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United We Stand: An Analysis of Attitudes and Prosocial
Behavior between Workgroups from a Social Identity and
Intergroup Contact Perspective

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Abstract

The objective of the present thesis was to investigate attitudes and prosocial behavior between workgroups from a social identity and intergroup contact perspective. Since intergroup behavior is often more competitive than interpersonal behavior (e.g., Schopler & Insko, 1992), problems between workgroups may arise that inhibit the workflow and decrease effectiveness (Bierhoff & Müller, 1993; Richter, West, Van Dick, & Dawson, 2006; Schütz & Bloch, 2006). However, workgroups also share a common identity at the organizational level that may motivate them to pull together. Thus, initial research was mainly based on the Common In-group Identity Model (CIIM; Gaertner & Dovidio, 2000), which suggests that “optimal” conditions for contact proposed by Allport (1954) create a common in-group representation (i.e., recategorization) which in turn promotes more positive attitudes as well as prosocial behavior between subgroups. However, the CIIM also needed to be extended by taking predictions from the In-group Projection Model (IPM; Mummendey & Wenzel, 1999) and the Self-Categorization Model of Group Norms (Terry & Hogg, 1996) into account.

Hypotheses derived from these models were tested with data from $N_1 = 281$ employees from $N_2 = 49$ different workgroups and their workgroup managers of a German mail-order company (Study 1). Results indicated that individual-level contact conditions were predictive of lower levels of intergroup bias and higher levels of prosocial behaviors (i.e., cooperation and helping behavior). A common in-group representation mediated the effect on out-group attitudes and intergroup cooperation. In addition, the effect of a common in-group representation on intergroup bias was moderated by relative prototypicality, as predicted by the IPM. Furthermore, group-level contact conditions only had a direct effect on intergroup cooperation but not on helping behavior. Additionally, the effect of prosocial group norms on helping behavior was moderated by workgroup identification, as predicted by the Self-Categorization Model of Group Norms.

A longitudinal study with $N_{\text{total}} = 57$ members of different student project groups replicated the finding that contact under “optimal” conditions reduces intergroup bias and increases prosocial behavior between organizational groups. However, a common in-group representation did not mediate this effect in Study 2.

Initial findings also indicated that individual-level variables, such as helping behavior toward members of another workgroup, may be better accounted for by variables at the same level of categorization (cf. Haslam, 2004). Thus, contact in a context that makes *personal identities* of workgroup members salient (i.e., decategorization) may be more predictive of *interpersonal* prosocial behavior, while contact in a context that makes *workgroup identities* salient (i.e., categorization) may be more predictive of *intergroup* prosocial behavior (cf. Tajfel, 1978). Further data gathered in Study 1 supported such a context-specific effect of contact between workgroups on interpersonal and intergroup prosocial behavior, respectively.

In the last step, a temporal integration of the contact contexts that either lead to decategorization, categorization, or recategorization was examined based on the Longitudinal Contact Model (Pettigrew, 1998). A first indication that a temporal sequence from decategorization via categorization to recategorization may be particularly effective in fostering intergroup cooperation was obtained in Study 2.

In order to provide a heuristic model for research on prosocial behavior between workgroups, I integrated findings in a Context-Specific Contact Model. The model proposes specific effects of contact in different contexts on prosocial behavior at different levels of categorization. Possible mediator and moderator processes are suggested. A number of implications for theory, future research and the management of relations between workgroups are discussed.

Zusammenfassung

Das Ziel dieser Arbeit war die Vorhersage von Einstellungen und prosozialem Verhalten zwischen Arbeitsgruppen aus Sicht der Theorie der sozialen Identität und der Kontakthypothese. Da das Verhalten zwischen Gruppen oft weniger kooperativ ist als das Verhalten zwischen Einzelpersonen (z. B. Schopler & Insko, 1992), zeichnen sich zuweilen Schwierigkeiten zwischen Abteilungen ab, welche den Arbeitsablauf behindern und die Effektivität der Gruppen vermindern (Bierhoff & Müller, 1993; Richter, West, Van Dick, & Dawson, 2006; Schütz & Bloch, 2006). Allerdings teilen Arbeitsgruppen auch eine gemeinsame Identität als Mitarbeiter derselben Organisation. Diese gemeinsame Identität könnte Arbeitsgruppen dazu motivieren, an einem Strang zu ziehen und zusammenzuarbeiten. Dieser Idee folgt das Rekategorisierungsmodell von Gaertner und Dovidio (2000). Es nimmt an, dass die von Allport (1954) vorgeschlagenen „optimalen“ Kontaktbedingungen eine Repräsentation als gemeinsame Gruppe (d. h. Rekategorisierung) erzeugen, die wiederum zu positiveren Einstellungen und mehr prosozialem Verhalten zwischen Gruppen führt. Vorhersagen des Rekategorisierungsmodells wurden zusätzlich durch Annahmen aus dem Eigengruppen-Projektionsmodell (Mummendey & Wenzel, 1999) und dem Selbstkategorisierungsmodell der Gruppennormen (Terry & Hogg, 1996) ergänzt.

Die abgeleiteten Hypothesen wurden an einer Stichprobe von $N_1 = 281$ MitarbeiterInnen aus $N_2 = 49$ Abteilungen und den entsprechenden AbteilungsleiterInnen eines deutschen Versandhandelsunternehmens überprüft (Studie 1). Die Ergebnisse zeigen, dass Kontaktbedingungen auf der Personenebene tatsächlich weniger Voreingenommenheit zwischen Arbeitsgruppen, sowie mehr prosoziales Verhalten (d. h. Kooperation und Hilfeverhalten) vorhersagen. Die Repräsentation als gemeinsame Gruppe vermittelt diesen Zusammenhang für die Variablen Bewertung der Fremdgruppe und Kooperation. Dagegen wird der Zusammenhang zwischen Repräsentation als gemeinsame Gruppe und Voreingenommenheit durch die relative Prototypikalität der Abteilung moderiert, wie es das Eigengruppen-Projektionsmodell vorhersagt. Entgegen der Vorhersage ergaben sich direkte Effekte von Kontaktbedingungen auf Gruppenebene nur für die Variable Kooperation, jedoch nicht für Hilfeverhalten. Tatsächlich wird der Effekt der Kontaktbedingung Gruppennorm auf Hilfeverhalten durch die Identifikation mit der Arbeitsgruppe moderiert.

In einer Längsschnittstudie mit insgesamt $N = 57$ Mitgliedern studentischer Projektgruppen konnte der Befund repliziert werden, dass Kontakt unter „optimalen“ Bedingungen zu mehr prosozialem Verhalten und weniger Voreingenommenheit zwischen organisationalen Gruppen führt. Der Mediationseffekt durch eine gemeinsame Gruppenidentität konnte jedoch in Studie 2 nicht repliziert werden.

Die Ergebnisse der ersten Studie lassen zudem vermuten, dass interpersonales Hilfeverhalten besser durch Prädiktoren auf der gleichen Kategorisierungsebene (d. h. Personenebene) vorhergesagt werden kann (vgl. Haslam, 2004). Daher wurde die zusätzliche Annahme getroffen, dass Kontakt in einem Kontext, welcher *persönliche*

Identitäten salient macht (d. h. zu Dekategorisierung führt), *interpersonales* Verhalten besser vorhersagen kann. Dagegen sollte Kontakt in einem Kontext, welcher *Gruppenidentitäten* salient macht (d. h. zu Kategorisierung führt), *intergruppal* Verhalten besser vorhersagen können (vgl. Tajfel, 1978). Zusätzliche Daten aus Studie 1 konnten diesen kontextspezifischen Effekt von Kontakt auf interpersonales bzw. intergruppal prosoziales Verhalten belegen.

Im letzten Schritt wurde das längsschnittliche Kontaktmodell von Pettigrew (1998) untersucht, welches Kontakt in Kontexten, die zu Dekategorisierung, Kategorisierung bzw. Rekategorisierung führen, in einer zeitlichen Abfolge miteinander verbindet. Erste Befunde aus Studie 2 zeigen, dass eine Abfolge der Kategorisierungsprozesse beginnend bei Dekategorisierung über Kategorisierung hin zu Rekategorisierung eine besonders effektive Möglichkeit zur Verbesserung der Kooperation zwischen Gruppen bieten könnte.

Zum Abschluss wird ein Kontextspezifisches Kontaktmodell vorgeschlagen, das Befunde aus den beiden vorgestellten Studien integriert und zu weiterer Forschung an prosozialem Verhalten zwischen Arbeitsgruppen anregen soll. Mögliche zusätzliche Mediatoren und Moderatoren werden ebenfalls benannt. Außerdem werden eine Reihe von Implikationen für die Forschung und Praxis diskutiert.

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Introduction

UNITED WE STAND: AN ANALYSIS OF ATTITUDES AND PROSOCIAL BEHAVIOR BETWEEN WORKGROUPS FROM A SOCIAL IDENTITY AND INTERGROUP CONTACT PERSPECTIVE

Thirty years ago, a study by Brown (“Divided we fall”, 1978) showed that workers of an aircraft engine manufacturing company were more concerned about preserving wage differentials between groups of workers at different skill levels than they were concerned about their own pay rise. Similarly, research has found that differentiation, bias, and competition are quite common between workgroups (Brown, Condor, Mathews, Wade, & Williams, 1986; Brown & Williams, 1984; Hennessy & West, 1999), ranging from open turf war to a disregard of important information (e.g., Garman, Leach, & Spector, 2006; Walton & Dutton, 1969). Consequently, conflict between workgroups can have disruptive effects on the workflow leading to less workgroup effectiveness (Richter, West, Van Dick, & Dawson, 2006). Studies on workgroup relations also suggest that an intergroup perspective is pivotal for the understanding of conditions and processes that lead to negative intergroup attitudes and behavior.

While an understanding of conflict is an important field for organizational research and management (Tjosvold, 1998), the reduction of negative conditions and outcomes in organizations alone might not suffice to create work environments that can enhance prosocial behavior, well-being, innovation, and productivity. Thus, a more positive approach to organizational psychology has been advocated in recent years (Van Knippenberg, 2003; West, 2007). For instance, workgroup relations might not only be understood as a major source of conflict but can also be seen as a focal point of coordination and cooperation, and ultimately productivity (Podsakoff, Ahearne, & MacKenzie, 1997). One of the main objectives in creating a functionally structured organization is the reduction of complexity and the facilitation of coordination (Price, 2004). Workgroups are often integrated into the workflow or serve as internal service providers requiring them to coordinate their work with other workgroups on a daily basis (Marshall, Baker, & Finn, 1998). Additionally, employees tend to use in-formal ties, which might include employees from other workgroups, in order to obtain support for work-related or personal problems (Bowler & Brass, 2006).

However, research on prosocial behavior in organizations rarely adopts an intergroup perspective. Helping behavior in organizations is mainly studied in terms of interpersonal behavior. This perspective does not differentiate between helping a member of one’s own workgroup and helping a member of a different workgroup, although significant differences between in-group and out-group helping are evident from other research contexts (e.g., Levine, Prosser, Evans, & Reicher, 2005; Stürmer, Snyder, & Omoto, 2005). Similarly, research shows that cooperation between groups is more difficult to achieve than cooperation between individuals (Schopler & Insko, 1992).

Thus, research that takes into account the intergroup nature of workgroup relations might provide important insights into antecedents and processes of prosocial behavior between workgroups. More specifically, models that integrate Intergroup Contact Theory (Allport, 1954; Brown & Hewstone, 2005; Pettigrew, 1998) with a social identity perspective (Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) should be better able to predict under which social conditions workgroups will show more prosocial behavior and less bias toward other workgroups. The Common In-group Identity Model (Gaertner & Dovidio, 2000), for instance, suggests that so-called “optimal” conditions for intergroup contact create a common in-group identity between different groups, which in turn attenuates bias and facilitates prosocial behavior between members of these groups. Following this argument, the categorization of employees as members of the same organization should encourage workgroups to cooperate and help each other. Thus, the Common In-group Identity Model proposes changes in social categorization as a mediating mechanism between intergroup contact and attitudes as well as prosocial behavior between workgroups.

The model provides an additional advantage by suggesting a number of contextual factors that might lead to a change in the categorization of subgroups. Several scholars have pointed out that contextual factors need to be considered more fully in intergroup research (Penner, Dovidio, Piliavin, & Schroeder, 2005; Pettigrew, 2006), as well as in research on organizational behavior (Johns, 2006; O’Reilly, 1991). Therefore, such a model can make an important contribution to the literature on antecedents of attitudes and prosocial behavior between workgroups.

