me.

***Intergroup Effectiveness:***

General question: How did this incident influence the way the task was accomplished? Could you describe the outcome of this incident in detail?

*-Explore the outcome in depth-*



To what extent did you both *work effectively together* in order to provide better services to patients, on a scale from (1) “to no extent” to (5) “great extent”?

1. To what extent did you feel the incident was dealt with *productively*, on a scale from (1) “to no extent” to (5) “great extent”?
2. To what extent did you both *make effectively use of each other’s resources* (e.g., time to invest, support etc.) in order to provide better patient care?
3. To what extent did working on this incident entail *too much loss of time and energy* on trying to reach *enduring agreements*, on a scale from (1) “to no extent” to (5) “great extent”?
4. To what extent did *you* carry out your responsibilities and commitments in regard to this other person, on a scale from (1) “to no extent” to (5) “great extent”?
5. To what extent did *this other person* carry out her (his) responsibilities and commitments in regard to you, on a scale from (1) “to no extent” to (5) “great extent”?

**Appendix 2:**            Examples of Fictive Conflict  
                                 Incidents

**Example 1:**

Nurse: Well, we usually get along very well with the Doctors from the other team. We really don't have any disagreements. However, there was one little thing where I wanted to ask him for a recipe for a patient, and somehow felt that the recipe did not really meet the patient's needs. I then suggested that there might be other issues with this. However, this Doctor usually doesn't want anyone to advice him on diagnostic issues; but I felt I had to address it anyway. So he listened to it, but did not pick the issue up. Eventually, he did it his way and the patient did receive the same recipe. Yes I was a bit frustrated, it is just, you know, as a nurse your voice doesn't really count enough. Even though you may know how to do it better, your just not the same (as the doctors).

**Example 2:**

Nurse: Yes, there was once such an incident with a member of Social Services. We needed cover for a patient in order to organise his way back to the family. However, they delegated the issue further and further, and eventually said this would not be part of their duty. They said we would be in charge as district nurses. Obviously, that is wrong, so we had a little discussion on the phone. Yes, it was a bit tensed, however, and we then postponed the issue to the next meeting. Really, there is some recurring problem with who should do what between both teams. I asked my team leader to bring it up, and he felt this should belong into the meeting. So we discussed it there, and we came up with an agreement that they eventually take over things like that.



## **Appendix 3: Interview Rating Scheme**

Participant's ID:  
(Please enter the abbreviation from the transcript)

**(1) Conflict over issues:**

*This is conflict over resources:*

**Rating Format:** (1) To no extent, (2) little extent, (3) some extent, (4) considerable extent, (5) great extent

1. Both teams are fighting over limited resources (e.g., money, manpower, time to invest, etc.)
2. The issue both are arguing about is rooted in time, money, manpower, or other resources both share or provide each other with.
3. Scarcity of resources (e.g., money, manpower, time to invest, etc.) is the source of this dispute between both teams.
4. If sufficient resources (i.e., money, manpower, time to invest, etc.) were available, the dispute wouldn't have emerged in the first place.

*This is Informational Conflict:*

***A.) Evaluative Conflict :***

**Rating Format:** (1) To no extent, (2) little extent, (3) some extent, (4) considerable extent, (5) great extent

1. This conflict is about taste rather than finding the one best solution.
2. This conflict is about different styles and ways of doing things, rather than the truth.
3. The tension is rooted in disagreements about evaluative issues (i.e., do not have a single correct solution).
4. The dissent is evaluative in nature.

***B.) Intellectual Conflict:***

**Rating Format:** (1) To no extent, (2) little extent, (3) some extent, (4) considerable extent, (5) great extent

1. The conflict is about finding the best solution.
2. The tension is rooted in disagreements about the best way to do it, and not different styles or taste.
3. This conflict is about finding the correct solution according to commonly accepted standards.
4. The dissent involves debates over factual things.

**(2) Conflict over goals:**

Please focus on the objectives between both individuals. To what extent do you feel did they follow cooperative or competitive goals?

**Rating Format:** (1) strongly disagree, (2) disagree, (3) neither agree nor disagree, (4) agree, (5) strongly agree

1. Both teams want each other to succeed.
2. Both teams "swim or sink" together.
3. Both teams seek joint goals.
4. Both teams have the same goals.
5. The goals of both teams are not reconcilable with each other.
6. Both teams try to show that they are superior to each other.
7. Team members structure things in ways that favour their own goals rather than the goals of the other team.
8. Both teams have a "win-lose" relationship.
9. Both teams working together have common goals.
10. Team members give high priority to the things their team wants to accomplish and low priority to the things members of the other team want to accomplish.



### **(3) Conflict over “means”:**

*How would you characterise interaction between the 2 individuals?*

**Rating Format:** (1) not at all, (2) to a limited extent, (3) somewhat, (4) to a large extent, (5) completely

#### *Task Conflict*

1. Diverse perspectives on important issues are the rule rather than the exception.
2. Both have very different ideas on important matters.
3. Both have disagreements about a task/project they are working on.
4. Both agree on the course to take from the outset.
5. Both have different opinions on task-related issues.
6. Both have animated discussions about different opinions.
7. Both predominantly have identical ideas on the subjects involved.

#### *Relationship Conflict*

1. The encounter between both teams is frustrating.
2. The personal relationships are excellent.
3. The atmosphere is very companionable.
4. The tension is painful.
5. The Encounter between both produces anger.
6. Both get on personally very well.

#### *Process Conflict*

1. There are disagreements about “who should do what” between both.
2. There is conflict about task responsibilities between both.
3. There is disagreement about resource allocation between both.

#### **(4) Further descriptions of the conflict incident:**

*The incident contains emotionality:*

**Rating Format:** (1) To no extent, (2) little extent, (3) some extent, (4) considerable extent, (5) great extent

*The scope/size of the issue:*

**Rating Format:** (1) *Of no relevance* (2) *little relevance*, (3) *some relevance* (4) *considerable relevance*, (5) *great relevance*

*The integrative potential of the incident:*

**Rating Format:** (1) No integrative potential, (2) little integrative potential, (3) some integrative potential, (4) considerable integrative potential, (5) great integrative potential

#### **(5) Intergroup Effectiveness:**

**Question from interview:** How did this incident influence the way the task was accomplished? Could you describe the outcome of this incident in detail?

**Rating Format:** (1) *to no extent*, (2) *little extent*, (3) *some extent*, (4) *considerable extent*, (5) *great extent*

##### *Criterion 1: System Responsiveness*

1. To what extent did both teams work effectively together in order to respond to *tasks or duties that emerged from working within the Trust* (e.g., coordinating cross-team activities, assignment of organisational duties, etc.)?
2. To what extent did both teams *work effectively together* in order to provide better services to patients?
3. To what extent did you feel the *relationship* between both teams was *productive*?
4. To what extent did both teams work effectively together in order to respond to *problems or flaws that emerged from working within the Trust* (e.g., staff or time shortage, etc.)?

##### *Criterion 2: Resource exchange*

1. For *this other team* to accomplish its goals and responsibilities, to what extent did it receive the expected services, resources, or support from the interviewee's team?
2. For *the interviewee's team* to accomplish its goals and responsibilities, to what extent did it receive the expected services, resources, or support from this other team?

3. To what extent did both teams effectively *help each other out* if resources (e.g., time to invest, people or staff, support etc.) were needed?
4. To what extent did both teams *make effectively use of each other's resources* (e.g., time to invest, people or staff, support etc.) in order to provide better patient care?

*Criterion 3: Transaction costs*

1. To what extent did working with this other team result in *too many constraints* (e.g., time/staff shortage etc.) for the interviewee's team's everyday activities?
2. To what extent did working with the interviewee's team result in *too many constraints* (e.g., time/staff shortage etc.) for this other team's everyday activities?
3. To what extent did working with this other team entail *too much loss of time and energy* on trying to reach *enduring agreements*?
4. To what extent was there *too much disagreement about resource allocation* (e.g. time to invest, people or staff, allocation of tasks or duties, etc.) between the interviewee's team and this other team?

*Criterion 4: Viability*

1. To what extent did *the interviewee's team* carry out its responsibilities and commitments in regard to this other team?
2. To what extent did *this other team* carry out its responsibilities and commitments in regard to the interviewee's team?
3. If you consider the fairness of the give-and-take relationship with this team, to what extent did you feel that *this other team* should have given more than it did?
4. If you consider the fairness of the give-and-take relationship with this other team, to what extent did you feel that *the interviewee's team* should have given more than it did?



## Appendix 4:

## Research Booklet

Aims of the Research:

**Research Outline:**

**Facilitating Collaboration**  
**between Teams in Primary Care**  
**Trusts**

### Aims of the Research:

The research aims to investigate how **relationships between teams** influence aspects of **team effectiveness**, including innovativeness, the extent to which teams meet their performance standards, and team members' professional learning and well being.

In doing so, the focus will be on the following aspects of inter-team relations:

- ✓ The way **communication** occurs between teams (e.g., collaboratively and open-mindedly vs. competitively)
- ✓ The role of **trust** between teams
- ✓ **Problems and critical issues** that emerge between teams

### Benefits for the Organisation:

Based on the findings, the researcher will offer:

- ✓ A **written report of key results**, including **suggestions how to improve collaboration between teams**, to Top Management and Human Resources
- ✓ An **oral presentation** of key findings to all participants
- ✓ A **single-team feedback report** to participating teams on request

The findings aim to **provide a picture of strengths and pitfalls of inter-team relations** within the PCT by frontline staff. They may also present a useful basis for

- ✓ Training purposes
- ✓ Change management
- ✓ Quality improvement



### Extent of Required Participation:

- ✓ **Participating teams and work groups** will be asked to fill in a short questionnaire once at the beginning of the project (Questionnaire A) and once five months later (Questionnaire B).
- ✓ Those interested in volunteering for a **one-time interview** about this topic may indicate this in the questionnaire and would be approached by the researcher accordingly.
- ✓ **Middle management** would be asked to provide ratings of team effectiveness once at the beginning of the project (Effectiveness rating A) and once five months later (Effectiveness rating B).

| Research Instruments   | Participants      | Time expenditure requested by participants |
|------------------------|-------------------|--|
| Questionnaire A        | Team members      | ~ 25 minutes                               |
| Interviews             | Team members      | ~ 50 minutes                               |
| Questionnaire B        | Team members      | ~ 10 minutes                               |
| Effectiveness rating A | Middle management | ~ 5 minutes                                |
| Effectiveness rating B | Middle management | ~ 5 minutes                                |

- ✓ If suitable, existing team effectiveness indicators (e.g., the organisation's performance assessment systems) could be incorporated into the research as well.

These requests are flexible to a certain degree, and may be extended or reduced, to meet the particular needs, interests, and restraints of the participating organisations.

**Contact:**

If you are interested in the research or would like to discuss any of the above in more detail, please contact:

Andreas Richter  
715 South Wing  
Aston University, Aston Triangle  
Birmingham B4 7ET  
Phone: 0121 359 3611 Extension 5304  
E-mail: [richteaw@aston.ac.uk](mailto:richteaw@aston.ac.uk)

The outlined research is part of a bigger project and will contribute to the researcher's Ph.D.. The research pursues no financial interests of any kind. Findings may result in publications in academic journals with the organisations and participants involved kept anonymous. Participants' **confidentiality will be guaranteed at all times** during the research process. There is no financial support asked for. During the entire project, the researcher will be supervised by Professor Michael West.

## **Appendix 5:**

## **Team Data Collection Form**



Andreas Richter  
Doctoral Researcher  
Work & Organisational Psychology Group  
Aston University, Aston Triangle  
Birmingham B4 7ET  
Tel +44 (0)121 359 3611 ext 5304  
Fax +44 (0)121 359 2919  
Email [richteaw@aston.ac.uk](mailto:richteaw@aston.ac.uk)

Dear Madame or Sir,

Enquiry regarding participation in survey “*Facilitating Collaboration between Teams*”

We are conducting research that aims to provide practically useful knowledge about how cross-boundary working and team functioning may be facilitated.  
To gain useful results we need teams within your Trust to participate, and it would help us enormously if you and your team would agree to take part in this research.

The surveys include questions about the team you are working on and about cross team working with colleagues from other teams. Key concepts refer to team members’ learning and well being; team performance and innovativeness; trust and collaboration between teams.

*How long will it take?*

The study comprises **two questionnaires**; the first takes **about 25 minutes** to complete and the second (due 5 months later) **about 10 minutes**. Those interested in volunteering for a one-time interview about the topic may indicate this in the questionnaire and would be approached by the researcher accordingly.

*What do you get in return?*

Based on staff members’ opinions and views, the researchers at Aston would offer an **overall report of the project** as well as a **single-team feedback report** (the latter on request) that mirrors your team’s opinion about how your team is working together and how your team is working together with another team.

*What about the ethics of this research?*

The project will be carried out in several PCTs and is officially endorsed by the Trust. The information provided by the participants will be treated with **complete confidentiality**, questionnaires being returned directly to the researcher at Aston via prepaid envelope. Participation is **entirely voluntary**, the Trust will not get informed which team did or did not participate. Stepping back from this research at any stage will not have consequences of any kind for you. Feedback to the Trust will occur **in aggregated form**, protecting the anonymity of individual teams. Feedback to individual teams will occur in aggregated form,

protecting the anonymity of individual team members. Optionally, subject to your team's consent, your team's line manager would be asked to rate your team's effectiveness (please indicate whether or not you would consent to this on the enclosed team data collection form). These ratings would be forwarded to the PCT **in aggregated form** (summarising all participating teams), thereby keeping the ratings of single teams anonymous.

If your team agrees to participate, what do you need to do next?

Simply complete the **"team data collection form"** (enclosed) and send it via e-mail directly to Andreas Richter; the information on the form will enable us to efficiently handle the project. The form asks for:

- (1) **Your team's name**
- (2) A **contact person** from within your team that would agree to act as a liaison for the researcher. This person's role would be to distribute the questionnaires and feedback reports to individual team members.
- (3) The name of *the one other team or work group (apart from management) that your team interacts the most with*. Questions within the questionnaire would refer to this team.
- (4) Whether or not your team agrees that your team's line manager would be asked to provide ratings of your team's effectiveness.
- (5) **Names of members of your team**

Should you have any questions or queries, please contact Andreas Richter by the letterhead.

Thank you very much in advance.

Sincerely yours,

Andreas Richter

**Enc:** Team Data Collection Form

### Team Data Collection Form

|   |  |
|---|--|
| <b>(1) Name of this team:<sup>1</sup></b> |  |
|---|--|

|  |  |
|--|--|
| <b>(2) Contact person<br/>within your team, with<br/>address and e-mail or<br/>phone number:</b> |  |
|--|--|

|   |  |
|---|--|
| <b>(3) Name of other team:<sup>1</sup></b><br><i>(This should be the one<br/>other team or work group<br/>(apart from management)<br/>that your team has most<br/>interactions with.)</i> |  |
|---|--|

|  |  |                                       |
|--|--|---------------------------------------|
| <b>(4) Line manager's effectiveness ratings:</b><br>Would your team consent that the researcher asks your<br>team's line manager for ratings of team effectiveness?<br><i>(Please tick respective box)</i> | <b>Yes</b><br><input type="checkbox"/> | <b>No</b><br><input type="checkbox"/> |
|--|--|---------------------------------------|

|   |                                    |
|---|------------------------------------|
| <b>(5) Names of members of your team:</b> | <b>Title (e.g., Dr., Ms., Mr.)</b> |
|---|------------------------------------|

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| 10. |  |

<sup>1</sup> *(Should either team not have a formal name, please provide a suitable name or description that members of your team will recognise)*



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## **Appendix 6:**                      Questionnaire Time 1

Team ID \_\_\_\_\_  
 Your ID \_\_\_\_\_  
 These identification numbers will  
 be kept separately from your and  
 your team's name

## Facilitating Collaboration between Teams

### What is this survey?

This is a survey of your views about your work within your team and your opinions about the relationship between your team and another team in this PCT during the past 5 months.

This is not a test. There are no right or wrong answers. We want to know *your* personal views on the issues raised in the questionnaire and what *you* think about the team you work in. The questionnaire consists of three sections:

**Section 1:** Asks about your views regarding how your team works together.

**Section 2:** Asks about your views regarding the relationship between your team and another team.

**Section 3:** Asks some biographical details needed to enable us to compare the views of different members of staff.

### Who will see my answers?

The information you give is **totally confidential**. No one, other than the researchers at Aston will see your answers. A report will be sent to the organisation in aggregated form. Reports to individual teams will not identify individual responses and will simply summarise data for all team members, thus protecting your anonymity and confidentiality. These reports will not be distributed elsewhere.

### How long will it take?

The questionnaire will take about 25 minutes to complete.

### How do I fill in this survey?

Please read each question carefully and give your immediate response. Most statements ask you to indicate the *degree or extent of your view* by circling a number on a predetermined scale which best reflects your opinion. We are interested in *your views* about the statements. Please answer all questions as openly and honestly as possible. *Please always circle only one number for each statement.*

**As an example**, a question in this survey could be whether, *in your opinion*, the team keeps in regular contact with each other. If you believe that this is the case, most of the time, but there are occasional exceptions you would circle the number 4 to indicate that you "agree", as shown below.

|   | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|-------------------|----------|----------------------------|-------|----------------|
| We keep in touch with each other as a team. | 1                 | 2        | 3                          | 4     | 5              |

Do not spend too long on any question. Try to answer according to your **first reaction**.

Once you've completed this questionnaire, please put it into the prepaid envelope and send it straight to the researcher.



## Section I: Your team

*The following section focuses on your team. It refers to what sort of team you are in, your relationship with your team and Primary Care Trust, how you feel about your team, and how well your team works together.*

### 1.1. How accurate is the statement in describing your team?

|  | Very Inaccurate | Somewhat Inaccurate | Neither Accurate nor Inaccurate | Somewhat Accurate | Very Accurate |
|--|-----------------|---------------------|---------------------------------|-------------------|---------------|
| Team membership is quite clear – everybody knows exactly who is and isn't in the team.   | 1               | 2                   | 3                               | 4                 | 5             |
| There is so much ambiguity about who is in this team that it would be nearly impossible to generate an accurate membership list. | 1               | 2                   | 3                               | 4                 | 5             |
| Different people are constantly joining and leaving this team.   | 1               | 2                   | 3                               | 4                 | 5             |
| This team is quite stable, with few changes in membership.   | 1               | 2                   | 3                               | 4                 | 5             |
| Members of this team have their own individual jobs to do, with little need for them to work <i>together</i> .                   | 1               | 2                   | 3                               | 4                 | 5             |
| Generating the outcome or product of this team requires a great deal of communication and coordination among members.            | 1               | 2                   | 3                               | 4                 | 5             |

*Beyond actually carrying out the work, does your team have the authority to decide about other matters? Please tick "no" or "yes" for each of the items listed below.*

**Our team also has the authority ...**

|  |                              |                             |
|--|------------------------------|-----------------------------|
| ... to monitor our own work processes and to change or adjust them if needed.  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| ... to select new team members, or to ask an existing member to leave the team.  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| ... to alter features of the larger organization that are affecting our team or its work (for example, the resources available to us, the information we receive, training procedures, and so on). | Yes <input type="checkbox"/> | No <input type="checkbox"/> |
| ... to specify what our team exists to accomplish, its main purposes.  | Yes <input type="checkbox"/> | No <input type="checkbox"/> |

### 1.2. Now please indicate how you personally feel about your team (please refer to the past 5 months)

|  | Strongly Disagree | Disagree | Neither agree nor disagree | Agree | Strongly Agree |
|--|-------------------|----------|----------------------------|-------|----------------|
| I learn a great deal from my work on this team.                  | 1                 | 2        | 3                          | 4     | 5              |
| I am satisfied with my present colleagues in my team.            | 1                 | 2        | 3                          | 4     | 5              |
| I am very satisfied with working in this team.                   | 1                 | 2        | 3                          | 4     | 5              |
| I am pleased with the way my colleagues and I work together.     | 1                 | 2        | 3                          | 4     | 5              |
| My own creativity and initiative are suppressed by this team.    | 1                 | 2        | 3                          | 4     | 5              |
| Working on this team stretches my personal knowledge and skills. | 1                 | 2        | 3                          | 4     | 5              |

### 1.3. Your relationship with your team and the PCT (please refer to the past 5 months)

|  | Strongly Disagree | Disagree | Neither agree nor disagree | Agree | Strongly Agree |
|--|-------------------|----------|----------------------------|-------|----------------|
| I see myself as a member of this team.                 | 1                 | 2        | 3                          | 4     | 5              |
| I am pleased to be a member of this team.              | 1                 | 2        | 3                          | 4     | 5              |
| I feel strong ties with members of this team.          | 1                 | 2        | 3                          | 4     | 5              |
| I identify with other members of this team.            | 1                 | 2        | 3                          | 4     | 5              |
| I see myself as a member of (Trust's name) PCT.        | 1                 | 2        | 3                          | 4     | 5              |
| I am pleased to be a member of (Trust's name) PCT.     | 1                 | 2        | 3                          | 4     | 5              |
| I feel strong ties with members of (Trust's name) PCT. | 1                 | 2        | 3                          | 4     | 5              |
| I identify with other members of (Trust's name) PCT.   | 1                 | 2        | 3                          | 4     | 5              |

### 1.4 Your team's effectiveness

*During the past 5 months, to what extent do you feel that your team ...*

|   | Not at all | A little | Some-what | Con-siderably | Com-pletely |
|---|------------|----------|-----------|---------------|-------------|
| met the <i>standards of quality</i> expected by the PCT?        | 1          | 2        | 3         | 4             | 5           |
| met the <i>standards of quantity</i> expected by the PCT?       | 1          | 2        | 3         | 4             | 5           |
| met the <i>standards of timeliness</i> expected by the PCT?     | 1          | 2        | 3         | 4             | 5           |
| met the <i>standards of implementation</i> expected by the PCT? | 1          | 2        | 3         | 4             | 5           |
| had a <i>reputation for work excellence</i> within the PCT?     | 1          | 2        | 3         | 4             | 5           |

### 1.5 Your team's innovativeness

*Compared with other similar teams, how innovative do you consider your team was during the past 5 months?  
Circle the appropriate response to the following task areas:*

|  | Highly stable:<br>few changes introduced |   | Moderately innovative:<br>some changes introduced |   | Highly innovative:<br>many changes introduced |
|--|--|---|---|---|---|
| Setting work targets or objectives.                                  | 1  | 2 | 3   | 4 | 5   |
| Deciding the methods used to achieve objectives/targets.             | 1  | 2 | 3   | 4 | 5   |
| Initiating new procedures or information systems.                    | 1  | 2 | 3   | 4 | 5   |
| Developing innovative ways of accomplishing targets/objectives.      | 1  | 2 | 3   | 4 | 5   |
| Initiating changes in the job content and work methods of your team. | 1  | 2 | 3   | 4 | 5   |



## Section 2: Your team's relationship with other teams

The team named team X was identified as the other team or work group that your team has most important interactions with to accomplish your team's goals. The following section assesses your views about the relationship, objectives, and interaction between your team and this team.

| Not at all | Less than once a month | About once a month | About once a fortnight | About once a week | Several times a week | Daily |
|------------|------------------------|--------------------|------------------------|-------------------|----------------------|-------|
|------------|------------------------|--------------------|------------------------|-------------------|----------------------|-------|

Whilst working for your team during the past 5 months, how often did you interact on work related matters with members of team X?