While an intergroup perspective can inform research on prosocial behavior between workgroups, such an analysis can also extend theory and research on intergroup contact and related categorization processes. First, intergroup contact research has mainly focused on the impact contact between different groups has on negative intergroup attitudes and emotions. Only few studies exist that explore the effect of intergroup contact on intergroup prosocial behavior directly (see Dovidio, Gaertner, Validzic, Matoka, Johnson, & Frazier, 1997; Nier, Gaertner, Dovidio, Banker, Ward, & Rust, 2001; Viki, Culmer, Eller, & Abrams, 2006). Second, categorization models of intergroup contact often neglect to differentiate between interpersonal, intergroup, and intragroup outcomes. Contact-categorization models suggest that contact should affect categorization processes in such a way that either personal identities, subgroup identities or a common in-group identity becomes salient. From a social identity perspective, interpersonal behavior is affected when personal identities are made salient. In contrast, a salient subgroup categorization should lead to intergroup behavior, while a recategorization should affect intragroup behavior. However, the impact of contact in different contexts on interpersonal, intergroup and intragroup forms of (prosocial) behavior has received little attention in the literature.

In sum, the study of workgroup relations from a social identity and intergroup contact perspective can provide answers regarding (a) the conditions for contact at

multiple levels of analysis that best promote positive attitudes and prosocial behavior between workgroups, (b) the potential of categorization processes as mediators of this relationship, and (c) the impact of different contact contexts on interpersonal, intergroup and intragroup forms of prosocial behavior.

Thus, in the following chapters, I will try to find out which contextual factors facilitate different forms of prosocial behavior between workgroups, and the categorization processes involved. The thesis is divided into six chapters: Chapter 1 outlines the theoretical and empirical background that forms the basis of the present research. Chapter 2 summarizes the hypotheses drawn from the theoretical background, and will give an overview of the empirical studies. In Chapters 3 and 4, the first study is presented. More specifically, in Chapter 3, predictions by the Common In-group Identity Model and other relevant models are applied to attitudes and prosocial behavior between workgroups in a German mail-order company. In Chapter 4, the data are analyzed from a different theoretical viewpoint because the initial analysis of the first study suggested differential effects on interpersonal and intergroup prosocial behavior, respectively. In this additional analysis, the impact of different contact contexts on prosocial behavior is explored in order to find out whether interpersonal and intergroup forms of prosocial behavior are affected differentially. A second study is presented in Chapter 5 that tests causal relationships predicted by the Common In-group Identity Model longitudinally as well as the “ideal” temporal ordering of categorization levels suggested by the Longitudinal Contact Model (Pettigrew, 1998). Finally, Chapter 6 provides a general discussion of the findings and their theoretical, empirical and practical implications. To provide a rationale for future research, a heuristic model of prosocial behavior between workgroups is presented that takes the empirical findings of this thesis into account.

1. Intergroup Relations in Organizations

1.1 Prosocial Behavior

Prosocial behavior provides an important basis for the operation of organizations (Katz, 1964), particularly those that are functionally structured. Workgroups need to coordinate their work, provide internal services to each other, and share resources in a way that benefits the organization as a whole. Additionally, prosocial behavior shapes the work context (Borman & Motowidlo, 1993), which in turn affects productivity (Podsakoff et al., 1997).

Thus, it is not surprising that prosocial behavior has received much attention by organizational psychologists over the years. Prosocial behavior represents “a broad category of acts that are defined by some significant segment of society and/or one’s social group as generally beneficial to other people” (Penner et al., 2005, p. 366). Two main subcategories can be distinguished¹: Helping/altruism and cooperation.

Helping is defined as “an action that has the consequence of providing some benefit to or improving the well-being of another person” (Dovidio, Piliavin, Schroeder, & Penner, 2006, p. 22). The definition implies an interaction that is unilateral, in the sense that only one partner contributes and the other partner benefits from the interaction directly. This difference in contribution also indicates that the partner offering assistance has a higher status in the situation than the partner that depends on the goodwill of the helper (Nadler & Fisher, 1986). In an organizational context, helping behavior toward colleagues is often conceptualized as discretionary or extra-role behavior, meaning behavior that is not part of a person’s task requirements (cf. Tyler & Blader, 2000).

In contrast to helping behavior, cooperation is defined as a bilateral interaction of equal status partners. Deutsch (1949) conceptualized a cooperative social situation in terms of a positively interdependent goal structure between two or more parties. Neither party can attain its goal without the other party, and the attainment of one parties’ goal is positively correlated with the goal attainment of the other party. Positively related goals lead to a number of “promotive interactions” (Deutsch, 1949; Tjosvold, 1988), such as exchanging information, sharing resources, and constructively discussing problems and conflicts. Cooperation between workgroups can therefore be defined as the quality of intergroup relations when different workgroups work together to accomplish organizational tasks (see Pinto & Pinto, 1990, for a similar definition of cross-functional cooperation). In an organizational context, cooperation is often conceptualized as mandatory or in-role behavior because the attainment of organizational goals is explicitly required by the workgroup or organization (cf. Tyler & Blader, 2000).

¹ Further subcategories of prosocial behavior have been suggested, such as moral courage, solidarity, and consolation. However, these actions refer to behavior in situations that are less frequently encountered at the workplace (e.g., an immoral act, unjust treatment, or grief), and are therefore not included in the present research.

In essence, both helping behavior and cooperation fall into the category of prosocial behavior. However, they differ mainly with regard to the status differential between interacting partners and their level of obligation toward the organization.

With the conceptual distinction of helping and cooperative behavior in mind, I will now proceed to discuss the theoretical and empirical background of prosocial behavior in organizations. First, I will introduce Organizational Citizenship Behavior (OCB) as a construct that includes much of what is considered prosocial behavior in organizational contexts. Although researchers have used other labels, such as prosocial organizational behavior (Brief & Motowidlo, 1986; George & Bettenhausen, 1990; O'Reilly & Chatman, 1986), organizational spontaneity (George & Brief, 1992; George & Jones, 1997), and extra-role behavior (Van Dyne, Cummings, & McLean Parks, 1995), these constructs overlap considerably with OCB. Furthermore, OCB is the most widely used label and has thus received most attention by researchers and practitioners.

1.1.1 Organizational Citizenship Behavior

Organizational Citizenship Behavior, or OCB, was originally defined as “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization” (Organ, 1988, p. 4). However, this definition has been criticized with regard to its understanding of an employee’s role within an organization. First, research has shown that many employees perceive OCB to be in-role behavior rather than extra-role behavior (Morrison, 1994). Second, managers increasingly recognize the value of OCB for the organization, and have therefore started to reward such behavior explicitly or implicitly (Orr, Sackett, & Mercer, 1989; Werner, 1994). Thus, changes in organizational structures and the reward system have rendered two definitional aspects of OCB problematic. As a result, Organ (1997) re-conceptualized OCB as contextual performance referring to behaviors that “support the broader organizational, social, and psychological environment” (Borman & Motowidlo, 1993, p.73). Thus, OCB remains distinct from behavior directly associated with task requirements.

OCB has been proposed to contribute to the overall effectiveness of the organization by freeing up resources, improving the performance of co-workers and managers, helping to attract and retain qualified staff, and leading to better coordination within and between workgroups (Podsakoff et al., 1997). Indeed, research has shown that OCB enhances productivity (Podsakoff et al., 1997; Podsakoff & MacKenzie, 1994; Walz & Niehoff, 2000), especially when task interdependence is high (Bachrach, Powell, Collins, & Richey, 2006).

Two major dimensions of OCB are generally identified, namely helping/altruism and generalized compliance (Smith, Organ, & Near, 1983). Organ (1988) extended these dimensions to five factors, including helping/altruism, courtesy, conscientiousness, civic virtue and sportsmanship. Helping/altruism refers to assistance given directly to colleagues, clients or other individuals in the work context that are in

need. Courtesy, in contrast, is thought of as behavior intended to prevent problems with other individuals. In research, the distinction between helping/altruism and courtesy could not always be replicated (e.g., Podsakoff, MacKenzie, Paine, & Bachrach, 2000; Staufienbiel & Hartz, 2000). Since the target of both helping/altruism and courtesy is clearly another individual Williams and Anderson (1991) proposed to subsume these dimensions in the category individual-directed OCB, or OCB-I. Individual-directed OCB is distinguished from organization-directed OCB, or OCB-O, which consists of the factors conscientiousness, civic virtue, and sportsmanship (see Coleman & Borman, 2000, for a similar distinction). Conscientiousness refers to behavior that is marked by a very high standard of diligence and compliance, whereas civic virtue includes participation in the organization and personal initiative. Sportsmanship, in contrast, is shown when a person refrains from complaining about minor inconveniences and from constantly criticizing his or her colleagues (Organ, 1988). OCB-O is not directed at a specific person but rather benefits a workgroup or the organization directly (Coleman & Borman, 2000). In fact, in functionally structured organizations, the beneficiary of OCB-O is usually the workgroup rather than the organization. Because projects and resources are typically assigned to workgroups, OCB-O affects the performance of the workgroup directly (George & Bettenhausen, 1990).

Most research on antecedents focuses on attitudinal predictors of OCB such as job satisfaction, organizational commitment, perceived fairness and supervisor support (e.g., Smith et al., 1983). Meta-analyses have corroborated the idea that employees' perception of the organization, and the resulting attitude employees hold toward the organization, are related to levels of OCB shown (LePine, Erez, & Johnson, 2002; Organ & Ryan, 1995; Riketta, 2005; Riketta & Van Dick, 2005; Van Dick, Grojean, Christ, & Wieseke, 2006). More recently, Rioux and Penner (2001) provided evidence that different motives predict OCB-I and OCB-O, respectively. They found that prosocial value motives were most strongly related to OCB-I, whereas organizational concerns were more closely related to OCB-O, particularly conscientiousness.

Although the impact of employees' organizational and workgroup attachment has been recognized by OCB researchers, other social identity processes have not yet been focused on, especially concerning OCB shown toward members of other workgroups. Research usually considers the overall level of OCB, regardless of the group membership of the provider relative to the beneficiary of OCB. Thus, the implications for predicting *intragroup* as compared to *intergroup* OCB have not been considered, although evidence points to different antecedents and processes of inter-personal, intergroup and intragroup helping (Levine et al., 2005; Stürmer et al., 2005; Stürmer, Snyder, Kropp, & Siem, 2006; see also Chapter 1.2.1). Consequently, the group membership of the receiver of help needs to be considered in relation to the group membership of the provider of help. Similarly, group-directed OCB can be shown by an employee working on a project for his or her own workgroup or when working on an assignment by another workgroup. This difference is not considered by previous

research on OCB. The present research attempts to fill this gap in the literature by focusing explicitly on OCB-I and OCB-O shown toward (members of) another workgroup.

1.1.2 Cooperation

Similar to discretionary prosocial behavior, cooperation has also been conceptualized in a number of different ways in social and organizational research. For instance, Deutsch (1949) defines cooperation in terms of social relations, with positively linked goals creating a cooperative situation. The approach by Deutsch (1949, 1973) was later extended by Tjosvold (1984, 1986) to the organizational domain. Tjosvold (1986) differentiates more explicitly between objective goal interdependence (i.e., actual task and reward structure), and subjective goal interdependence (i.e., the perception of the goal structure by organizational members), with the latter as the more decisive factor for interactive behavior. Additionally, Tjosvold (1988) identified four dimensions of “promotive interactions” that follow from positive goal interdependence (see also Deutsch, 1973): (1) the exchange and combination of information, ideas, and resources, (2) assistance, (3) constructive discussion of problems and conflicts, and (4) mutual support and encouragement. Similar to Deutsch (1973), Sherif and his collaborators (Sherif, 1958; Sherif, Harvey, White, Hood, & Sherif, 1961) found positive goal interdependence to be the main determinant of cooperative interactions between groups.

In contrast to Deutsch (1949) and Tjosvold (1984), social dilemma research conceptualizes cooperation explicitly in behavioral terms. Here, cooperation is defined as an act that maximizes the joint outcome, and is differentiated from defection, an act that maximizes self-interest (Chen, Chen, & Meindl, 1998). These behavioral outcomes are usually examined in mixed-motive situations that create a conflict between the interests of the individual and the collective. Typical mixed-motive games used in research are the prisoner’s dilemma (e.g., Axelrod, 1984), public goods dilemma (e.g., Bornstein, 1992; Rapoport, 1987), and resource dilemma (e.g., Hardin, 1968; Messick, Wilke, Brewer, Kramer, Zemke, & Lui, 1983). In organizations, for instance, a resource dilemma may result from a limited resource pool (e.g., office equipment) that is shared by various parties (e.g., employees, workgroups). If the use of the resource is positively related to a rewarded performance, each party may be motivated to increase its access to the resource, simultaneously limiting its use by other parties. While this strategy creates an individual advantage, the welfare of the collective (i.e., the organization) might be jeopardized because the performance of other parties contributing to the overall performance is likely to deteriorate (Kramer, 1991).

Due to the enormous amount of theoretical and empirical contributions that have resulted from social dilemma research, a review would be an impossible task in the narrow confines of this thesis (for excellent reviews see Dawes, 1980; Komorita & Parks, 1995; Messick & Brewer, 1983). Therefore, I will concentrate on the findings

that most directly contribute to an understanding of cooperative behavior between workgroups.