1 2 3 4 5 6 7

If you have circled a number from 2 to 7 in the last question, indicating that you interacted with members of team X, move on to the next question. If you have circled a "1" indicating "not at all" to point out that you usually don't interact on work related matters with any member of this team, please go to section 2.4: "The interdependence of your team with team X" on page 7.

| No personal acquaintance | Not very well | Somewhat well | Quite well | Very well |
|--------------------------|---------------|---------------|------------|-----------|
|--------------------------|---------------|---------------|------------|-----------|

When you think of the person in team X you have the most contact with: How well are you personally acquainted with this person?

1 2 3 4 5

How many acquaintances or friends do you have in team X? (Insert numbers of acquaintances/friends)

\_\_\_\_\_  
(number)

During the past 5 months, how many hours per week did you spend on the average in coordinating work with members of team X (e.g., discussing and solving work problems encountered with this team, performing projects and activities)? (Insert hours per week spent)

\_\_\_\_\_  
(hours spent per week)



**2.1 What do you generally do when you have a disagreement or problem with a colleague of team X?**  
*(Please refer to the past 5 months)*

|  | Not at all | To a limited extent | Some-what | To a large extent | Com-pletely |
|--|------------|---------------------|-----------|-------------------|-------------|
| I concur with the other party.   | 1          | 2                   | 3         | 4                 | 5           |
| I emphasize that we have to find a compromise solution.                                    | 1          | 2                   | 3         | 4                 | 5           |
| I examine ideas from both sides to find a mutually optimal solution.                       | 1          | 2                   | 3         | 4                 | 5           |
| I do everything to win.  | 1          | 2                   | 3         | 4                 | 5           |
| I try to accommodate the other party.  | 1          | 2                   | 3         | 4                 | 5           |
| I adapt to the other party's goals and interests.  | 1          | 2                   | 3         | 4                 | 5           |
| I work out a solution that serves my own as well as other's interests as well as possible. | 1          | 2                   | 3         | 4                 | 5           |
| I try to reach a middle-of-the-road solution.  | 1          | 2                   | 3         | 4                 | 5           |
| I insist we both give in a little.   | 1          | 2                   | 3         | 4                 | 5           |
| I strive whenever possible towards a fifty-fifty compromise.                               | 1          | 2                   | 3         | 4                 | 5           |
| I push my own point of view.   | 1          | 2                   | 3         | 4                 | 5           |
| I search for gains.  | 1          | 2                   | 3         | 4                 | 5           |
| I fight for a good outcome for myself.   | 1          | 2                   | 3         | 4                 | 5           |
| I give in to the wishes of the other party.  | 1          | 2                   | 3         | 4                 | 5           |
| I try to make differences look less severe.  | 1          | 2                   | 3         | 4                 | 5           |
| I examine issues until I find a solution that really satisfies me and the other party.     | 1          | 2                   | 3         | 4                 | 5           |
| I stand up for my own and the other's goals and interests.                                 | 1          | 2                   | 3         | 4                 | 5           |
| I avoid confrontation about our differences.   | 1          | 2                   | 3         | 4                 | 5           |
| I avoid differences of opinion as much as possible.  | 1          | 2                   | 3         | 4                 | 5           |
| I try to avoid confrontation with the other.   | 1          | 2                   | 3         | 4                 | 5           |

## 2.2 Your relationship with members of team X

*How would you characterise your everyday interaction with members of team X? (Please refer to the past 5 months.)*

|  | Not at all | To a limited extent | Some-what | To a large extent | Com-pletely |
|--|------------|---------------------|-----------|-------------------|-------------|
| Diverse perspectives on important issues are the rule rather than the exception. | 1          | 2                   | 3         | 4                 | 5           |
| We frequently have very different ideas on important matters.                    | 1          | 2                   | 3         | 4                 | 5           |
| We frequently have disagreements about a task/project we are working on.         | 1          | 2                   | 3         | 4                 | 5           |
| We usually agree on the course to take from the outset.                          | 1          | 2                   | 3         | 4                 | 5           |
| We regularly have different opinions on task-related issues.                     | 1          | 2                   | 3         | 4                 | 5           |
| We frequently have animated discussions about different opinions.                | 1          | 2                   | 3         | 4                 | 5           |
| We predominantly have identical ideas on the subjects involved.                  | 1          | 2                   | 3         | 4                 | 5           |
| Encounters with members from this team are frequently frustrating.               | 1          | 2                   | 3         | 4                 | 5           |
| The personal relationships are always excellent.                                 | 1          | 2                   | 3         | 4                 | 5           |
| The atmosphere is usually very companionable.                                    | 1          | 2                   | 3         | 4                 | 5           |
| The tension we have is sometimes painful.  | 1          | 2                   | 3         | 4                 | 5           |
| Encounters with members from this team frequently produce anger.                 | 1          | 2                   | 3         | 4                 | 5           |
| We usually get on personally very well.  | 1          | 2                   | 3         | 4                 | 5           |

## 2.3 How effectively did your team work together with team X? (Please refer to the past 5 months)

|  | To no extent | Little extent | Some extent | Conside-rable extent | Great extent |
|--|--------------|---------------|-------------|----------------------|--------------|
| To what extent did both teams work effectively together in order to respond to tasks or duties that emerged from working within the PCT (e.g., coordinating cross-team activities, assignment of organisational duties, etc.)? | 1            | 2             | 3           | 4                    | 5            |
| To what extent did both teams effectively help each other out if resources (e.g., time to invest, people or staff, support etc.) were needed?  | 1            | 2             | 3           | 4                    | 5            |
| To what extent did working with this other team result in too many constraints (e.g., time/staff shortage etc.) for your team's everyday activities?   | 1            | 2             | 3           | 4                    | 5            |
| To what extent did you feel the relationship between your team and this other team was productive?   | 1            | 2             | 3           | 4                    | 5            |
| To what extent did both teams make effectively use of each other's resources (e.g., time to invest, people or staff, support etc.) in order to provide better patient care?  | 1            | 2             | 3           | 4                    | 5            |
| For your team to accomplish its goals and responsibilities, to what extent did you receive the expected services, resources, or support from this other team?  | 1            | 2             | 3           | 4                    | 5            |
| To what extent did both teams work effectively together in order to provide better services to patients?   | 1            | 2             | 3           | 4                    | 5            |
| To what extent did both teams work effectively together in order to respond to problems or flaws that emerged from working within the PCT (e.g., staff or time shortage, etc.)?  | 1            | 2             | 3           | 4                    | 5            |
| For this other team to accomplish its goals and responsibilities, to what extent did it receive the expected services, resources, or support from your team?   | 1            | 2             | 3           | 4                    | 5            |



|  | To no extent | Little extent | Some extent | Considerable extent | Great extent |
|--|--------------|---------------|-------------|---------------------|--------------|
| To what extent did working with this other team entail <i>too much loss of time and energy</i> on trying to reach <i>enduring agreements</i> ?   | 1            | 2             | 3           | 4                   | 5            |
| If you consider the <i>fairness</i> of the give-and-take relationship with this team, to what extent did you feel that <i>this other team</i> should have given more than it did?                  | 1            | 2             | 3           | 4                   | 5            |
| To what extent did working with your team result in <i>too many constraints</i> (e.g., time/staff shortage etc.) for this other team's everyday activities?  | 1            | 2             | 3           | 4                   | 5            |
| To what extent was there <i>too much disagreement about resource allocation</i> (e.g. time to invest, people or staff, allocation of tasks or duties, etc.) between your team and this other team? | 1            | 2             | 3           | 4                   | 5            |
| To what extent did <i>your team</i> carry out your responsibilities and commitments in regard to this other team?  | 1            | 2             | 3           | 4                   | 5            |
| To what extent did <i>this other team</i> carry out its responsibilities and commitments in regard to your team?   | 1            | 2             | 3           | 4                   | 5            |
| If you consider the <i>fairness</i> of the give-and-take relationship with this other team, to what extent did you feel that <i>your team</i> should have given more than it did?                  | 1            | 2             | 3           | 4                   | 5            |

## 2.4 The interdependence of your team with team X (please refer to the past 5 months)

|  | Not very important | Some-what important | Quite important | Very important | Absolutely crucial |
|--|--------------------|---------------------|-----------------|----------------|--------------------|
| How important is <i>this other team</i> in attaining the goals of your team? | 1                  | 2                   | 3               | 4              | 5                  |
| How important is <i>your team</i> in attaining the goals of this other team? | 1                  | 2                   | 3               | 4              | 5                  |

|  | Not at all | Very little | Some | Quite a bit | Very much |
|--|------------|-------------|------|-------------|-----------|
| For <i>your team</i> to accomplish its goals and responsibilities, how much do you need the services, resources, or support from this other team?  | 1          | 2           | 3    | 4           | 5         |
| For <i>this other team</i> to accomplish its goals and responsibilities, how much does it need the services, resources, or support from your team? | 1          | 2           | 3    | 4           | 5         |

|   | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|-------------------|----------|----------------------------|-------|----------------|
| Both teams want each other to succeed.  | 1                 | 2        | 3                          | 4     | 5              |
| Both teams "swim or sink" together.   | 1                 | 2        | 3                          | 4     | 5              |
| Both teams seek joint goals.  | 1                 | 2        | 3                          | 4     | 5              |
| Both teams have the same goals.   | 1                 | 2        | 3                          | 4     | 5              |
| The goals of both teams are not reconcilable with each other.   | 1                 | 2        | 3                          | 4     | 5              |
| Both teams try to show that they are superior to each other.  | 1                 | 2        | 3                          | 4     | 5              |
| Team members structure things in ways that favour their own goals rather than the goals of the other team.  | 1                 | 2        | 3                          | 4     | 5              |
| Both teams have a "win-lose" relationship.  | 1                 | 2        | 3                          | 4     | 5              |
| Both teams working together usually have common goals.  | 1                 | 2        | 3                          | 4     | 5              |
| Team members give high priority to the things their team wants to accomplish and low priority to the things members of the other team want to accomplish. | 1                 | 2        | 3                          | 4     | 5              |



**2.5** The following statements describe your opinion about members of team X (*please refer to the past 5 months*)

|  | Strongly disagree | Disagree | Neutral | Agree | Strongly agree |
|--|-------------------|----------|---------|-------|----------------|
| I think that the people in the other team meet their negotiated obligations to our team. | 1                 | 2        | 3       | 4     | 5              |
| I feel that people in the other team take advantage of people who are vulnerable.        | 1                 | 2        | 3       | 4     | 5              |
| I feel that the people in the other team negotiate with us honestly.                     | 1                 | 2        | 3       | 4     | 5              |
| In my opinion, people in the other team are reliable.                                    | 1                 | 2        | 3       | 4     | 5              |
| I think that the people in the other team succeed by stepping on other people.           | 1                 | 2        | 3       | 4     | 5              |
| I feel that the people in the other team try to get the upper hand.                      | 1                 | 2        | 3       | 4     | 5              |
| I think that the people in the other team take advantage of our problems.                | 1                 | 2        | 3       | 4     | 5              |
| I feel that the people in the other team will keep their word.                           | 1                 | 2        | 3       | 4     | 5              |
| I think that people in the other team do not mislead us.                                 | 1                 | 2        | 3       | 4     | 5              |
| I feel that people in the other team try to get out of their commitments.                | 1                 | 2        | 3       | 4     | 5              |
| I think the people in the other team tell the truth in negotiations.                     | 1                 | 2        | 3       | 4     | 5              |
| I feel that people in the other team negotiate joint expectations fairly.                | 1                 | 2        | 3       | 4     | 5              |

**2.6** If you are a person involved in interaction with members of team X, would you be interested in participating in a one-time interview about this topic?

|   |                          |  |
|---|--------------------------|--|
| No  | <input type="checkbox"/> |  |
| Yes   | <input type="checkbox"/> |  |
| please contact me at _____<br>_____<br><div style="text-align: center; margin-top: 10px;">(Please provide e-mail, phone or address details as convenient)</div> |                          |  |

**Please proceed to the final section!**

### Section 3: Background information about you and your team

*About your team: Please always tick only one box when multiple choices are offered*

**3.1. How long has the Team been set up?**

Less than 6 months ☐

Between 1 and 2 years ☐

Less than 1 year ☐

2 years or more ☐

**3.2. Is this the principal team with which you work?**

Yes ☐

No ☐

**3.3. Is this team temporary or permanent?**

Temporary ☐

Permanent ☐

**3.4. Which of the following types of staff comprises your team?**

Administrative & Clerical staff (e.g. PA) ☐

Community Psychiatric Nurse ☐

District Nurse ☐

General Practitioner ☐

Health Visitor ☐

Practice Manager ☐

Midwife ☐

Practice Nurse ☐

Receptionist ☐

Social Worker ☐

Pharmacist ☐

Other (please specify) \_\_\_\_\_

**3.5. How many people in total work in your team?**

\_\_\_\_\_ (i.e. receptionists, nurses, etc)

**3.6. How many times does the team meet in a month?**

\_\_\_\_\_ times per month

**3.7. How many people left the team during the past 5 months?**

\_\_\_\_\_ people

**3.8. To what extent is there a clear overall leader/co-coordinator in your team?**

There is a single very clear leader/co-ordinator ☐

A number of people lead/co-ordinate the team ☐

There is no clear leader/co-ordinator ☐

There is conflict over who leads/co-ordinates the team ☐

We all have leadership/co-ordinator roles ☐

| Not at all | To a limited extent | Some-what | To a large extent | Com-pletely |
|------------|---------------------|-----------|-------------------|-------------|
|------------|---------------------|-----------|-------------------|-------------|

**3.9. Do the team leader(s) represent the team's interests in negotiations with other teams or outsiders?**

1

2

3

4

5

**3.10. Do you consider yourself to be the principal leader or team co-ordinator of this Team?**

No ☐

Yes ☐

**About you: Please always tick only one box when multiple choices are offered**

**3.11. Your job title:**

|   |                          |                              |                          |
|---|--------------------------|------------------------------|--------------------------|
| Administrative & Clerical staff (e.g. PA) | <input type="checkbox"/> | Practice Manager             | <input type="checkbox"/> |
| Community Psychiatric Nurse               | <input type="checkbox"/> | Midwife                      | <input type="checkbox"/> |
| District Nurse                            | <input type="checkbox"/> | Practice Nurse               | <input type="checkbox"/> |
| General Practitioner                      | <input type="checkbox"/> | Receptionist                 | <input type="checkbox"/> |
| Health Visitor                            | <input type="checkbox"/> | Other (please specify) _____ |                          |

**3.12. Are you**

Female ☐

Male ☐

**3.13. How old are you?**

\_\_\_\_\_ years

**3.14. How long have you worked in your present position?**  
(e.g. how long have you been a Practice Nurse/GP)

\_\_\_\_\_ years \_\_\_\_\_ months

**3.15. How long have you worked in this team?**

\_\_\_\_\_ years \_\_\_\_\_ months

**3.16. Who is your employer? (e.g., PCT, GP Practice)**

\_\_\_\_\_

**3.17. How many other teams do you work in?**

\_\_\_\_\_ teams

**3.18. Do you have any additional comments you would like to make in relation to the issues covered in this survey?**

**3.19. Would you like to receive a feedback report about the overall results of this survey?**

No ☐

Yes ☐

**3.20. Would you like to receive a feedback report about the results of your team?**

No ☐

Yes ☐

**Many thanks for completing this questionnaire. It will be a valuable contribution to our study about how to improve relationships between teams in your PCT. Please place the questionnaire in the pre-paid envelope provided, seal it, and post it back to the researcher within the next 14 days.**

**!Thank you for your cooperation!**



## **Appendix 7:**            Questionnaire Time 2

Team ID \_\_\_\_\_  
 These identification numbers will  
 be kept separately from your and  
 your team's name

## Facilitating Collaboration between Teams

### What is this survey?

This is a survey of your views about your work within your team and your opinions about the relationship between your team and another team in this PCT during the past 5 months.

This is not a test. There are no right or wrong answers. We want to know *your* personal views on the issues raised in the questionnaire and what *you* think about the team you work in. The questionnaire consists of two sections:

**Section 1:** Asks about your views regarding how your team works together.

**Section 2:** Asks about your views regarding the relationship between your team and another team.

### Who will see my answers?

The information you give is **totally confidential**. No one, other than the researchers at Aston will see your answers. A report will be sent to the organisation and participating teams about this project in **aggregated** form, thus protecting your team's anonymity and confidentiality.

### How long will it take?

The questionnaire should take **10 minutes** to complete.

### How do I fill in this survey?

Please read each question carefully and give your immediate response. Most statements ask you to indicate the *degree or extent of your view* by circling a number on a predetermined scale which best reflects your opinion. We are interested in *your views* about the statements. *Please always circle only one number for each statement.*

**As an example**, a question in this survey could be whether, *in your opinion*, the team keeps in regular contact with each other. If you believe that this is the case, most of the time, but there are occasional exceptions you would circle the number 4 to indicate that you "agree", as shown below.

|   | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|-------------------|----------|----------------------------|-------|----------------|
| We keep in touch with each other as a team. | 1                 | 2        | 3                          | 4     | 5              |

Do not spend too long on any question. Try to answer according to your **first reaction**.

Once you've completed this questionnaire, please put it into the prepaid envelope and send it straight to the researcher.

## Section I: Your team

**1.1. Now please indicate how you personally feel about your team (please refer to the past 5 months)**

|  | Strongly<br>Disagree | Disagree | Neither<br>agree nor<br>disagree | Agree | Strongly<br>Agree |
|--|----------------------|----------|----------------------------------|-------|-------------------|
| I am pleased with the way my colleagues and I work together. | 1                    | 2        | 3                                | 4     | 5                 |
| I am satisfied with my present colleagues in my team.        | 1                    | 2        | 3                                | 4     | 5                 |
| I am very satisfied with working in this team.               | 1                    | 2        | 3                                | 4     | 5                 |

### 1.2 Your team's innovativeness

*Please describe below the major changes the team has introduced in its work in the last 5 months (these may be changes in working practices, innovation in healthcare, improved services for patients, changes in administrative systems, or improving aspects of the premises).*

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## Section 2: Your team's relationship with other teams

*The team named team X was identified as the other team or work group that your team has most important interactions with to accomplish your team's goals. The following section assesses your views about the relationship, objectives, and interaction between your team and this team.*

|   | Not at all | Less than once a month | About once a month | About once a fortnight | About once a week | Several times a week | Daily |
|---|------------|------------------------|--------------------|------------------------|-------------------|----------------------|-------|
| Whilst working for your team during the past 5 months, how often did you interact on work related matters with members of team X? | 1          | 2                      | 3                  | 4                      | 5                 | 6                    | 7     |

### 2.1 The interdependence of your team with team X (please refer to the past 5 months)

|   | Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|---|-------------------|----------|----------------------------|-------|----------------|
| Both teams want each other to succeed.  | 1                 | 2        | 3                          | 4     | 5              |
| Both teams "swim or sink" together.   | 1                 | 2        | 3                          | 4     | 5              |
| Both teams seek joint goals.  | 1                 | 2        | 3                          | 4     | 5              |
| Both teams have the same goals.   | 1                 | 2        | 3                          | 4     | 5              |
| The goals of both teams are not reconcilable with each other.   | 1                 | 2        | 3                          | 4     | 5              |
| Both teams try to show that they are superior to each other.  | 1                 | 2        | 3                          | 4     | 5              |
| Team members structure things in ways that favour their own goals rather than the goals of the other team.  | 1                 | 2        | 3                          | 4     | 5              |
| Both teams have a "win-lose" relationship.  | 1                 | 2        | 3                          | 4     | 5              |
| Both teams working together usually have common goals.  | 1                 | 2        | 3                          | 4     | 5              |
| Team members give high priority to the things their team wants to accomplish and low priority to the things members of the other team want to accomplish. | 1                 | 2        | 3                          | 4     | 5              |