As Wit and Kerr (2002) point out, the social structure of an organizational context creates a complex social dilemma because individuals are nested within subgroups (e.g., workgroups) that are part of a superordinate category (i.e., the organization). Hence, cooperative behavior between workgroups might be influenced by the self-interest of individual group members, the interest of the workgroups themselves, and considerations of the collective organizational welfare. Thus, the nature of interdependence at three different levels influences the choice of a cooperative or competitive strategy (Bornstein, 2003).

Furthermore, social dilemma research has consistently found that groups are much less cooperative than individuals (Schopler & Insko, 1992; see also Wildschut, Pinter, Vevea, Insko, & Schopler, 2003, for a meta-analysis). In general, three hypotheses have been offered to explain this interindividual-intergroup discontinuity effect: (1) schema-based distrust, or fear, (2) social support for shared self-interest, or greed, and (3) identifiability.

The fear hypothesis suggests that distrust is greater toward other groups than toward other individuals (Wildschut, Insko, & Pinter, 2004) because people generally expect interactions between groups to be contentious, or even hostile (Hoyle, Pinkley, & Insko, 1989). In social dilemma situations, where the party that cooperates has to bear heavy losses when the other party defects but only minor losses when defecting itself, the rational choice is to defect, i.e., to behave non-cooperatively, unless the other party can be trusted to cooperate.

The greed hypothesis argues that self-interested behavior of group members is supported by the group. In contrast, social support for competitive behavior is not available to individuals (Insko, Schopler, Hoyle, Dardis, & Graetz, 1990; Schopler, Insko, Graetz, Drigotas, Smith, & Dahl, 1993). Group support can be either explicit, or flow from an in-group favoring norm (Wildschut, Insko, & Gaertner, 2002).

The third explanation, identifiability, refers to the anonymity created by a group. In an interpersonal situation, the person acting selfishly by defecting can be easily identified by the other party, whereas it remains unclear which group members voted for a competitive strategy in an intergroup dilemma based on group consensus (Schopler, Insko, Drigotas, Wieselquist, Pemberton, & Cox, 1995). Due to the social desirability of cooperative behavior compared to selfish behavior, individuals should employ cooperative strategies more than groups who are protected by anonymity.

In general, the discontinuity effect is larger under conditions of procedural interdependence and unconstrained communication (Wildschut et al., 2003), and can be attenuated when the salience of the collective level is increased (Wit & Kerr, 2002). Procedural interdependence refers to the procedure by which a group's decision whether to cooperate or defect is determined. When the group decision is based on an aggregate of the individual choices made by group members, procedural interdependence is high

because the group outcome is determined by the joint action of all group members (Insko et al., 1994). Group strategies become less cooperative when procedural interdependence is high because anonymity is created that typically encourages greed. Additionally, the intergroup situation becomes more salient, leading to distrust. In contrast, when individual members of two groups interact directly after consulting with members of their own group (i.e., a situation of low procedural interdependence), they tend to behave similar to individuals in interpersonal dilemma situations (Wildschut, Lodewijkx, & Insko, 2001).

Communication has been consistently found to facilitate cooperative strategies in interpersonal social dilemma situations (Dawes, 1980). However, in intergroup situations, communication is much less effective, although groups tend to assert cooperation as frequently as individuals (e.g., Schopler et al., 1995). The reasons for this effect can also be explained with fear, greed, and identifiability. First, the assertion of cooperation by a group is less frequently believed in because the source is rated as untrustworthy. Second, an opponent that promises cooperation can be exploited more easily in intergroup situations due to the anonymity that is created.

A heightened salience of the collective level has been shown to lead to more cooperative choices for both individuals (e.g., Brewer & Kramer, 1986) and subgroups (e.g., Kramer & Brewer, 1984; Wit & Kerr, 2002). For instance, participants sharing a collective group membership show more individual restraint in a resource dilemma than individual participants or subgroup members, respectively, especially when resource depletion becomes obvious (Brewer & Kramer, 1986; Kramer & Brewer, 1984). When a common in-group identity is emphasized, social distance between group members is decreased (see also Chapter 1.2.2). A heightened salience of the collective level leads group members to distinguish less between their own individual outcomes and that of others, assigning more value to the collective good (De Cremer & Van Vugt, 1999). Furthermore, a shared group membership may lead group members to expect more in-group favoring behavior from other in-group members, creating trust, reciprocity, and a collective norm encouraging cooperation (Kramer & Goldman, 1995; Wit & Wilke, 1992). In a study by Wit and Kerr (2002), participants played a nested social dilemma game in which they could allocate resources to a private account, a subgroup account or a collective account, yielding differing payoffs. Results indicated that most resources were allocated to the particular level which had been made salient by a common fate manipulation.

In social dilemma research, the payoff matrix is devised by the experimenter in such a way that cooperation by every participant leads to the highest possible outcome, but defection creates a higher payoff for one party over another. In organizations, however, the advantages or disadvantages of cooperation are often less tangible. For instance, competition is often thought to be more motivating and thus effective than cooperation (e.g., Forsyth, 1999). On the other hand, cooperation seems vitally important for the successful implementation of projects and the workflow in general.

Research in a health care setting showed that cross-functional cooperation led to higher perceived task outcomes (i.e., successful project implementation), and higher psychosocial outcomes (i.e., satisfaction with the project) (Pinto, Pinto, & Prescott, 1993). Furthermore, Johnson, Maruyama, Johnson, Nelson, and Skon (1981) compared the effect of co-operative, competitive, and individualistic situations on productivity in a meta-analysis. Their results provided evidence that cooperation is overall more effective than competition.

In sum, research on cooperation has emphasized the importance of differentiating between interpersonal and intergroup behavior, with intergroup behavior tending to be less cooperative. Furthermore, different antecedents of interpersonal and intergroup cooperation have been identified, based on the premise that intergroup situations lead to more fear, more greed and less identifiability than interpersonal encounters. Another fundamental finding is that positive (subjective) goal interdependence increases the likelihood of cooperative behavior (Bornstein, 2003; Deutsch, 1949; Sherif, 1958; Tjosvold, 1984) which can be encouraged further when the collective level is made salient (Brewer & Kramer, 1986; Kramer & Brewer, 1984). In the following section, the Social Identity Approach is presented in order to illuminate the processes that create differences between interpersonal and intergroup behavior, and the specific role social categorization plays in this context.

1.2 Intergroup Processes

A prominent framework for the analysis of cognitive, motivational and behavioral processes from an intergroup perspective is the Social Identity Approach (SIA). SIA consists of Social Identity Theory (SIT; Tajfel & Turner, 1979) and its cognitive derivate, Self-Categorization Theory (SCT; Turner et al., 1987). As the full depth of the theoretical background of SIA is beyond the scope of this thesis, I will focus primarily on the essential concepts that apply to the research question. However, numerous more detailed introductions to SIA in organizational contexts are available in the literature (see for example Haslam, 2004; Haslam & Ellemers, 2005; Hogg & Terry, 2000; Van Dick, 2001, 2004; Van Knippenberg, 2003). First, I will outline basic propositions of SIT, followed by extensions proposed by SCT.

1.2.1 *Social Identity Theory*

The basic proposition of SIT is that people derive parts of their self-concept, their social identity, from memberships in social groups (Tajfel & Turner, 1979). A social identity is defined as a person's knowledge that he or she belongs to a certain social group, as well as the emotional and value significance that person ascribes to the group membership. In contrast, the personal identity of an individual is that part of the self-concept that refers to a person's idiosyncratic characteristics, and the way these differentiate him or her from other people, together with the emotional and value significance of this individuality (cf. Haslam, 2004).

In contrast to definitions of social groups in terms of social interdependence and cohesion, predominantly found in small group research (Cartwright & Zander, 1968; Lewin, 1948), SIT defines a social group more broadly:

"[A] social group can be defined as two or more individuals who share a common social identification of themselves or, which is nearly the same thing, perceive themselves to be members of the same social category" (Turner, 1982, p. 15).

According to SIT, membership in a social group can contribute to a person's self-esteem (Tajfel & Turner, 1979) and uncertainty reduction (e.g., Hogg & Mullin, 1999), but only if the social group is distinct from other social groups and has achieved a high status in relation to out-groups on relevant comparison dimensions. According to SIT, the striving for such positive distinctiveness should generally lead to intergroup competition and a preferential evaluation and treatment of in-group members (Mullen, Brown, & Smith, 1992), at least on positively valued dimensions (Otten & Mummendey, 2000).

Tajfel, Billig, Bundy, and Flament (1971) provided evidence that a categorization into arbitrary social groups can be a sufficient basis for intergroup discrimination, even in the absence of conflict or any other real-world significance of the social groups involved. Although participants in the experiments using the minimal group paradigm were provided only with a minimal basis for categorization, not knowing who other in-group and out-group members were, they still tended to allocate more resources to an in-group member as well as more positive evaluative ratings than to out-group members (see also Brewer, 1979). Furthermore, strategies that are commonly chosen in interpersonal allocation situations such as fairness/equality (Messick, 1993), or the greatest common good (i.e., maximum combined profit) were chosen less often than a strategy that maximized differences between the profit of the in-group member relative to the out-group member, even if this meant losing the maximum in-group profit. These results resemble the interindividual-intergroup discontinuity effect in cooperation research, where groups typically choose less cooperative strategies than do individual players (Wildschut et al., 2003).

Consistent with an SIT perspective, the overall level of prosocial behavior shown toward the in-group should be higher than prosocial acts toward an out-group because group members should be motivated to benefit their own group more than other groups (Turner, 1982). In support of this hypothesis, research has found that help is more readily given to in-group members than to out-group members (e.g., Levine et al., 2005). Furthermore, different motives might underlie the display of helping behavior toward the in-group and out-groups, respectively. For example, helping an in-group member has been shown to be more strongly influenced by empathic concern, whereas helping an out-group member has been shown to be mostly based on a cost-reward-

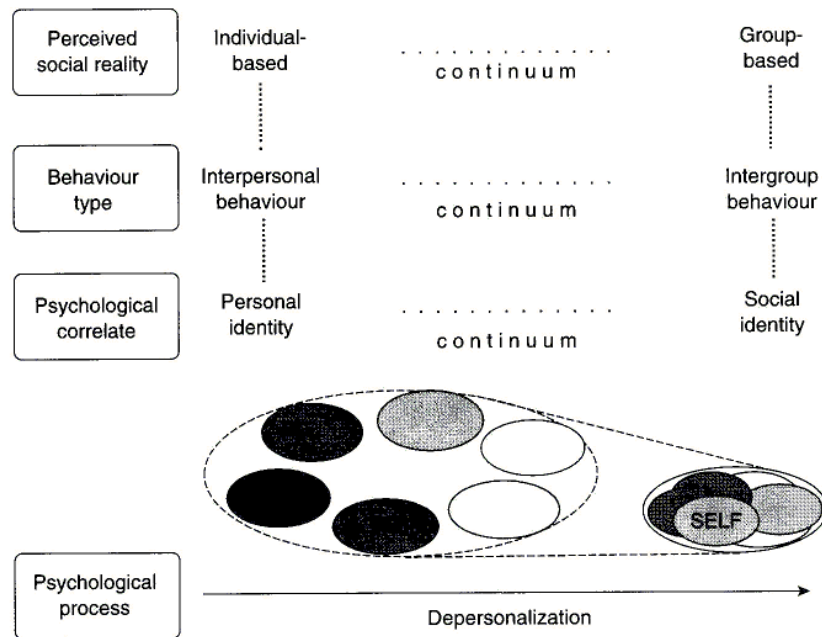


Figure 1.1. Variation in self-categorization as a function of depersonalization (from Haslam, 2004, p. 31).

analysis (see Stürmer et al., 2005; Stürmer et al., 2006). In addition, intergroup helping can be used as a strategy to reaffirm a threatened group identity (Van Leeuwen, 2007), or to maintain a high group status (Nadler & Halabi, 2006).

Building on the idea that a social identity can have a considerable impact on a persons' perception and behavior, Tajfel (1978) proposed a behavioral continuum reaching from interpersonal to intergroup behavior, as illustrated in Figure 1.1. He suggested that the interaction between people will not always be based on the idiosyncratic characteristics of the persons involved, i.e. their personal identity. Rather, when social categorization processes are activated, people tend to act as representatives of their social group. However, Tajfel (1978) also noted that purely interpersonal behavior (i.e., acting only in terms of each partner's personal identity) and purely intergroup behavior (i.e., acting only in terms of each partner's social identity) are extreme forms of social behavior. Most social behavior is thought to be somewhere in-between the poles interpersonal and intergroup.

While SIT focuses on the motivational underpinnings of intergroup behavior, SCT has been developed to explain which cognitive processes lead people to behave in terms of a certain social group membership as opposed to their personal identity.