### 2.2 How effectively did your team work together with team X? (Please refer to the past 5 months)

|  | To no extent | Little extent | Some extent | Considerable extent | Great extent |
|--|--------------|---------------|-------------|---------------------|--------------|
| To what extent did both teams work effectively together in order to respond to tasks or duties that emerged from working within the PCT (e.g., coordinating cross-team activities, assignment of organisational duties, etc.)? | 1            | 2             | 3           | 4                   | 5            |
| To what extent did both teams effectively help each other out if resources (e.g., time to invest, people or staff, support etc.) were needed?  | 1            | 2             | 3           | 4                   | 5            |
| To what extent did working with this other team result in too many constraints (e.g., time/staff shortage etc.) for your team's everyday activities?   | 1            | 2             | 3           | 4                   | 5            |
| To what extent did you feel the relationship between your team and this other team was productive?   | 1            | 2             | 3           | 4                   | 5            |



|  | To no extent | Little extent | Some extent | Considerable extent | Great extent |
|--|--------------|---------------|-------------|---------------------|--------------|
| To what extent did both teams <i>make effectively use of each other's resources</i> (e.g., time to invest, people or staff, support etc.) in order to provide better patient care?                 | 1            | 2             | 3           | 4                   | 5            |
| For <i>your team</i> to accomplish its goals and responsibilities, to what extent did you receive the expected services, resources, or support from this other team?                               | 1            | 2             | 3           | 4                   | 5            |
| To what extent did both teams <i>work effectively together</i> in order to provide better services to patients?  | 1            | 2             | 3           | 4                   | 5            |
| To what extent did both teams work effectively together in order to respond to <i>problems or flaws that emerged from working within the PCT</i> (e.g., staff or time shortage, etc.)?             | 1            | 2             | 3           | 4                   | 5            |
| For <i>this other team</i> to accomplish its goals and responsibilities, to what extent did it receive the expected services, resources, or support from your team?                                | 1            | 2             | 3           | 4                   | 5            |
| To what extent did working with this other team entail <i>too much loss of time and energy</i> on trying to reach <i>enduring agreements</i> ?   | 1            | 2             | 3           | 4                   | 5            |
| If you consider the <i>fairness</i> of the give-and-take relationship with this team, to what extent did you feel that <i>this other team</i> should have given more than it did?                  | 1            | 2             | 3           | 4                   | 5            |
| To what extent did working with your team result in <i>too many constraints</i> (e.g., time/staff shortage etc.) for this other team's everyday activities?  | 1            | 2             | 3           | 4                   | 5            |
| To what extent was there <i>too much disagreement about resource allocation</i> (e.g. time to invest, people or staff, allocation of tasks or duties, etc.) between your team and this other team? | 1            | 2             | 3           | 4                   | 5            |
| To what extent did <i>your team</i> carry out your responsibilities and commitments in regard to this other team?  | 1            | 2             | 3           | 4                   | 5            |
| To what extent did <i>this other team</i> carry out its responsibilities and commitments in regard to your team?   | 1            | 2             | 3           | 4                   | 5            |
| If you consider the <i>fairness</i> of the give-and-take relationship with this other team, to what extent did you feel that <i>your team</i> should have given more than it did?                  | 1            | 2             | 3           | 4                   | 5            |

### And finally:

|  |   |
|--|---|
| <b>2.3. How many people in total work in your team?</b><br><br>_____ (i.e. receptionists, nurses, etc) | <b>2.4. How many people left the team during the past 5 months?</b><br><br>_____ people |
|--|---|

Many thanks for completing this questionnaire. It will be a valuable contribution to our study about how to improve relationships between teams in your PCT. Please place the questionnaire in the pre-paid envelope provided, seal it, and post it back to the researcher within the next 14 days.

**!Thank you for your cooperation!**

## **Appendix: 8**

## **Rating Sheet for Line Managers**



Your ID \_\_\_\_\_  
 This identification number will be  
 kept separately from your name,  
 thereby protecting your anonymity

## **Team effectiveness rating sheet**

Please read each question carefully and give your immediate response. The statements ask you to indicate the degree or extent of your view by circling a number on a predetermined scale which best reflects your opinion. We are interested in *your* views about the statements. *Please always circle only one number for each statement.*

### **1. During the past 5 months, to what extent do you feel that team X ...**

|   | Not at all | A little | Some-<br>what | Con-<br>siderably | Com-<br>pletely |
|---|------------|----------|---------------|-------------------|-----------------|
| met the <i>standards of quality</i> expected by the Trust?        | 1          | 2        | 3             | 4                 | 5               |
| met the <i>standards of quantity</i> expected by the Trust?       | 1          | 2        | 3             | 4                 | 5               |
| met the <i>standards of timeliness</i> expected by the Trust?     | 1          | 2        | 3             | 4                 | 5               |
| met the <i>standards of implementation</i> expected by the Trust? | 1          | 2        | 3             | 4                 | 5               |
| had a <i>reputation for work excellence</i> within the Trust?     | 1          | 2        | 3             | 4                 | 5               |

### **2. How effectively did team X work together with team Y? (Please refer to the past 5 months)**

|   | To no<br>extent | Little<br>extent | Some<br>extent | Con-<br>siderable<br>extent | Great<br>extent |
|---|-----------------|------------------|----------------|-----------------------------|-----------------|
| To what extent did both teams work effectively together in order to respond to <i>tasks or duties that emerged from working within the Trust</i> (e.g., coordinating cross-team activities, assignment of organisational duties, etc.)? | 1               | 2                | 3              | 4                           | 5               |
| To what extent did both teams <i>work effectively together</i> in order to provide better services to patients?   | 1               | 2                | 3              | 4                           | 5               |
| To what extent did you feel the <i>relationship</i> between both teams was <i>productive</i> ?  | 1               | 2                | 3              | 4                           | 5               |
| To what extent did both teams work effectively together in order to respond to <i>problems or flaws that emerged from working within the Trust</i> (e.g., staff or time shortage, etc.)?  | 1               | 2                | 3              | 4                           | 5               |
| To what extent did both teams effectively <i>help each other out</i> if resources (e.g., time to invest, people or staff, support etc.) were needed?  | 1               | 2                | 3              | 4                           | 5               |
| To what extent did both teams <i>make effectively use of each other's resources</i> (e.g., time to invest, people or staff, support etc.) in order to provide better patient care?  | 1               | 2                | 3              | 4                           | 5               |

## **Appendix 9: Individual Team Feedback Report**

## Single Team Feedback Report of Survey

### “Facilitating Collaboration Between Teams in PCTs”

Presented to:

“EXAMPLE” Team

Total number of respondents from your team: 6

Report prepared by:

Andreas Richter

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September 2003



### ***About this feedback report:***

This is the first part of the feedback to your team, your team's individual feedback report. This report will only be sent to those members within your team who indicated in the questionnaire that they wished to receive an exemplar. It will *not* be disseminated elsewhere.

The questions asked in the questionnaire were suggested by the literature to represent important aspects of successful team working for teams in health care organisations; nevertheless, some constructs may be more relevant for your team than others, depending on your team's everyday work. Thus, this report does not intent to be judgmental about whether or not your team is effective. Rather, we believe you and your colleagues know better than we do how to interpret the results in the light of your team's unique characteristics, its past, and its working environment. All questions referred to a time frame of five months and thus refer to recent developments in your team.

We hope the report may stimulate reflexivity within your team about the way you are working together. We hope it may provide a tool to reflect upon and discuss with your colleagues those aspects of team working most relevant and interesting for your team.

### ***About the analysis:***

The report summarises and mirrors the views and opinions of those members of your team who have returned the questionnaires. Your team's answers were aggregated and a "total score" for each construct calculated. In a second step we compared these total scores with a representative sample of more than 200 staff members working in over 50 teams in different PCTs. We calculated whether, in comparison to those other teams, your team's total scores were lying in a medium range or were above/below the average. We defined the medium range as one standard deviation (a statistical measure of variability) above and below the mean of our sample. If your team's score was above this medium area, we suggested this particular construct represents one of your team's strengths. Was your team's score below this area, we suggested the respective construct may represent a potential development opportunity for your team.

### ***How to use this report:***

Please note that even though we speak of "your team's scores", the results are only to that extent representative for your team as both a representative number of team members have returned their questionnaires and participants answered the questions honestly. This is why we have inserted the number of returned questionnaires from your team on the front page.

We do suggest you start reading this report beginning with the summary of key results and your team's individual profile, and then to selectively pick those aspects you find most relevant.

Finally, we hope you will find the feedback useful and it may stimulate fruitful discussions with your colleagues. If you wish to feed back your opinion about this report to us, or if you have any questions, please contact Andreas Richter by the contact provided on the front page.

## **Content**

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|--|--------------------|
| <b><u>Part 1: Summary and Team Profile</u></b>       |                    |
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| Your Team's Profile                                  | 5                  |
| <b><u>Part 2: Team Processes</u></b>                 |                    |
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## **Part 1: Summary and Team Profile**

### **Summary of Key Result**

#### **A.) Your team's total scores:**

In this stage of the research we have looked at the way your team is working together. We also assessed your team's cross team working with one other team you have chosen for this research.

Overall, your team has *low to high total scores* on constructs that measured team processes. These results suggest that members of your team consider the team to function well. There was not a single aspect of team functioning where team members on average expressed their concerns with the way the team works by strongly disagreeing with our statements.

Overall, your team has *medium to high total scores* on the constructs that measured cross team working. The results suggest that team members think their team works well with this other team you have selected for this research.

#### **B) Your team's comparative scores:**

We have then compared your team's views with the views of our complete sample of other teams in our project in order to see where both strength and potential development opportunities for your team might be. Our comparisons suggest that

*Your team's strengths in comparison to other teams are...*

Problem solving communication with the other team chosen for this research: In comparison with other teams, members of your team use to a greater extent a proactive, open communication style when problems or disagreements emerge between teams. Such proactive, open communication across teams is an indicator of effective cross team working.

Trust in members of the other team: In comparison with other teams, members of your team have high levels of trust into members of the other team. Trustful relationships between teams are an indicator of effective intergroup relations, as they facilitate effective coordination and communication.

*Potential for team development may exist regarding...*

Team innovativeness: In comparison with other teams, members of your team feel that the team is rather stable and hasn't introduced many changes during the past 5 months. We would like to suggest that you may discuss with your colleagues whether the introduction of new working procedures, changes in the work targets or objectives, etc. may be beneficial for team members' everyday work, or whether you rather prefer to have a stable work environment.

The ensuing profile illustrates these results.



## Your Team's Profile

| <b><u>Team Profile Part A:</u></b><br><b><u>- Team Processes -</u></b> |  |   |  |
|--|--|---|--|
|  | <b><u>Distribution of participating teams</u></b>                                  |   |  |
|  | 0 – 17 %   | 18 - 82 %   | 83 – 100%  |
|  | <i>ca 1/6 of participating teams</i><br><u>Development Areas</u><br>(-/-)      (-) | <i>ca 2/3 of participating teams</i><br><u>Medium Area</u><br>(+/-) | <i>ca 1/6 of participating teams</i><br><u>Strengths</u><br>(+)      (+/+) |
| <b><u>Team Processes</u></b>   |  |   |  |
| <b>TEAM IDENTIFICATION</b>   |  | Team Score = 4,38   |  |
| <b>TEAM MEMBERS' SATISFACTION WITH THE TEAM</b>                        |  | Team Score = 4,33   |  |
| <b>LEARNING WITHIN YOUR TEAM</b>                                       |  | Team Score = 3,33   |  |
| <b>TEAM PERFORMANCE</b>  |  | Team Score = 3,90   |  |
| <b>TEAM INNOVATIVENESS</b>   | Team Score = 2,20  |   |  |

## Team Profile Part B: - Cross Team Working and Organisational Identification -

|                                      | <u>Distribution of participating teams</u>  |  |   |
|--------------------------------------|---|--|---|
|                                      | 0 – 17 %  | 18 - 82 %  | 83 – 100%   |
|                                      | ca 1/6 of participating teams<br><u>Development Areas</u><br>(-/-)                      (-) | ca 2/3 of participating teams<br><u>Medium Area</u><br>(+/-) | ca 1/6 of participating teams<br><u>Strengths</u><br>(+)                      (+/+) |
| <u>Cross Team Working</u>            |   |  |   |
| <b>DOMINATING</b>                    |   | Team Score = 2.00  |   |
| <b>PROBLEM SOLVING</b>               |   | Team Score = 4.17  |   |
| <b>TRUST</b>                         |   | Team Score = 4.33  |   |
| <b>ORGANISATIONAL IDENTIFICATION</b> |   | Team Score = 3.50  |   |

\* Your team has a total score of 4.17 indicating that members of your team, on average agree with our statements about team identification.

We now compared this total score with the total score of all teams within our study. Our comparison revealed that

in comparison with other teams, team members' identification with their team lies within a medium range.



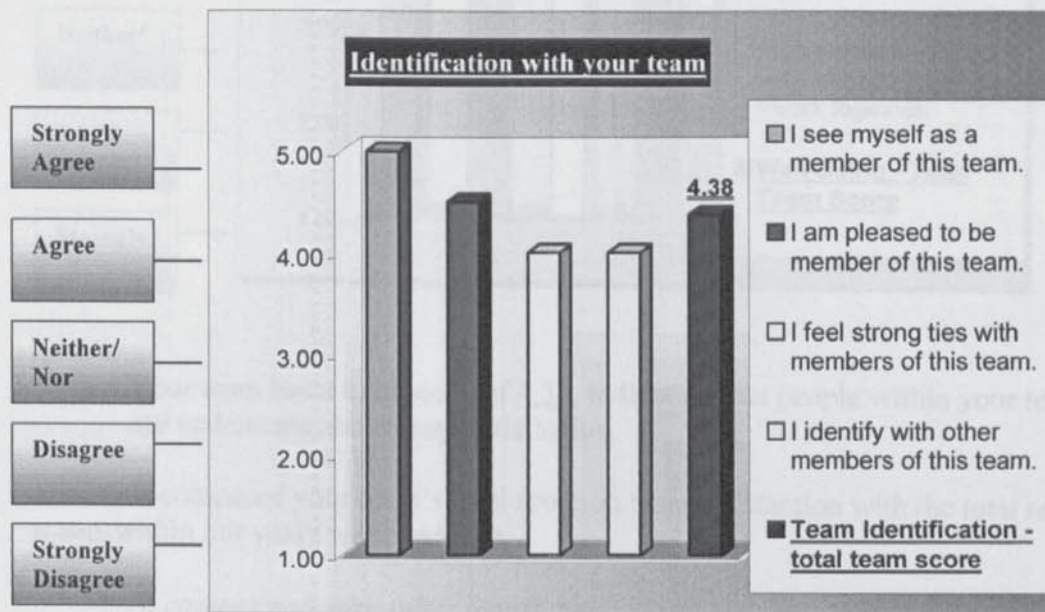
## Part 2: Team Processes

Team working in health care can have positive effects on both staff and patient care. As one example, research at Aston revealed that staff working in teams have much lower levels of stress than those working in looser groupings or working alone. In this research we selected team processes which were suggested by the literature to be important aspects of team functioning. These are *team identification*, *learning within the team*, *team members' satisfaction with their team*, *team performance*, and *team innovativeness*.

### Team identification

Team identification represents the extent to which team members feel they belong to a team. It can be a driving force for high team performance. In our research, e.g., team identification is strongly related with both team members' satisfaction and learning within their team.

The figure below displays team members' average scores on our questions about team identification. The red column represents your team's total score across all questions.



- Your team has a total score of 4.38, indicating that members of your team on average agree with our statements about team identification.

We now compared this total score with the total score of all teams within our study. Our comparison revealed that

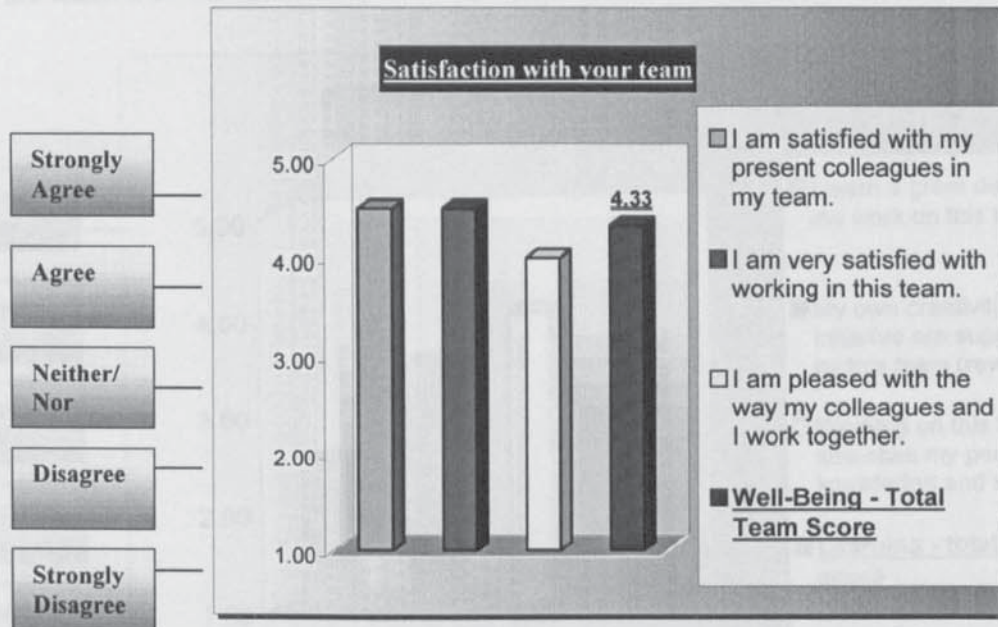
☞ *In comparison with other teams, team members' identification with their team lies within a medium range.*



## Satisfaction

A group experience that contributes positively to the well being of individual team members is meaningful and satisfying. Additionally, research on teams showed that staff members' satisfaction with their team is related to team performance: Teams with more satisfied staff performed better than teams with less satisfied staff.

The figure below displays your team's average scores on our questions about team satisfaction. The red column represents your team's total score across all questions.



- Your team has a total score of 4.33, indicating that people within your team agree with our statements about team satisfaction.

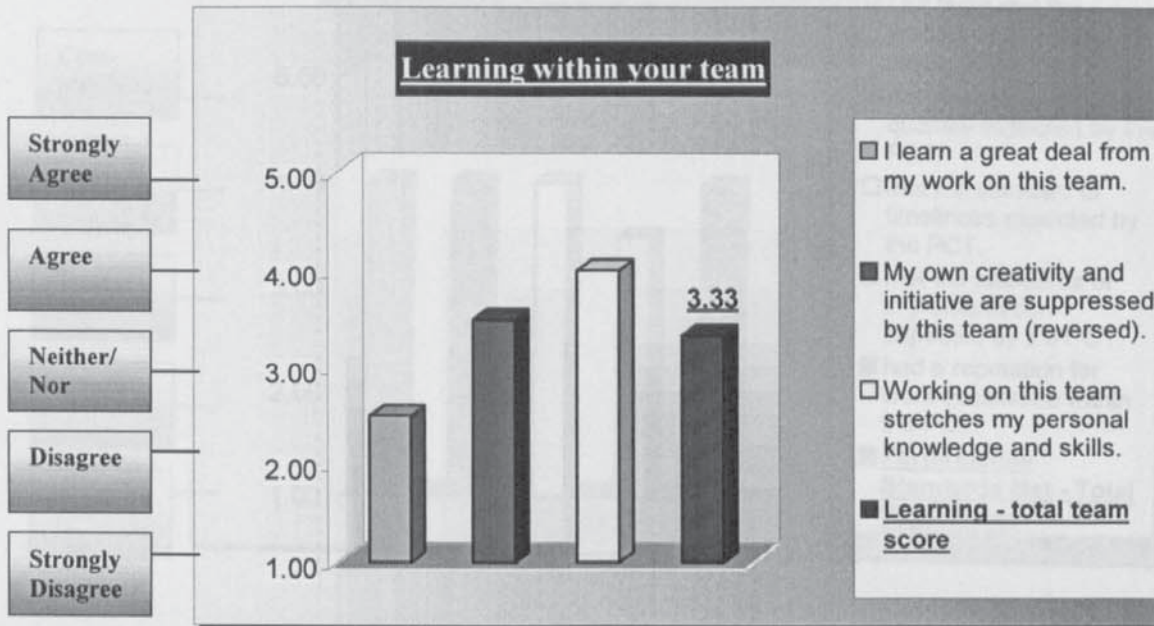
When we compared your team's total score on team satisfaction with the total score of all teams within our study we found that

- ☞ ***In comparison with other teams, team members' satisfaction with their team lies within a medium range.***

### Learning within your team

Teams can grow to increasingly capable performing units over time, as members gain experience and discover new and better ways of working together. Teams may represent the source of vivid exchange among its members, which can be a source of learning within the team. Because of such social processes, an effective team may be a more capable performing unit when its work is finished than when its work began.

The figure below displays your team's average scores on our questions about learning within the team. The red column represents your team's total score across all questions.



- Your team has a total score of 3.33; people within your team on average neither agree nor disagree that working within your team helps their professional learning.

When we compared your team's total score on learning with the total score of all teams within our study we found that

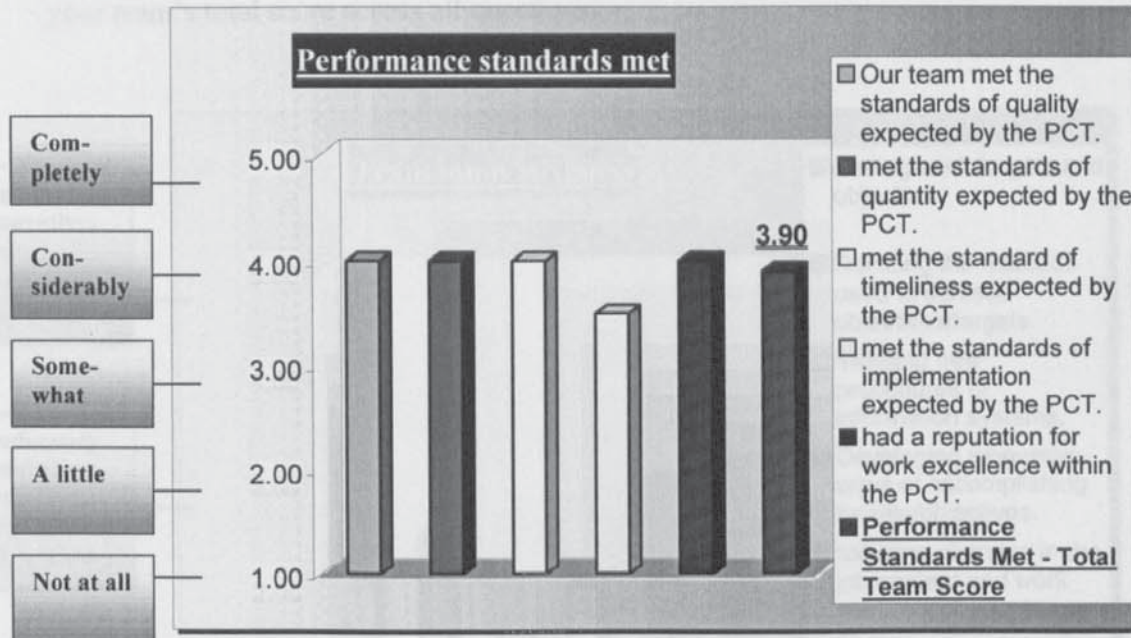
- ☞ *In comparison with other teams, team members' learning from their team lies within a medium range.*



## Team performance

In this section we have asked team members to which extent they believe the team meets the performance standards as expected by the PCT.