1.2.2 Self-Categorization Theory

The key proposition of SCT is that people tend to categorize themselves and other people in their immediate surroundings into different social categories or groups (Turner et al., 1987). Because people are members of many different social categories,

which can be more or less inclusive (e.g. workgroup, division, organization), SCT further assumes that accessibility, a characteristic of the perceiver, and fit, a contextual factor, determine whether a social category becomes salient, i.e. perceptually and behaviorally relevant. More specifically, a social category is accessible when it is used frequently or when it conforms to the goals of the perceiver (Oakes & Turner, 1990). Category fit is achieved when the categorization allows differences within categories to be minimized and differences between categories to be maximized (comparative fit), and these categories conform to prior expectations (normative fit) (e.g., Turner, Oakes, Haslam, & McGarty, 1994). As a result, category salience can change quickly from one categorization level to another within a given situation. In contrast to category salience, social identification is a more “enduring state that reflects an individual’s readiness to define him- or herself as a member of a particular group” (Haslam, 2004, p. 281).

When a social category becomes salient, self-categorization leads to depersonalization to the extent that a person identifies with the salient social group (Turner et al., 1987). In the context of SCT, depersonalization refers to a process which leads members to act in accordance with the perceived group prototype. Thus, the self is regarded as interchangeable with other in-group members, leading people to feel and behave in conformity with their social group (Turner, 1985). Because the prototype of the in-group tends to be shared by members of a group, this prototype is in essence a group norm (Hogg & Reid, 2006). Group norms are “regularities in attitudes and behavior that characterize a social group and differentiate it from other social groups” (Hogg & Reid, 2006, p. 7). Because the effect of depersonalization is stronger the more a person identifies with the salient social category, the relationship between group norms and behavior should also be stronger the more a group member identifies with the social group (Terry & Hogg, 1996). Research supports this notion by showing that group norms are more strongly translated into behavior, the more group members identify with their social group (Hogg, 1996; Terry, Hogg, & White, 1999).

Furthermore, as a result of depersonalization, behavior shifts from the interpersonal to the intergroup pole of the continuum (see Figure 1.1). For instance, when group membership is salient, out-group members are perceived as more homogeneous and are treated in a more uniform and undifferentiated manner (e.g., Haslam, Oakes, Turner, & McGarty, 1995; Mullen & Hu, 1989). Because a qualitative difference in behavior can be expected depending on the categorization level, Haslam (2004) proposed that the relationship between a predictor and criterion variable should be stronger when their category level is congruent. For instance, personal characteristics should predict interpersonal behavior better than intergroup behavior. Similarly, attitudes toward a certain group should predict behavior at the same categorization level better than behavior at a higher or lower level of categorization. In line with this Congruity Hypothesis (Haslam, 2004), Rioux and Penner (2001) showed that personal prosocial motives were more strongly related to individual-directed OCB than were organizational concerns, while organizational concerns were more strongly related to

organization-directed OCB than were prosocial motives. In a similar vein, Ullrich, Wieseke, Christ, Schulze, and Van Dick (2007) could show that identification with an organizational group is primarily related to behavior at the same level of categorization. In particular, their research showed that identification with the (superordinate) corporate organization was more strongly related to corporate citizenship behavior than was identification with the (subordinate) franchise organization.

In sum, SIA suggests that personal and contextual factors can activate a particular social identity by increasing the salience of a specific social category, for instance the workgroup. This should in turn lead to in-group favoring behavior and attitudes following depersonalization. Due to the need to positively differentiate from other relevant groups, workgroup members should behave more competitively in a salient intergroup context than in an interpersonal interaction with members of other workgroups. Furthermore, in intergroup contexts, the behavior of workgroup members should be determined by workgroup membership rather than personal characteristics of the interacting partners. Another corollary of SCT is that workgroup norms should have a stronger impact on the behavior of workgroup members that identify strongly with their respective workgroup.

In the next section, models based on Intergroup Contact Theory (ICT) and SIA that attempt to improve intergroup relations by changing the level of categorization are discussed.

1.3 Improving Intergroup Relations

Because categorization is a sufficient basis for intergroup competition and bias (Tajfel et al., 1971), it is not surprising that workgroups in organizations are frequently creating difficulties for management (Wunderer, 1990) by engaging in intergroup rivalries (Bierhoff & Müller, 1993; Schütz & Bloch, 2006). However, a reduction of conflict between workgroups might not suffice to keep pace with requirements by the workflow that demands cooperation and assistance. Thus, the management of intergroup relations in organizations requires focusing simultaneously on the reduction of conflict and the improvement of intergroup prosocial behavior.

A prominent theory that has been widely employed to reduce intergroup conflict and prejudice is ICT (Brown & Hewstone, 2005; Pettigrew, 1998). ICT is based on the Contact Hypothesis (Allport, 1954) and specifies conditions and processes that determine whether contact between members of opposing groups leads to less bias and negative affect. Models based on SIA, in contrast, have focused on changing the level of categorization in a way that would lead to improved intergroup relations. In recent years, researchers have attempted to integrate ICT and SIA models by proposing that contact can change category salience either to the interpersonal level (decategorization), or a more inclusive group level (recategorization). The Longitudinal Contact Model (LCM; Pettigrew, 1998) and the Common In-group Identity Model (CIIM; Gaertner & Dovidio, 2000) both integrate the proposed categorization models though in different

ways. The LCM suggests that different levels of categorization need to be salient *at different times* during the contact situation to reduce prejudice most effectively. The CIIM, in contrast, proposes a model with different levels of categorization as *simultaneous* mediators between contact and intergroup outcomes. However, a challenge for the CIIM is posed by the IPM (Mummendey & Wenzel, 1999). Before discussing the afore-mentioned models, a short overview of the basic tenets of ICT is presented.

1.3.1 *Intergroup Contact Theory*

Contact between members of different groups has long been considered a remedy for intergroup bias, prejudice and discrimination. However, early research provided inconsistent results (e.g., Amir, Bizman, Ben-Ari, & Rivner, 1980; Sims & Patrick, 1936). This led a number of researchers to formalize conditions that were considered necessary for intergroup contact to have a prejudice-reducing effect (see Dovidio, Gaertner, & Kawakami, 2003, for a historical review). Allport (1954) specified four conditions for “optimal” intergroup contact, suggesting that groups that (a) work interdependently toward (b) a common goal within (c) an equal status setting supported by (d) authority, norms or customs will show less prejudice toward each other.

The first two conditions, interdependence and common goals, correspond to cooperative situations as specified by Deutsch (1949) and Tjosvold (1984). Thus, a contact situation that provides a common goal for both groups that can only be attained by cooperation rather than competition should lead to less prejudice and in-group preference. Sherif and colleagues (1961) demonstrated the effects of negative and positive goal interdependence on intergroup relations vividly in their Robber’s Cave field study. When two groups of summer camp boys were made to compete for a number of prizes, hostility between the groups ensued. Only when the experimenters introduced goals that could only be attained through a common effort by both groups, for example pooling money to rent a video tape, did conflict and prejudices subside gradually. Further evidence supporting the role of positive goal interdependence is provided by cooperative learning programs (e.g., Slavin, 1983), such as the Jigsaw Classroom (Aronson & Patnoe, 1997). It also needs to be noted that failure of goal attainment following a cooperative effort may result in scapegoating and out-group derogation (e.g., Giessner, 2004; Worchel, Andreoli, & Folger, 1977).

For the third condition, equal status, research does not provide unequivocal support. While Allport (1954) emphasized the perception of equal status within the contact situation, Brewer and Kramer (1985) argued that status differences stemming from a history of intergroup relations are likely to influence the perception of relative status during contact. Furthermore, attempts to redress status inequalities within the situation are usually perceived as unfair (Norvell & Worchel, 1981). Equal status also seems to be a more important precondition for prejudice reduction for low-status

groups. In contrast, high-status groups might even perceive equal status as a threat to positive group distinctiveness (Brewer & Kramer, 1985; Mullen et al., 1992).

Support of intergroup contact by authorities and norms seems particularly important in organizational contexts. More specifically, supportive leaders can help to create norms of equality, which in turn may lead to greater acceptance of contact, as well as more positive and enduring effects (Brewer & Kramer, 1985; Pettigrew, 1998).

The original list of “optimal” conditions for contact has been extended over the years, creating difficulties for their implementation in contact programs (cf. Hewstone & Brown, 1986; Pettigrew, 1998). Although it has been argued that most additionally proposed conditions are merely facilitating in particular circumstances, two additional conditions seem to be of relevance for contact in natural settings: friendship potential and opportunities for contact. Pettigrew (1997) suggested that opportunities to form friendship bonds during intergroup contact can reduce prejudice more effectively because friendship comprises changes both in cognitive and affective factors. The relevance of friendship contact was supported empirically by Hamberger and Hewstone (1997) in a number of European countries. In addition, extended contact (i.e., knowledge of an in-group member’s friendship with an out-group member) relates to more positive attitudes toward the out-group (Wright, Aron, McLaughlin-Volpe, & Ropp, 1997). Another relevant condition in natural settings is opportunity for contact *per se* because it is an important prerequisite for intergroup contact and friendship. For instance, the proportion of foreigners in a person’s neighborhood or at the workplace has been shown to predict the frequency of contact with foreigners and foreign friends, which in turn was negatively related to prejudice (Wagner, Christ, Pettigrew, Stellmacher, & Wolf, 2006; Wagner, Van Dick, Pettigrew, & Christ, 2003).

Pettigrew and Tropp (2006) integrated the vast number of studies conducted over the years to test the Contact Hypothesis in a meta-analysis. They found the predicted inverse relationship between intergroup contact and prejudice (mean $r = -.215$) in virtually all studies, even when Allport’s contact conditions were completely absent. Nevertheless, they also showed that contact conditions facilitated the effect of contact on bias, with larger effects when contact conditions were fully realized. In sum, contact can be regarded as a well established method for prejudice reduction (Pettigrew & Tropp, 2006).

While the negative relationship between contact and prejudice seems to be quite consistent, the direction of causality is less well established. The Contact Hypothesis assumes that contact reduces bias. However, due to selection processes, intergroup bias may also prevent intergroup contact. Cross-sectional (Pettigrew, 1997) as well as longitudinal evidence (Brown, Eller, Leeds, & Stace, 2007) is available showing that the causal path from contact to intergroup bias is stronger than the reverse path from intergroup bias to contact. However, a longitudinal study by Levin, van Laar, and Sidanius (2003) found that both paths were of about equal strength.

Research on intergroup contact has also started to answer issues regarding mediating processes and generalization, not addressed by the Contact Hypothesis originally (Pettigrew, 1998). Mediating mechanisms involve functional relations between groups, as well as behavioral, affective, and cognitive responses (cf. Dovidio et al., 2003).

Based on Realistic Conflict Theory, Sherif et al. (1961) argued that positively related goals in a contact situation produce positive attitudes between different groups, whereas negatively related goals lead to negative feelings, stereotypes and competition. Furthermore, Attraction Theory (Lott & Lott, 1965) suggests that contact leading to a successful cooperation heightens the attraction of out-group members because rewarding properties of the achieved success become associated with present out-group members.

The second category of mediators relates to behavior modification following intergroup contact. Miller and Brewer (1986), for instance, reasoned that positive encounters with negatively valued out-group members should generate dissonance. As a consequence, a change in the negative attitude toward the out-group may be adopted to reduce this dissonance. Similarly, norms of intergroup acceptance might be generated by observing oneself and other in-group members interacting positively with out-group members. This mediating mechanism might also explain the extended contact effect (Wright et al., 1997).

For intergroup contact, affective reactions play a pivotal role, both prior to contact (e.g., Esses & Dovidio, 2002; Levin et al., 2003) and as a mediating mechanism (Pettigrew & Tropp, 2000). For instance, intergroup anxiety may prevent group members to engage in intergroup contact. While intergroup anxiety is particularly high during initial encounters, continued contact reduces intergroup anxiety considerably (Islam & Hewstone 1993; Stephan & Stephan 1985, 1992). Furthermore, a reduction in general negative affect has also been shown to mediate the contact-bias relationship (Voci & Hewstone, 2003). Similarly, positive affect tends to be increased during contact, particularly friendship contact. For instance, empathy may develop during intergroup encounters and subsequently reduce prejudice (Batson et al., 1997; Finlay & Stephan, 2000).