The figure below displays team members' average scores on our questions. The red column represents your team's total score across all questions.



- Your team has a total score of 3.90, indicating that members of your team consider meeting the performance standards as expected by the PCT considerably.

When we compared your team's total score on performance with the total score of all teams within our study we found that

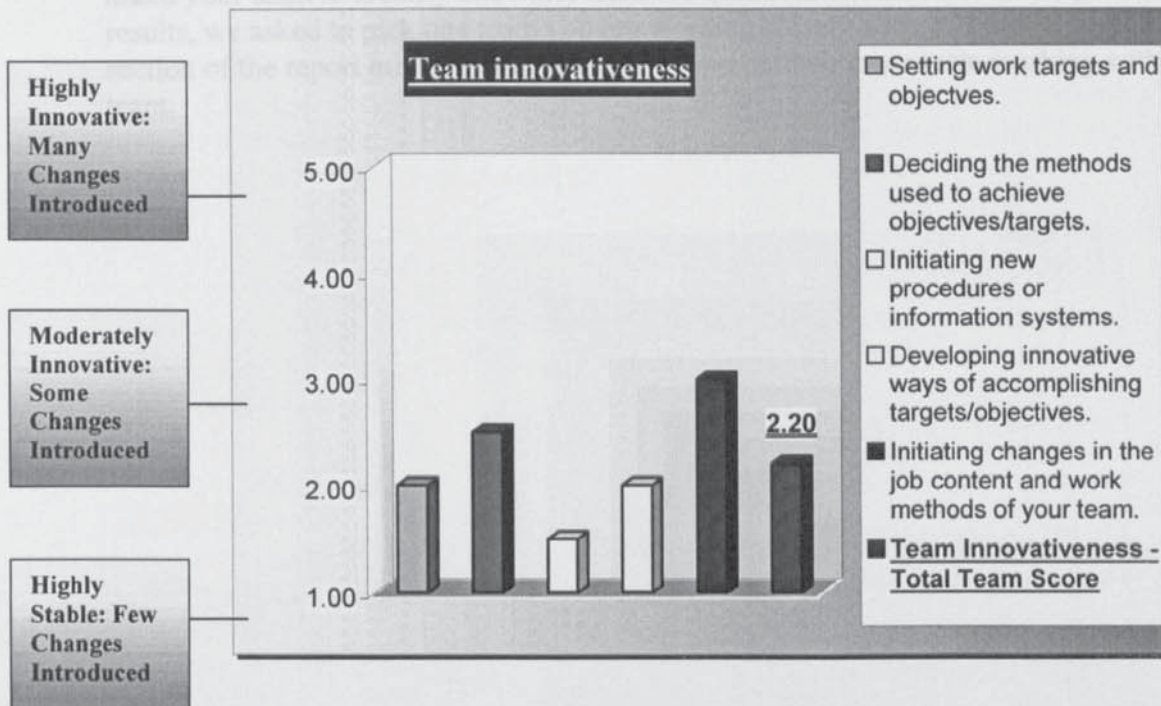
- ☞ *In comparison to other teams, team members' estimation of your team's performance lies within a medium range.*



## Team innovativeness

Team work is reputed to promote innovation in organisations including those in the health care sector. The literature suggests that teams responding to high demands and work pressure with new and different working practices, procedures, and methods, may find better solutions to the daily challenges they are facing.

In our study, we have asked team members how innovative they consider the team to be regarding five different aspects. The figure below shows the items; the red column represents your team's total score across all questions.



- Your team has a total score of 2.20; people within your team on average tend to consider your team as moderately innovative, with some changes introduced during the past 5 months.

When we compared your team's total score on innovation with the total score of all teams within our study we found that

- ☞ *In comparison with other teams, team members' estimation of your team's innovativeness is below average.*
- ☞ *This score suggests that innovativeness may be a potential development opportunity for your team.*

### **Part 3: Cross Team Working**

Effective team working in health care can prove very difficult to achieve if barriers between teams emerge. Reasons for such barriers may be attitudes between staff, a lack of understanding of the ways different teams work together, or misunderstandings between different professional groups. In this research we have been looking at several aspects of cross team working, including *communication across teams*, *trust between teams*, and *organisational identification*.

In order to avoid ambiguity and to be able to ask questions as precisely as possible, we asked your team to identify one other team the questions should refer to. To gain meaningful results, we asked to pick one team you are working closely with. All results presented in this section of the report mirror team members' views on their cross team working with this other team.

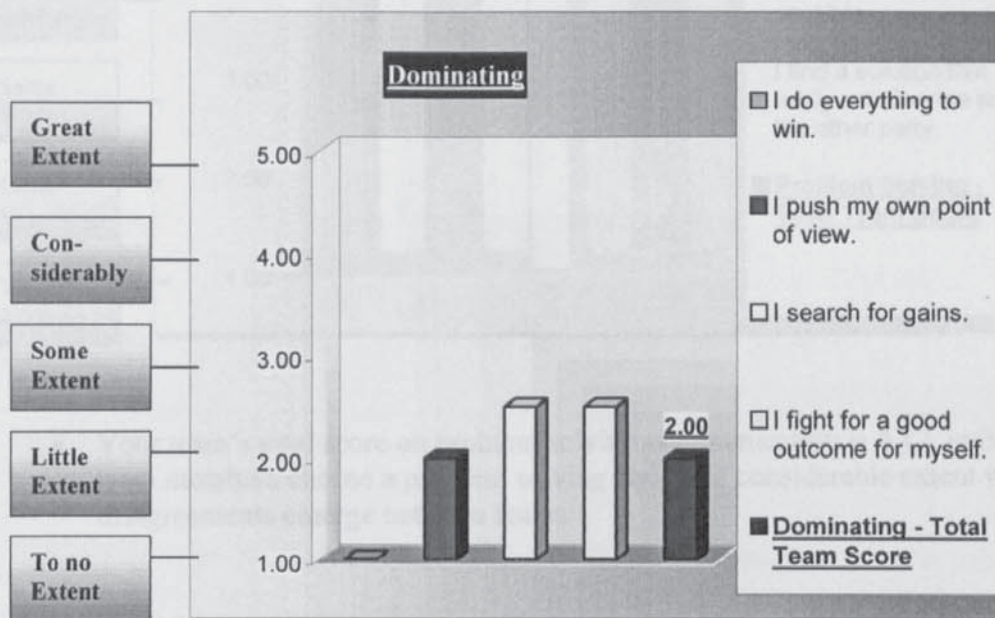


## Communication

In this section of the survey we have asked what team members generally do when they have a problem or disagreement with a colleague of this other team you have selected. The literature on communication suggests that *how* different teams resolve their disagreements is an important aspect of effective cross team working. Our questions were measuring whether team members usually choose a “problem solving” approach and openly addressed the issues concerned, looking for a mutually satisfying solution, or whether they usually try to “dominate” and to push their own interests. Research findings suggest that a proactive problem-solving approach is more effective than a dominating style.

### A.) Dominating

The figure below illustrates your team’s average scores on the “dominating” communication style. The figure below shows the items; the red column represents your team’s total score across all questions.



- Your team’s total score on dominating communication is 2,00 indicating that team members to a little extent try to dominate when disagreements emerge between teams.

When we compared your team’s score with the total score of all teams within our study, our data suggests that

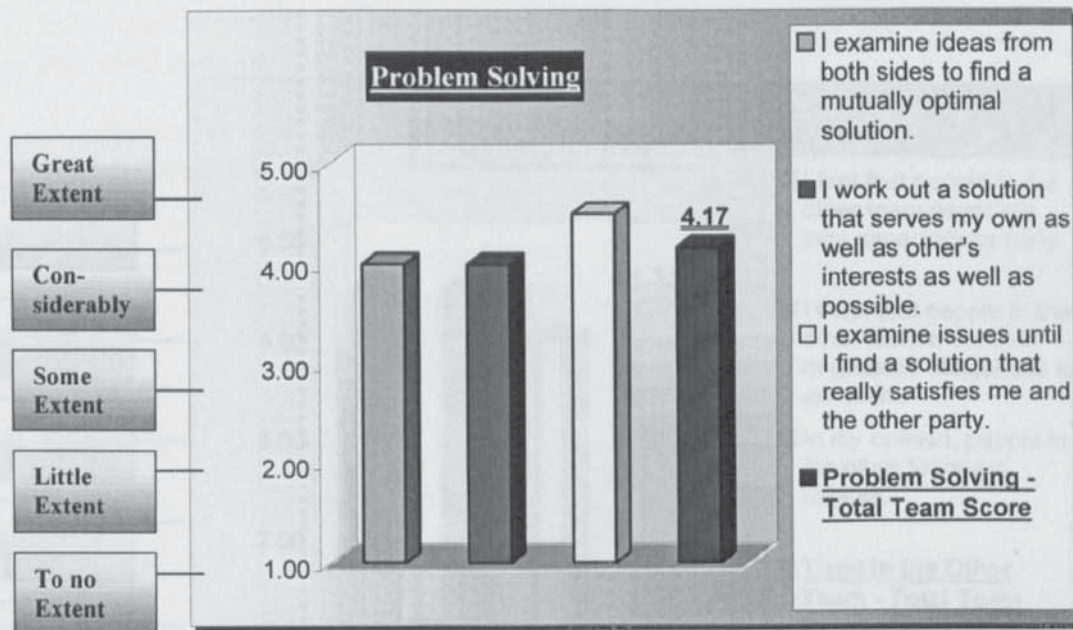
☞ *In comparison with other teams, team members’ dominating communication with members of the other team lies within a medium range.*



## **B.) Problem Solving**

Now we have asked to what extent team members usually choose a “problem solving” approach and openly and proactively addressed the issues concerned

The figure below illustrates your team’s average scores on the “Problem Solving” communication style. The figure below shows the items; the red column represents your team’s total score across all questions.



- Your team’s total score on problem solving communication is 4.17, indicating that team members choose a problem solving style to a considerable extent when disagreements emerge between teams.

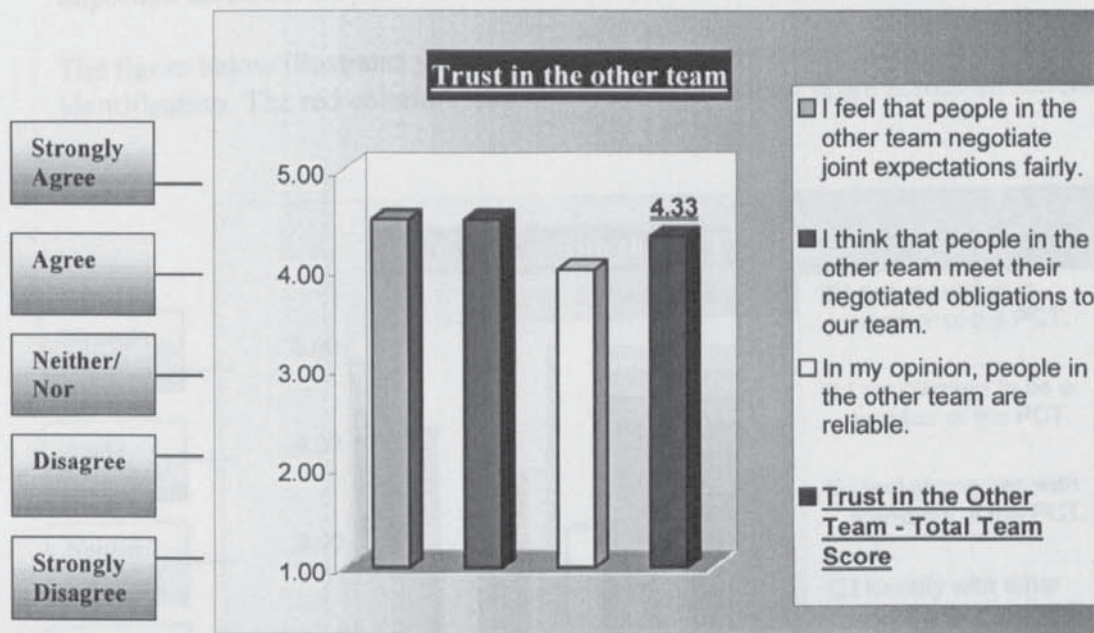
When we compared your team’s score with the total score of all teams within our study, our data suggests that

- ☞ *In comparison to other teams, team members’ problem solving communication style is marginally above average.*
- ☞ *This score suggests that problem solving communication with members of the other team is one of your team’s strengths.*

## Trust

Trust between teams is widely considered to be an important basis for effective cross team working. Trust reduces time and resources spent on trying to control the other party. Trustful relationships are also the basis for team members to openly discuss problems and issues without having to fear exploitation or to court someone's resentment.

The figure below illustrates your team's average scores on statements that described your team's trust in the other team. The red column represents your team's total score across all statements.



- Your team has a total score of 4.33, indicating that members of your team have trustful relationships with members of the other team.

When we compared your team's score with the total score of all teams within our study, our data suggests that

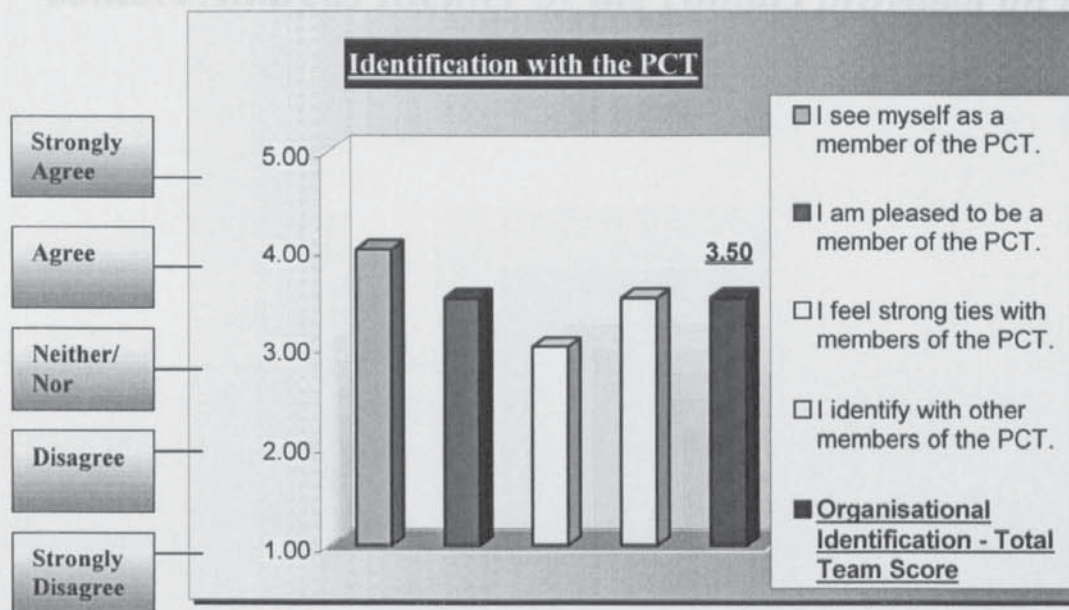
- ☞ *In comparison to other teams, team members' trust in members of the other team is above average.*
- ☞ *This suggests that building trustful relationships with members of the other team chosen for this research is one of your team's strengths.*



## Organisational Identification

In the following section of the questionnaire we have asked team members how much they identify with the PCT. Organisational identification assesses the extent to which an individual defines himself or herself in terms of the membership of an organisation. The literature suggests that high levels of organisational identification facilitate cross team working, because team members view members of other groups as belonging to the same overall organisational group rather than a competing work unit. For the individual, higher organisational identification is proposed to be related to greater job satisfaction, higher motivation, and a greater extent of well being. We believe that, as PCTs are newly founded organisations which have been undergoing many changes, organisational identification is an important construct that facilitates both team performance and cross team working.

The figure below illustrates your team's average scores on the items measuring organisational identification. The red column represents your team's total score across all statements.



- Your team has a total score of 3.50, indicating that members of your team tend to identify with the PCT.

When we compared your team's score with the total score of all teams within our study, our data suggests that

- ☛ *In comparison with other teams, team members' identification with the PCT lies within a medium range.*



***Many thanks for your team's participation in the 1<sup>st</sup> part of our survey study! Your participation is a valuable contribution to our research.***

***If you wish to discuss the results of this report, please contact Andreas Richter by the contact provided on the front page.***

**Appendix 10:**      Rating Sheet Subject Matter  
Experts

### Sorting Questions - Exercise

Dear volunteer, the following exercise is about how well certain questions match certain categories that they are supposed to measure.

When reading the questions, please imagine you were a team representative of a health care team in an NHS organisation, a so-called "Trust". You negotiate and collaborate regularly with members of another team on behalf of your team. You are now confronted with questions about how effective this other team and your team worked together in the past.

In the first part of this exercise, you are asked to assign an A, B, C, or D to each question, indicating to which of these four categories you feel the questions could best be assigned. Please assign only one category to each question.

The categories are:

**Category A:** The extent to which both teams effectively worked together in order to respond to mandates or problems within the Trust.

**Category B:** The extent to which both teams provided each other with valued resources.

**Category C:** The extent to which disproportional costs (in terms of time spent etc.) arose from working together.

**Category D:** The extent to which the relationship itself is considered fair and both teams keep their commitments and responsibilities towards each other.

In the second part of this exercise you are to indicate on a scale from 1 to 5 how difficult you found it to assign each question to the respective category. Please use the following scale for this:

|  |   |  |   |   |
|--|---|--|---|---|
| <u>Very difficult to assign to one of the above categories</u> |   | <u>Neither difficult nor easy to assign to one of the above categories</u> |   | <u>Very easy to assign to one of the above categories</u> |
| 1  | 2 | 3  | 4 | 5   |

Please turn overleaf to start the exercise. Many thanks in advance for your help! Once you've finished the task, please exchange this sheet for a well-deserved reward waiting for you in room 708.



|   | Insert "A", "B", "C" or "D" in this column, indicating your view <u>about the category</u> each item would best match. | Insert a number from "1" to "5" in this column, indicating <u>how difficult</u> you found it to assign an item to the respective category |
|---|--|---|
| To what extent did both teams work effectively together in order to respond to <i>tasks or duties that emerged from working within the Trust</i> (e.g., coordinating cross-team activities, assignment of organisational duties, etc.)? |  |   |
| Consider now the <i>equality</i> of the give-and-take relationship with this team. Compared to other units that you are involved with, <i>how fair</i> did you feel were the " <i>payoffs</i> " to your team from this team?            |  |   |
| To what extent did <i>your team</i> carry out your responsibilities and commitments in regard to this other team?   |  |   |
| If you consider the <i>equality</i> of the give-and-take relationship with this team, to what extent did you feel that <i>this other team</i> should have given more than it did?   |  |   |
| To what extent did collaboration between your team and this team <i>attain the joint goals</i> ?  |  |   |
| To what extent did both teams <i>work effectively together</i> in order to <i>provide better services</i> to patients?  |  |   |
| To what extent did working with this other team result in <i>too many constraints</i> (e.g., time/staff shortage etc.) for your team's everyday activities?   |  |   |
| For the <i>effort and resources</i> you devoted to dealing with this team, how <i>great a value</i> did your team receive?  |  |   |
| For <i>this other team</i> to accomplish its goals and responsibilities, to what extent did it receive the expected services, resources, or support from your team?   |  |   |
| To what extent did both teams effectively <i>help each other out</i> if resources (e.g., time to invest, people or staff, support etc.) were needed?  |  |   |
| To what extent did working with your team result in <i>too many constraints</i> (e.g., time/staff shortage etc.) for this other team's everyday activities?   |  |   |
| To what extent was the <i>time and effort spent</i> by both teams in developing and maintaining the relationship <i>worthwhile</i> ?  |  |   |
| To what extent did interaction with this team result in <i>ideas for new and improved ways of providing care</i> ?  |  |   |
| If you consider the <i>equality</i> of the give-and-take relationship with this other team, to what extent did you feel that <i>your team</i> should have given more than it did?   |  |   |

|  | Insert "A", "B", "C" or "D" in this column, indicating your view about the category each item would best match. | Insert a number from "1" to "5" in this column, indicating how difficult you found it to assign an item to the respective category |
|--|---|--|
| To what extent did you feel the <i>relationship</i> between your team and this other team was <i>productive</i> ?  |   |  |
| For <i>your team</i> to accomplish its goals and responsibilities, to what extent did you receive the expected services, resources, or support from this other team?                               |   |  |
| To what extent did working with this other team entail <i>too much loss of time and energy</i> on trying to reach <i>enduring agreements</i> ?   |   |  |
| To what extent did both teams work effectively together in order to respond to <i>problems or flaws that emerged from working within the Trust</i> (e.g., staff or time shortage, etc.)?           |   |  |
| To what extent did both teams <i>make effectively use of each other's resources</i> (e.g., time to invest, people or staff, support etc.) in order to provide better patient care?                 |   |  |
| To what extent did <i>this other team</i> carry out its responsibilities and commitments in regard to your team?   |   |  |
| To what extent was there <i>too much disagreement about resource allocation</i> (e.g. time to invest, people or staff, allocation of tasks or duties, etc.) between your team and this other team? |   |  |