Cognitive factors have also been proposed to mediate the relationship between contact and bias. Learning about the out-group might reduce prejudice because contact gives group members the opportunity to learn new information and thus to revise existing stereotypes and to discover positive characteristics (Stephan & Stephan, 1984; Triandis, 1994). However, due to a number of cognitive mechanisms, stereotype-disconfirming information does not seem to provide a strong basis for prejudice reduction (Rothbart & John, 1985). Contact might also provide participants with an opportunity for deprovincialization (Pettigrew, 1998), in the sense that participants discover that other interesting lifestyles and traditions exist which are not provided by the in-group. Such an experience should lead to a reduction in preference for the in-group. Moreover,

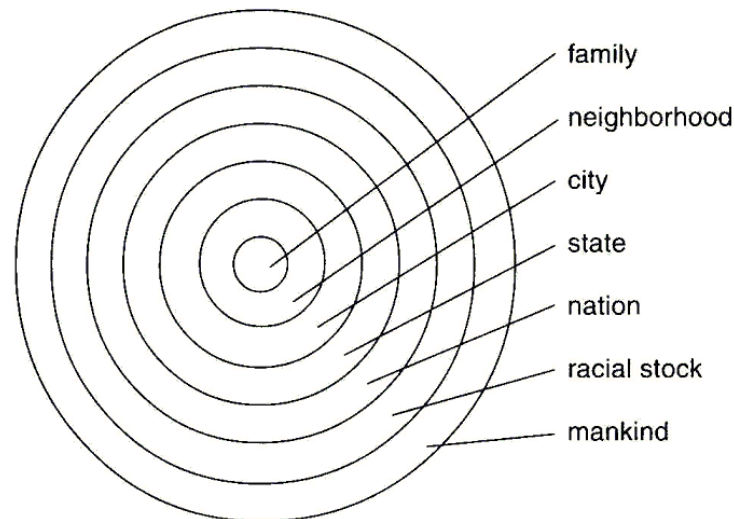


Figure 1.2. Rings of inclusion (from Allport, 1954, p. 56).

changes in the mental representation of the group aggregate have been proposed to mediate the contact-bias relationship (Gaertner & Dovidio, 2000), and will be discussed later in more detail (see Chapter 1.3.2).

In recent years, theorizing and research has also focused on the generalization of contact effects. If contact is to be a viable strategy for bias reduction, effects need to generalize (a) to situations outside of the contact situation, and (b) to other out-group members that have not participated in the contact situation. If intergroup contact leads to more overall tolerance, then effects should also generalize to other out-groups. With regard to all three types of generalization, meta-analytic results have been encouraging (Pettigrew & Tropp, 2006). To account for generalization effects, different categorization processes have been proposed.

1.3.2 Categorization models

Allport (1954) posited a hierarchical organization of categories and depicted different levels of categorization as circles of inclusion, with subgroups being encompassed by superordinate groups up to the highest level, humanity (see Figure 1.2). Similarly, SCT suggests that categories at different levels of abstraction exist, and that category salience determines which categorization level is relevant in a given situation (Turner et al., 1987). Following SCT, categorization models for bias reduction are based on the idea that category salience is malleable by contextual factors within a situation. This idea has generated models that fall into three general classes: decategorization, subgroup categorization, and recategorization.

Decategorization. Based on the idea of an interpersonal-intergroup continuum (Tajfel, 1978), Brewer and Miller (1984) suggested that intergroup bias could be reduced by shifting behavior from the problematic intergroup side of the continuum to the interpersonal pole, and thus reduce the general preference for the in-group. By

creating differentiated and personalized conceptions of group members within a situation, a categorization into in-group and out-group should lose its functionality and personal relationships can be formed. As a consequence, the exchange of personally relevant information should reduce the salience of categories, leading to a shift toward interpersonal behavior. According to a model by Ensari and Miller (2006), personalization includes social comparisons between individuals, in which they may discover similarities and dissimilarities, which should increase out-group variability. For interpersonal contexts, similarity has been consistently shown to increase attraction and liking (Byrne & Griffitt, 1974). Self-disclosure during personalization also increases familiarity and liking, which tend to reduce prejudice. Furthermore, perspective-taking during personalization might create empathy. In essence, personalization encourages friendship between members of opposing groups which in turn reduces prejudice (Brewer & Miller, 1984). Prejudice-reduction following personalization has received direct support mainly from laboratory studies (Bettencourt, Brewer, Rogers-Croak, & Miller, 1992; Ensari & Miller, 2005; Miller, Brewer, & Edwards, 1985). However, survey studies on intergroup friendship also provide evidence that personalized contact reduces prejudice (Hamberger & Hewstone, 1997; Pettigrew, 1997), at least toward the befriended out-group member.

The decategorization/personalization model has received some criticism, particularly with regard to generalization. Because category salience is reduced, generalization to other out-group members as well as other out-groups outside the contact situation seems limited (cf. Hewstone & Brown, 1986). Additionally, personalization might not change behavior in subsequent situations in which categories become salient again. While positive interpersonal attitudes and behavior should increase following a personalized interaction, intergroup behavior might not change dramatically. For instance, a person might help a friend from a rival workgroup during a private encounter. But the same behavior in a salient intergroup context is likely to be avoided because it might be regarded as a disloyal act and even be punished by the in-group. Thus, an increase in positive interpersonal attitudes and behavior does not necessarily generalize into intergroup attitudes and behavior. Nevertheless, because changes in affect have been recognized both as a key to prejudice-reduction and prosocial behavior, personalization seems to be a valuable method for improvements in relations between individual group members.

In organizational contexts, the value of informal contact between employees has been recognized predominantly in the context of networking activities, which are thought to enhance knowledge exchange, innovation and relations between workgroups. While networking activities are actively supported by human resource management in many organizations, little empirical evidence is available on the actual merits of personalization for workgroup relations (cf. Ensari & Miller, 2006).

Subgroup Categorization. Due to the psychological value of categories and also the functionality of groups in many organizational contexts, salient categorizations

cannot always be circumvented. Hewstone and Brown (1986) suggested that bias between groups can be reduced if a mutual understanding about their distinctive areas of expertise is reached. Their initial model, the Mutual Intergroup Differentiation Model (MIDM), followed the idea that groups can reach a high status on different comparison dimensions, thus gaining in positive distinctiveness. Laboratory experiments confirmed that groups exhibited less bias and perceived the situation as cooperative when a task was divided and assigned to the groups in complementary ways (Brown & Wade, 1987; Dovidio, Gaertner, & Validzic, 1998). The effect was even stronger when the task was divided according to the specific strengths of each group (Deschamps & Brown, 1983). Thus, categorization can lead to positive distinctiveness without necessarily creating bias. The distinct advantage of this model is that a salient subgroup categorization increases the likelihood of generalization to out-group members that were not part of the contact situation. On the downside, the dimensions for differentiation need to be equally valued by both groups. However, groups usually favor dimensions on which they possess a high status over those that are dominated by the out-group (Mummendey & Schreiber, 1984). In an organizational context, for instance, some functions are more highly valued than others, mostly those that are more directly associated with generating profit for the organization. Hence, a status hierarchy is quickly established, which might hinder mutual intergroup differentiation. Again, the outcome of the cooperative effort seems decisive for the success of this model. While successful cooperation can reinforce positive intergroup relations, a failure may lead to negative attitudes and less willingness to cooperate in the future (Giessner, 2004). Overall, the MIDM most closely resembles the idea of a functionally structured organization that emphasizes specialization and coordination of organizational groups, and may therefore offer a viable strategy for the improvement of workgroup relations.

Based on their earlier idea that category salience is pivotal for the generalization of positive attitudes from a single out-group member to the out-group as a whole, Brown and Hewstone (2005) recently formulated a new “intergroup contact theory”. According to their new theoretical approach, contact between members of different groups should ideally take place in a context where friendship potential is combined with category salience. When both personal and social identities become salient simultaneously, intergroup anxiety may be reduced due to decategorization effects, while generalization is enhanced by categorization. Lower levels of prejudice toward the out-group as a whole should result. Alternatively, the effect of a salient social categorization may also be achieved when the out-group member is considered to be typical or representative of his or her group (Brown, Vivian, & Hewstone, 1999; Ensari & Miller, 2002; Vonofakou, Hewstone, & Voci, 2007, Study 2; see also Wolsko, Park, Judd, & Bachelor, 2003). In essence, a combination of interpersonal and intergroup salience is proposed as ideal for the reduction of intergroup bias. Indeed, a considerable number of studies confirm that category salience moderates the effect of contact on intergroup bias (e.g., Brown, Maras, Masser, Vivian, & Hewstone, 2001; Van

Oudenhoven, Groenewoud, & Hewstone, 1996). For instance, research shows that contact with out-group friends has a stronger effect on bias when group memberships are salient during contact (Voci & Hewstone, 2003).

While the new model recognizes the potential of decategorization/friendship contact, and also considers a number of affective mediators such as intergroup anxiety, it cannot answer under which conditions subgroup categorization will lead to more bias and competition rather than less. Furthermore, Brown and Hewstone (2005) propose a simultaneous activation of personal and social identities which contradicts the principle of functional antagonism suggested by Turner (1985). According to this principle of SCT, the more a social identity becomes salient, the less salient will a personal identity become. However, a temporal integration as suggested by Pettigrew (1998; see Chapter 1.3.4) may resolve this contradiction because friendship is likely to have formed during earlier contact, and generalization may be achieved when, at a later stage, social groups are made salient during contact between friends.

Recategorization. Based on the circles of inclusion, recategorization models reason that subgroup differences can be overcome by increasing the salience of a superordinate level of categorization that encompasses all relevant subgroups (Gaertner & Dovidio, 2000; Hornsey & Hogg, 2000). Such a common identity can be created either by increasing the salience of an already existing superordinate group membership or by inducing a new identity within a contact situation. By changing the salience to a superordinate level, former out-group members become in-group members and should therefore be awarded the same preferential treatment as other in-group members. For instance, different work groups might be induced to focus on their common organizational identity instead of their different workgroup identities. Such a philosophy is most often endorsed in times of crisis, when management asks all members of staff to pull together.

In contrast to the decategorization model, which attempts to reduce the preference for in-group members, recategorization models claim to reduce bias by extending the pro-in-group bias to out-group members. Experimental evidence for the proposed mechanism of prejudice-reduction is offered by Gaertner, Mann, Murrell, and Dovidio (1989), who showed that experimental groups that had been merged to work on a problem-solving task evaluated the out-group more favorably when a common identity had been induced, whereas less favorable in-group ratings resulted from an individualized representation (i.e., decategorization).

A full recategorization to the superordinate level, however, would mean that subgroup identities need to be psychologically dissolved. If the superordinate level is highly inclusive, optimal distinctiveness concerns are likely to lead to a resistance to recategorization. Optimal distinctiveness theory (Brewer, 1991) suggests that overly large groups cannot fulfill the need for differentiation and are therefore prone to disintegrate into subgroups until an optimal level between the need for inclusion and differentiation is reached again. Thus, recategorization attempts may be short-lived.

Furthermore, groups with a history of conflict tend to be chronically salient categories and can therefore not be completely merged into a superordinate category without creating identity threat that should lead to more bias rather than less, especially for identified subgroup members (Crisp, Stone, & Hall, 2006).

As a reaction to such criticism, a partial recategorization model was also proposed by Gaertner and Dovidio (2000). A partial recategorization suggests that subgroups are perceived as part of a common superordinate identity, while subgroup boundaries remain intact. Hence, subgroups are perceived as being integral parts of the same team. Therefore, a dual identity representation does not deny valued subgroup identities. Although this model circumvents optimal distinctiveness concerns, critics have pointed out that both levels of categorization need to be equally valued so that the common identity at the superordinate level can neutralize subgroup bias. According to the trade-off hypothesis (Gaertner & Dovidio, 2000), attitude change might be weaker following a partial compared to a full recategorization. However, generalization to the out-group as a whole should be enhanced because subgroup categories are still salient in a dual identity representation.

Empirical evidence on the dual identity model is inconsistent. While a dual identity representation successfully reduces bias in contexts such as a multiethnic high-school, the same strategy was related to more bias in the context of an organizational merger (Gaertner, Dovidio, & Bachman, 1996). However, a full recategorization led to more harmonious relations in both contexts. Gaertner and Dovidio (2000) explained the discrepancy in findings with contextual differences. While a dual identity in the context of a corporate merger might indicate failure to create a unified entity, a dual identity representation in a multiethnic high-school might not be incompatible with the organizational goal of diversity. Another explanation for these divergent findings has been offered by the IPM (Mummendey & Wenzel, 1999), discussed next.

1.3.3 In-group Projection Model

The IPM proposed by Mummendey and Wenzel (1999) has challenged the assumption that a recategorization to the superordinate level is an optimal strategy for prejudice reduction. The IPM suggests that groups which see themselves as prototypical for the inclusive category might be more prone to social discrimination because they generalize (or “project”) valued attributes of their own group onto the superordinate category and evaluate other groups within that category against these in-group norms (Waldzus, Mummendey, & Wenzel, 2005; Waldzus, Mummendey, Wenzel, & Boettcher, 2004). Hence, other groups on the superordinate level might be judged as non-normative and therefore a challenge to the in-group’s values. In an organizational context, a marketing department, for instance, would “project” important attributes of their own group, such as creativity or flexibility, as typical for the organization as a whole and would therefore consider other departments such as accounting and finance inferior because they do not fit the prototype to a lesser extent. If the out-group does not

accept the projected characteristics and their inferior status as legitimate, conflict and bias between groups can be expected even though they share a common identity. Oftentimes departments that are directly involved in shaping the product of the organization (e.g., R&D, production, marketing) are seen as more prototypical for the company than administrative departments.

Identification with both the subgroup and the superordinate category (i.e., dual identification) is particularly problematic because groups are motivated to differentiate at the subgroup level while using the common identity as a reference standard (Waldzus, Mummendey, Wenzel, & Weber, 2003). In contrast, a full recategorization is less likely than a partial recategorization to create ingroup projection because the superordinate identity replaces subgroup identities completely, leaving no basis for intergroup comparisons, at least in experimental settings. While laboratory-created subgroups tend to have little meaning for group members and can be replaced by a new superordinate identity which fixes the meaning of subgroups completely, the meaning of natural subgroups is extremely difficult to replace by a superordinate identity. Therefore, in natural contexts, a common identity is likely to leave enough room for ingroup projection (see Giessner, 2004).

As the prototype of the superordinate category provides the standard for subgroup comparisons, its characteristics should influence the relative prototypicality of subgroups. When the prototype is undefined or complex, relative prototypicality is reduced, leading to more tolerance and less discrimination (Waldzus et al., 2003; Waldzus et al., 2005). Additionally, a prerequisite for in-group projection is that the superordinate category is valued positively so as to provide a positive reference standard.

In essence, the effect of recategorization on intergroup bias should depend on the relative prototypicality of subgroups, particularly in natural intergroup settings. However, there is no empirical evidence that prosocial behavior such as helping and cooperation are affected by in-group projection. Because out-group evaluations and intergroup behavior are not always closely related (Struch & Schwartz, 1989), in-group projection does not necessarily affect intergroup behavior to the same extent as it affects attitudes. On the contrary, projected values should not prohibit considerations of the collective welfare when it is served best by cooperative behavior.

1.3.4 Longitudinal Contact Model

The three presented categorization models, decategorization, salient subgroup categorization and recategorization, have been supported by empirical findings and provide different advantages in terms of viability and generalization. However, they seem to make incompatible predictions with regard to the effect of contact. While the decategorization model suggests that contact makes personal identities salient, the

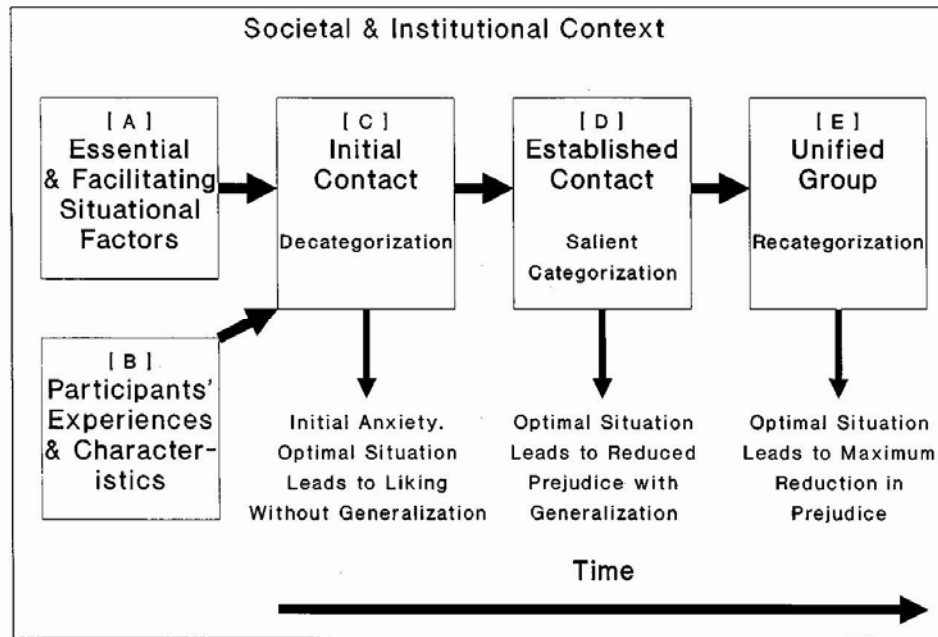


Figure 1.3. Longitudinal Contact Model (from Pettigrew, 1998, p. 77).

recategorization model proposes a common identity as a result of intergroup contact. The categorization model, in contrast, points out the importance of salient categories during contact for generalization. Thus, Pettigrew (1998) proposed to integrate all three models into a time sequence, as illustrated in Figure 1.3. From this perspective, the models need not be exclusive but the different advantages of each model can be capitalized on.

When initiating intergroup contact, decategorization and personalization should have the most advantageous effects because interpersonal contact has been shown to create less intergroup anxiety (Stephan & Stephan, 1985). Furthermore, decategorization should reduce affective bias most strongly because it increases positive and decreases negative affect toward out-group members. Thus, in the first phase of contact, friendship potential is the most central contact condition. In order to facilitate generalization to out-group members outside the contact situation, subgroups should be salient in the second phase of the contact situation, when contact has already been established. Contact conditions such as cooperative interdependence, equal status within the situation and support by authority and norms are important in this phase because they can facilitate mutual intergroup differentiation. If category salience becomes gradually less relevant following repeated intergroup contact, a common in-group identity might create a preferential treatment of former out-group members, equivalent to that of other in-group members. However, Pettigrew (1998) also points out that intergroup contact can brake off before recategorization might be achieved. Furthermore, categorization processes may overlap and even interact with each other. According to Pettigrew (1998), societal factors and individual characteristics of

participants influence contact conditions, and might render them less than optimal, thus hindering categorization processes and their expected outcomes.

So far, longitudinal tests of the model remain relatively scarce. Eller and Abrams (2003, 2004) conducted a number of two-wave studies in differing social contexts (i.e., American language school students in Mexico, English university students toward French foreign students, Mexican employees toward Americans) testing some of Pettigrew's propositions. Overall, they found that an individualized representation was stronger than a subgroup or a common group representation, both at the beginning of contact and at the second measurement occasion. Furthermore, friendship contact was overall more consistently linked to positive intergroup outcomes (i.e., reduced intergroup anxiety, reduced social distance, and more positive out-group evaluations) than the sheer quantity of intergroup contact. Learning about the out-group, behavior modification, and affective ties mediated contact effects on intergroup outcomes only weakly, if at all. However, the design of the studies did not allow to test whether progression through the proposed stages actually yields cumulative effects of categorization processes on prejudice reduction. Overall, the LCM by Pettigrew (1998) offers several advantages. The model explicitly takes into account micro- and macro-level variables that can influence the categorization processes on the meso-level. Since the model proposes contact on the interpersonal as well as the intergroup level, outcomes on both levels can be changed in the course of intergroup contact. Whereas single categorization models change outcomes either on the interpersonal, the intergroup or the intragroup level, long-term contact that follows the proposed sequence might achieve a reduction on all three levels. Additionally, the trade-off between viability and generalization is resolved by starting with the more viable decategorization and categorization models, which are changed into recategorization over time, allowing for a full reduction of prejudice.

While the malleability of category salience provides a tool for prejudice reduction, it also creates problems in the application of such categorization models. Inadvertent changes in the situation can create category salience at unintended levels. The longitudinal model is even more susceptible to sudden alterations in category salience because it features a long-term interaction between social groups. For instance, Eller and Abrams (2003, 2004) found in their longitudinal studies that changes in categorization are difficult to track over time and also seem to change in a recursive fashion.

1.3.5 Common In-group Identity Model

A second model that integrates all three categorization processes is the CIIM by Gaertner and Dovidio (2000; see also Gaertner, Dovidio, Anastasio, Bachman, & Rust, 1993), which is illustrated in Figure 1.4. The CIIM adds on three different accounts to the models discussed so far. First, it explicitly suggests factors that affect the level of categorization based on the Contact Hypothesis, Gestalt psychology, and research on

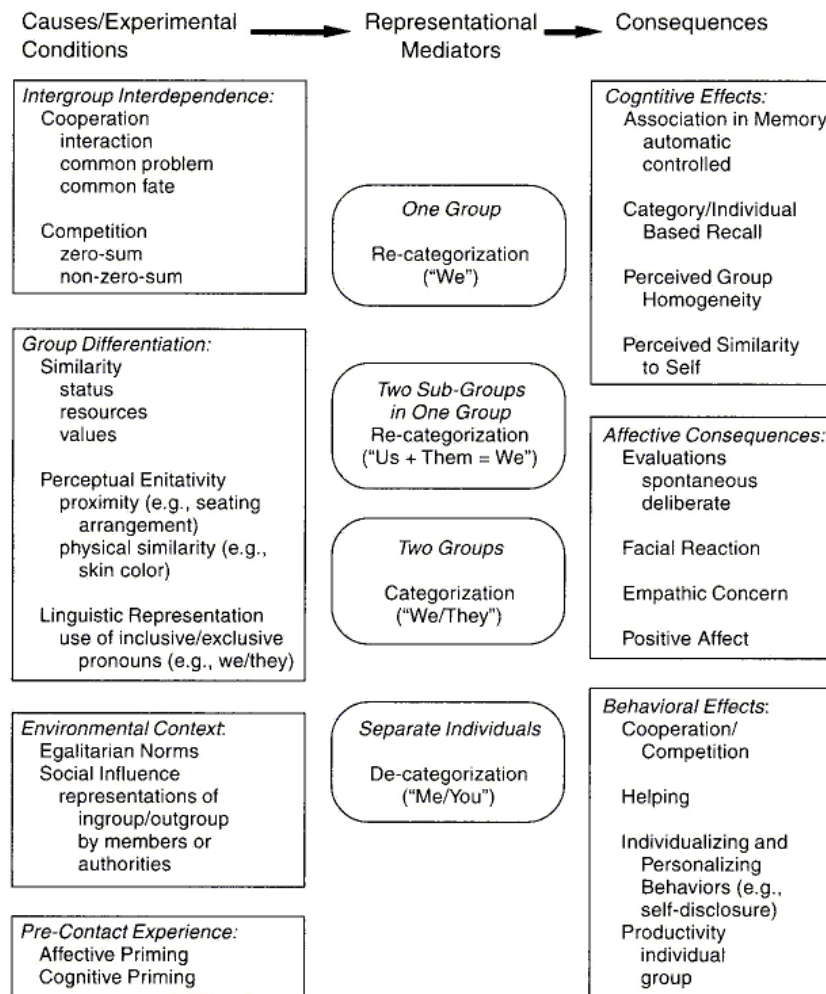


Figure 1.4. Common In-group Identity Model (from Gaertner & Dovidio, 2000, p. 47).

priming. Second, decategorization and categorization processes are integrated along with recategorization processes as simultaneous mediators. And third, intergroup bias is not the only outcome that is thought to be affected by changes in categorization. Further outcomes on the cognitive, affective, and behavioral level are proposed to be influenced, too. In the following, these propositions and related empirical evidence are discussed in more detail.

The CIIM proposes cognitive, perceptual, linguistic, affective, and environmental factors that may lead to changes in categorization (see Figure 1.4 for details). These factors mainly include the four conditions specified by the Contact Hypothesis (interdependence, equal status, egalitarian norms, and authority support), principles of Gestalt psychology (similarity, proximity, and common fate; see Campbell, 1958), as well as cognitive and affective priming. In a number of experiments, Gaertner and colleagues tested the impact of these factors on categorization using ad hoc laboratory as well as real groups. For instance, Gaertner and Dovidio (1986) found with ad hoc laboratory groups that physical proximity and

perceptual similarity, manipulated by different seating arrangements and color coding, changed the level of categorization and ultimately the evaluation of the out-group relative to the in-group. An integrated seating pattern (A-B-A-B-A-B) combined with same color coding led to a common in-group identity, while a separated seating pattern (A-A-A-B-B-B) and different subgroup colors reinforced a categorization as two different groups, resulting in less bias in the integrated compared to the separated condition. Correspondingly, similarities in dress induced a common in-group identity while differences in dress reinforced subgroup categorization, both in laboratory groups (Dovidio, Gaertner, Isen, & Lowrance, 1995) and real groups (Nier et al., 2001, Study 2).

Laboratory studies also provide evidence that cooperation can change the representation from different subgroups toward a common in-group identity. Gaertner, Mann, Dovidio, Murrell, and Pomare (1990) manipulated cooperation so that two subgroups that had been formed beforehand interacted in a problem-solving task (interaction) in order to reach a single consensus solution (common goal) that might be rewarded if it was the most efficient one (shared fate). In the control condition, both subgroups listened together to a taped discussion. As predicted, cooperation induced a common in-group representation and reduced the perception of subgroup boundaries, which in turn alleviated intergroup bias. In a subsequent study, Gaertner and colleagues (1999) separately manipulated two components of cooperation, interaction and shared fate, and tested their effect on categorization and evaluative judgments. In the experiment, two previously formed subgroups either fully interacted in order to find a consensus solution to a problem-solving task, partially interacted by finding subgroup solutions they discussed with each other later, or did not interact, i.e., discussed solutions separately. Additionally, groups in the shared fate condition were told that the combined solution of both subgroups would enter into a competition for a monetary prize, whereas groups in the control condition were told that the solution of each subgroup entered the competition separately. Results showed that only interaction but not shared fate had an impact on intergroup bias. More specifically, groups that fully interacted with each other rated the out-group more positively than groups that interacted partially or not at all. This effect was mediated by a change in the mental representation toward a common in-group. While shared fate did not affect intergroup bias directly or indirectly, it led to more pleasant facial reactions toward out-group members. Another condition specified by the Contact Hypothesis, equal status relations, was also investigated in combination with intergroup differentiation (Dovidio et al., 1998). As predicted from the MIDM (Hewstone & Brown, 1986), groups that interacted under equal status conditions with different areas of expertise showed less bias than groups with unequal status, or groups with areas of expertise on similar task dimensions. Interestingly, under conditions of equal status and positive distinctiveness, bias was reduced in part by a change in the mental representation toward a common in-group identity.

Besides experimental studies that tested the differential effects of contact conditions on categorization and bias, a number of field studies investigated the impact of a combination of contact conditions. In a multiethnic high-school, more positive ratings of contact conditions increased perceptions of ethnic groups as being part of a common in-group (common identity), as being different groups on the same “team” (dual identity), as well as perceptions as different individuals (decategorization). “One group” and “same team” representations also mediated the effect of contact conditions on more positive feelings and attitudes toward students from other ethnic groups. Similarly, contact under “optimal” conditions reduced intergroup anxiety and bias in a banking-merger context (Gaertner et al., 1996) and increased harmony in blended families (Banker & Gaertner, 1998). Bank executives that had recently experienced a merger perceived the new organization more in terms of a common identity when contact conditions were favorable which resulted in more positive intergroup relations. However, in contrast to the high-school study, both dual and individual representations were stronger when contact conditions were unfavorable, and subsequently increased bias. These results are mirrored in the study on blended step-families, where a dual representation of step-families was also related to less favorable ratings of contact conditions and less harmony within the blended families. Apart from demonstrating that a number of factors change the representation of the group aggregate, either independently or in combination, these studies also provide evidence that levels of categorization are differentially affected, and in turn affect intergroup outcomes differentially. Overall, a common in-group representation had the most consistent positive effect on intergroup outcomes, while a dual identity and decategorization strategy yielded varying results in different contexts. As discussed before, cognitive processes such as in-group projection might create difficulties for recategorization models, particularly dual identity representations.

Categorization strategies also differ with regard to generalization. Strategies that keep categories intact are thought to facilitate generalization to out-group members outside the contact situation. An experiment by González and Brown (2003) provided evidence for different generalization effects. They found that cooperatively working subgroups with a common in-group or dual identity representation evaluated an uninvolved group they saw on videotape more positively and awarded more resources than groups with a separate groups or individual representation. However, the expected difference with regard to the trade-off hypothesis between full and partial recategorization was not found.

So far, the discussed studies provide evidence that a common identity can alleviate affective and attitudinal bias. However, the CIIM also extends the focus on the outcome of recategorization from a reduction in bias to prosocial behavior. The reasoning for this proposition is based on the assumption that former out-group members are treated as new in-group members when a common identity representation is induced. Hence, they are awarded the same preferential treatment that is usually

reserved for in-group members, and thus self-disclosure, helping behavior and cooperation should be encouraged.

The idea that a common in-group identity leads to more cooperative behavior is consistent with findings from intergroup social dilemma research, discussed before (see Chapter 1.1.2 for details). Social dilemma studies indicate that individuals that share a common in-group identity show more restraint when a resource is depleted than when no common identity is salient (Brewer & Kramer, 1986; Kramer & Brewer, 1984). More importantly for the CIIM, research with nested social dilemmas provides evidence that groups allocate more resources to a collective account rather than to a subgroup or individual account, when these groups share a common identity (Wit & Kerr, 2002). This tendency is especially pronounced for group members that identify strongly with the superordinate (organizational) group (Polzer, 2004). However, with regard to cooperation, the CIIM proposes a recursive process. Cooperation is both thought to create a common in-group identity, and to be promoted by a common identity representation. Experimental evidence is available for both directions of causality. Similar to the issue of causality regarding the relationship of contact and bias, cooperation and a common in-group representation might be mutually reinforcing processes. However, for the application of the model to natural intergroup relations, it would be informative to know which path is stronger. Unfortunately, longitudinal studies exploring this issue are missing.

In addition to cooperation, Dovidio and colleagues (1997) found that members of two different ad hoc created laboratory groups shared more personal information with each other, and also helped an out-group member not present in the contact situation more, when a common identity had been previously induced compared to a separate subgroup representation condition. Correspondingly, an experiment with university students at a football match indicated that a common identity (indicated by a team hat of the same university) led to more compliance of White participants with a request from a Black interviewer than differing affiliations (i.e., when the interviewer wore a hat of the rival university team; Nier et al., 2001, Study 2).

While findings consistently show that contact conditions lead to a common in-group representation which creates both more positive outgroup attitudes and more prosocial behavior, the conceptualization of the mediating process is not handled consistently in the literature. Although Gaertner and Dovidio (2000) refer frequently to a change in the salience of categorization, they later conceptualize the mediator in terms of changes in cognitive representations, albeit without defining the concept more clearly:

“[Specific causes] alter individuals’ cognitive representation of the aggregate. These resulting cognitive representations (i.e., one group, two subgroups within one group (i.e., a “dual identity”), two groups, or separate individuals) are then

proposed to result in specific cognitive, affective and overt behavioral consequences [...].” (p. 48)

The missing differentiation between the concept of salience and cognitive representation is most problematic with regard to a dual identity representation. According to the principle of functional antagonism (Turner, 1985), when the salience of one categorization level increases, the salience of other categorization levels decrease simultaneously, so that only one level of categorization can be salient at a time. As a result, some researchers have resorted to the construct social identification and tested whether identification with a superordinate category has an impact on intergroup relations as predicted by the CIIM (see for instance, Waldzus et al., 2004; Polzer, 2004; Richter et al., 2006). Because social identification is only thought to affect group members' behavior when the corresponding categorization level is salient, replacing cognitive representations with social identification does not seem to solve the issue entirely. Furthermore, social identification has a strong affective component (Ellemers, Kortekaas, & Ouwerkerk, 1999; Hinkle, Taylor, Fox-Cardamone, & Crook, 1989) whereas representations of the group aggregate seem to be an entirely cognitive construct.

Despite this issue, the CIIM has several features that recommend it for the study of attitudes and prosocial behavior between workgroups. First, findings from SIA and ICT are integrated to provide a comprehensive model of intergroup relations. Second, specific conditions on different levels of analysis are proposed to change intergroup outcomes via different levels of categorization. Both macro-level factors, such as status relations, group norms, and authority support, and micro-level factors, such as perceptions of goal interdependence and pre-contact experiences, are predicted to create a common in-group and dual identity representation as well as individualized perceptions of group members. Thus, the model offers social factors that may improve problematic intergroup relations over and above intergroup contact per se. Additionally, the model also extends intergroup outcomes from a reduction of intergroup bias and hostility toward more prosocial interactions. As argued before, a strategy that can achieve both a reduction in intergroup bias and an increase in prosocial behavior would be of particular value for the management of intergroup relations in an organizational setting.

However, CIIM-related research has so far mainly focused on intergroup bias, with most studies using ad hoc laboratory groups. With regard to cooperation and helping behavior, empirical evidence from field studies is particularly rare. While experimental studies increase the confidence in the proposed theoretical relationships, results cannot simply be generalized to more complex real-world groups. Although the model seems to be quite useful for the prediction and improvement of prosocial behavior between workgroups, to my knowledge, no study has investigated this particular field of research to date.

Therefore, the main objective of the following research is to test predictions by the CIIM concerning effects of contact conditions on attitudes and prosocial behavior between workgroups, mediated by a common in-group representation. So far, contact conditions have only been investigated as an aggregate measure in field research on the CIIM. However, knowledge about differential effects of group-level and individual-level contact conditions has important practical implications because the implementation of all contact conditions simultaneously remains one of the main obstacles for practical interventions based on ICT. In this context, the prediction regarding the group-level contact condition group norm also needs to be modified based on the Self-Categorization Model of Group Norms by Terry and Hogg (1996). The model proposes that identification with the group which prescribes the norm is essential for the norm to have an effect on subsequent behavior of group members. Another extension to the CIIM regards predictions by the IPM. Because a common identity in natural settings is unlikely to replace subgroups entirely, ingroup projection needs to be considered as a moderator of the relationship between common in-group representation and intergroup bias. Besides testing the modified model in the context of workgroup relations, a longitudinal investigation of the causal direction of paths proposed by the CIIM will be another focus of the following research. In this context, the temporal sequence of categorization processes proposed by the LCM will also be investigated. The main hypotheses of this research derived from the CIIM, and relevant extensions, as well as the LCM will be presented in the following chapter.

2. Main Hypotheses

2.1 Introduction

With regard to prosocial behavior between workgroups, both theory and related empirical evidence suggest that (a) intergroup prosocial behavior is more difficult to achieve than interpersonal prosocial behavior, and (b) that social identity processes can help to explain this difference and provide a theoretical basis for the improvement of workgroup relations.

From the perspective of SIA, personal and context factors within a situation can increase the salience of a particular social identity (e.g., the workgroup). As a consequence, group members depersonalize and start to act on behalf of their group rather than being guided by personal motives. Because social groups need to establish positive distinctiveness (i.e., a higher status on relevant comparison dimensions), group members tend to act in an in-group-serving manner. Consequently, prosocial behavior toward in-group members is increased but prosocial acts toward out-group members generally decrease in a salient intergroup context.

However, SIA also suggests that context factors can change the categorization either to a higher-order level (i.e., recategorization) or to the interpersonal level (i.e., decategorization). Categorization at either of these two levels is thought to promote more positive subgroup relations. The CIIM mainly suggests a recategorization strategy. According to the CIIM, positive out-group attitudes and prosocial behavior are best promoted by a change in the level of categorization toward a common in-group identity that is shared by all subgroups. As a result of such recategorization, favorable attitudes and behavior should be extended to former out-group members. “Optimal” conditions for contact as proposed by Allport (1954) have been shown to create such a common in-group identity, resulting in improved intergroup relations, both with regard to attitudes and behavior. The CIIM is the only model based on both SIA and ICT that explicitly suggests antecedent factors for changes in categorization and also predicts more prosocial behavior as a result of these changes. Therefore, the present research is mainly based on predictions by the CIIM. However, the CIIM needs to be extended in a number of important ways, taking into account other theoretical developments, such as the Self-Categorization Model of Group Norms, the IPM, and the LCM.

2.2 Hypotheses Derived from the Common In-group Identity Model

The CIIM proposes that “optimal” conditions for contact as suggested by Allport (1954) have the potential to change the level of categorization, resulting in improved intergroup relations. According to Allport’s Contact Hypothesis, groups that work (a) interdependently toward a common goal, (b) within an equal status setting, (c) supported by authority, as well as (d) norms or customs will show less intergroup bias (Allport, 1954). Furthermore, in settings where contact between groups is not explicitly arranged, opportunities for contact are an additional prerequisite factor for the reduction of bias via intergroup contact (Wagner et al., 2003; Wagner et al., 2006). Therefore,

intergroup bias between workgroups should be reduced when opportunities for contact are good and contact conditions are realized.

Hypothesis 1a (Direct effect on bias): Opportunity for contact and facilitating contact conditions such as goal interdependence, equal status, authority support, and favorable group norms are negatively related to intergroup bias toward other workgroups.

The CIIM extends the Contact Hypothesis by proposing positive changes in intergroup relations not only with regard to intergroup bias but also with regard to behavioral outcomes (cf. Gaertner et al., 1993). For instance, the model suggests that “optimal” contact conditions encourage prosocial intergroup behavior. Thus, workgroups should be more inclined to cooperate and to show helping behavior, when opportunities for contact are good and contact conditions are realized.

Hypothesis 1b (Direct effect on cooperation): Opportunity for contact and facilitating contact conditions such as goal interdependence, equal status, authority support and favorable group norms are positively related to intergroup cooperation between different workgroups.

Hypothesis 1c (Direct effect on helping): Opportunity for contact and facilitating contact conditions such as goal interdependence, equal status, authority support and favorable group norms are positively related to helping behavior toward members of other workgroups.

In addition, the CIIM extends the Contact Hypothesis by proposing a mediating mechanism between contact conditions and outcome variables. The model holds that “optimal” conditions for intergroup contact improve intergroup relations because they facilitate a common in-group representation for groups which are part of the same superordinate category. Instead of representing the group situation in terms of different subgroups (e.g., workgroups), group members should perceive each other as in-group members on a more inclusive level of categorization (e.g., the organization as a whole). As a consequence of recategorization, the positive evaluation of the in-group as well as other positive behavior is likely to be extended to out-groups included in the common in-group identity. Following the CIIM, “optimal” contact conditions should lead employees to think of each other as members of the same organization instead of different workgroups, resulting in a common in-group representation. The representation as a common in-group should, in turn, lead to more cooperation with other workgroups, more helping behavior toward members of other workgroups, as well as a better evaluation of other workgroups.

Hypothesis 2a (Mediation effect on out-group evaluation): The relationship between contact conditions and out-group evaluation is partially mediated by a common in-group representation.

Hypothesis 2b (Mediation effect on intergroup cooperation): The relationship between contact conditions and intergroup cooperation is partially mediated by a common in-group representation.

Hypothesis 2c (Mediation effect on intergroup helping): The relationship between contact conditions and intergroup helping is partially mediated by a common in-group representation.

Although the CIIM proposes that the relationship between “optimal” contact conditions and intergroup bias is also mediated by a common in-group representation, relative prototypicality has been shown to be an important moderator of this relationship. Thus, the original hypothesis by the CIIM will be complemented by predictions drawn from the IPM in the next section.

2.2.1 Supplementary hypothesis concerning relative prototypicality as a moderator

A challenge for the direct effect of a common in-group representation on intergroup bias has been posed by the IPM (Mummendey & Wenzel, 1999). It suggests that groups which see themselves as prototypical for the inclusive category are more prone to intergroup bias because they project valued attributes of their own group onto the superordinate category. Other groups within that category are then evaluated against these in-group values. Thus, members of relatively prototypical workgroups are predicted to show more bias following recategorization than members of less prototypical workgroups.

Hypothesis 3 (Moderating effect of relative prototypicality): The effect of a common in-group representation on intergroup bias is moderated by the relative prototypicality of the workgroup. A common in-group representation reduces intergroup bias more when the relative prototypicality of the workgroup is perceived to be low by workgroup members.

In sum, it is hypothesized that “optimal” contact conditions have a direct effect on relations between workgroups as well as an indirect effect via a common in-group representation. The moderator relative prototypicality is hypothesized to affect the relationship between a common in-group representation and intergroup bias. Figure 2.1 illustrates the hypothesized model.

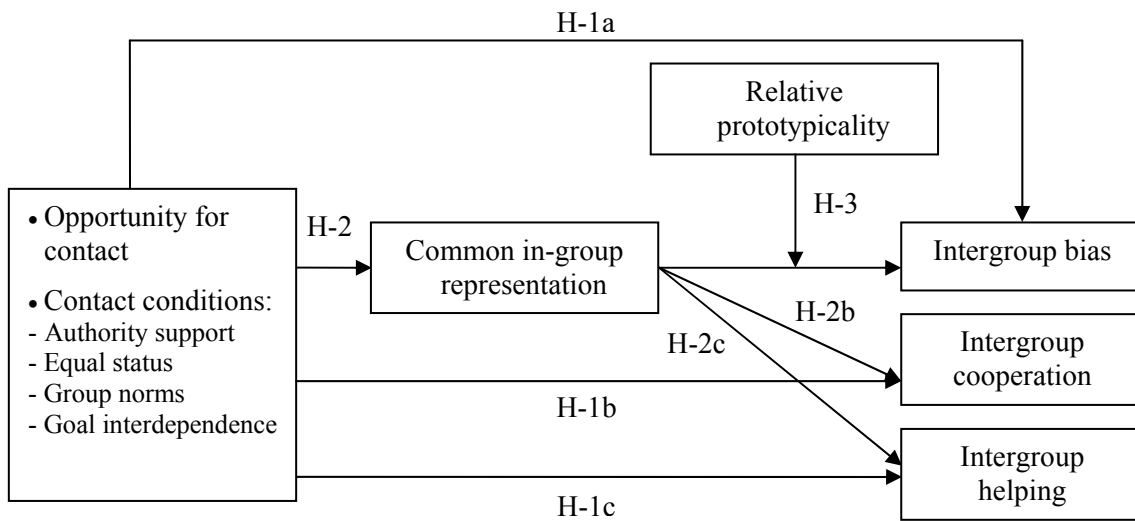


Figure 2.1. Conceptual model of the relations among contact conditions, common in-group representation, outcome variables and relative prototypicality.

Note. H = Hypothesis

2.2.2 Supplementary hypothesis concerning a group norm by identification interaction

According to Hogg and Reid (2006), group norms reflect a shared perception of the group prototype and should therefore be conceptualized as a group-level variable. However, the impact of workgroup norms will also depend on the identification of individual employees with their workgroup. As Terry and Hogg (1996) argue from the perspective of SCT, only group members that identify with their social group are motivated to act on behalf of this group. Thus, when the workgroup is perceived to prescribe prosocial behavior, this group norm should be more strongly translated into prosocial behavior by identified workgroup members.

***Hypothesis 4 (Moderating effect of workgroup identification):** The relationship between a prosocial group norm and helping behavior shown by individual workgroup members will be moderated by members' workgroup identification. For group members with high workgroup identification, the relationship between perceived group norm and helping behavior toward out-group members will be stronger than for workgroup members who identify with their workgroup to a lesser extent.*

2.3 Hypotheses Derived from the Longitudinal Contact Model

An interesting alternative to the CIIM is the LCM proposed by Pettigrew (1998). Whereas the CIIM suggests that different levels of categorization can be activated simultaneously, the LCM posits a sequence of categorization processes that are thought to lead to a cumulative effect of contact on bias. Initial contact is predicted to lead to a reduction in bias at the interpersonal level, particularly if personalization and friendship

facilitate decategorization. When contact is established, subgroup categories should become salient in order to establish generalization of bias reduction to the whole out-group. In the last stage, repeated contact is thought to create recategorization, which should reduce bias most effectively because in-group-favoring attitudes are extended to former out-group members. Thus, a categorization sequence starting with decategorization, followed by a salient subgroup categorization, and recategorization should optimally reduce bias between subgroups.

Hypothesis 5a (Cumulative effect on bias): The categorization sequence from decategorization to categorization to recategorization reduces bias more strongly than alternative categorization sequences.

The LCM by Pettigrew (1998) does not predict other outcomes than prejudice/bias and (negative) affect to be changed by the proposed categorization sequence. However, according to the CIIM, categorization processes affect intergroup behavior, too. Prosocial behavior, for instance, is thought to be encouraged by intergroup contact because (a) initial personalized contact encourages empathy and trust, (b) categorization with mutual intergroup differentiation reduces competition, and (c) recategorization extends in-group-favoring behavior to former out-group members. Therefore, it seems reasonable to extend the LCM to include prosocial behavior as an additional outcome variable.

Hypothesis 5b (Cumulative effect on intergroup cooperation): The categorization sequence from decategorization to categorization to recategorization promotes intergroup cooperation more strongly than alternative categorization sequences.

Hypothesis 5c (Cumulative effect on intergroup helping): The categorization sequence from decategorization to categorization to recategorization promotes intergroup helping behavior more strongly than alternative categorization sequences.

2.4 Overview of Empirical Studies

The research question, how to improve prosocial behavior and attitudes between workgroups, is investigated in two studies conducted in different organizational contexts. In the first study, a cross-sectional survey design is used to test Hypotheses 1 to 4 with data from employees of different workgroups and their respective supervisors in a mail-order company. In the second study, a four-wave longitudinal survey design with student project groups is employed to investigate the direction of causality in the CIIM (Hypotheses 1 & 2) as well as the cumulative effect of the “ideal” categorization sequence proposed by the LCM (Hypothesis 5).

More specifically, in the first part of Study 1, the hypotheses derived from the CIIM as well as the proposed supplementary hypotheses are tested. A multilevel design is employed in order to examine the relationship of contact conditions at different levels of analysis (i.e., individual- and group-level) with bias, cooperation and helping behavior between workgroups, respectively (Hypotheses 1a-c). Furthermore, the mediation hypothesis that contact affects intergroup outcomes via a common in-group representation is tested (Hypotheses 2a-c). The data also allow a test of the moderator hypotheses based on the IPM (Hypothesis 3) and the Self-Categorization Model of Group Norms (Hypotheses 4). The test of Hypotheses 1 to 4 in Study 1 is presented in Chapter 3. Based on the initial analysis of Hypotheses 1 to 4 in Study 1, further hypotheses were formulated and tested using additional data gathered in Study 1. Since these additional hypotheses deviate somewhat from the initial focus on the CIIM, they will be introduced in Chapter 4 prior to their empirical test.

In essence, propositions by the CIIM, IPM and Self-Categorization Model of Group Norms are studied in an applied setting, i.e., relations between workgroups in organizations. The results can help to answer the question which antecedents and processes create more prosocial behavior and less intergroup bias between workgroups. However, the cross-sectional design of Study 1 does not allow a test of the direction of causality proposed by the CIIM. Especially with regard to cooperation, the CIIM suggests an additional reversed path because cooperation is seen both as a predictor and outcome variable in the model. Although experimental studies have supported both a causal path from cooperation to a common in-group representation and vice versa, there is no longitudinal study to date that has investigated the relative strength of these alternative paths. Thus, in Study 2, a longitudinal design is used to determine the direction of causality in the CIIM.

Hypotheses based on the LCM are also investigated in Study 2, which is presented in Chapter 5. The longitudinal design of Study 2 allows the examination of propositions specified in Pettigrew's model. The additive effects of different levels of categorization on intergroup bias, cooperation, and helping behavior, respectively, are investigated over the course of a 14-week project (Hypotheses 5a-c). Additionally, intra-individual changes in categorization over four measurement occasions are explored in order to get a first indication which categorization changes occur naturally during intergroup relations in organizational contexts. Although longitudinal studies by Eller and Abrams (2003, 2004) have tested some propositions by Pettigrew (1998), especially with regard to mediating variables between contact and bias, these studies employed only two measurement occasions and were therefore not designed to test the basic proposition of the model, i.e., the cumulative effect of a specific categorization sequence on intergroup bias. Thus, Study 2 contributes beyond these studies on three accounts. First, four instead of two measurement occasions allow a test of the effect of three categorization levels specified in the LCM (i.e., decategorization, categorization, and recategorization) on intergroup relations. Second, intergroup relations are

investigated over the full life-cycle of groups. Because project groups are temporary workgroups, intergroup relations between project groups can be investigated starting with initial group formation and intergroup encounters. Thus, the contact stages specified in the LCM can be examined from initial contact via established contact to repeated contact experiences. And third, the proposed impact of the categorization sequence on intergroup relations is extended toward prosocial behavior. The results may help to determine which contact contexts and related categorization processes lead to more prosocial behavior and less intergroup bias between workgroups over time.

In sum, the main empirical part of this thesis examines (a) individual- and group-level predictors of attitudes and prosocial behavior between workgroups, (b) a common in-group representation as a mediator variable, and (c) the temporal sequence that best promotes positive attitudes and prosocial behavior between workgroups.

3. Applying the Common In-Group Identity Model

3.1 Cross-Sectional Survey Study in a Mail-Order Company (Study 1, Part 1)

In Study 1, relations between workgroups are studied from a viewpoint that considers both the reduction of negative attitudes and the facilitation of prosocial behavior. The aim is to identify antecedents and mechanisms that lead to less intergroup bias and more prosocial behavior, both on the group- and individual-level of analysis. In particular, the impact of three contact conditions at the group-level (i.e., authority support, group norms, and equal status) and two contact conditions at the individual-level (i.e., goal interdependence, and opportunity for contact) on intergroup bias, cooperation and helping behavior, respectively, are examined. Furthermore, the mediation hypothesis suggesting a common in-group representation as the link between contact conditions and outcome variables is tested. Besides the hypotheses drawn from the CIIM (Gaertner & Dovidio, 2000), two moderator hypotheses are also investigated. The relationship between a common in-group representation and intergroup bias is examined under conditions of low and high relative prototypicality, as suggested by the IPM (Mummendey & Wenzel, 1999). In addition, the interactive effect of prosocial group norms and identification with the workgroup on inter-group helping is tested, as suggested by the Self-Categorization Model of Group Norms (Terry & Hogg, 1996).

The study was conducted in a mail-order company in order to test predictions in a natural context of intergroup relations within an organizational setting. As research by Gaertner and colleagues (1996) shows, the application of the CIIM to natural groups is not as straightforward as theory would suggest. In this regard, group-level predictors as well as moderator effects can be particularly informative for applied settings due to the profound impact contextual variables have on the perceptions and behavior of individual employees (e.g., Johns, 2006). A multilevel approach, taking individual- and group-level variables into account, also follows calls by Penner and colleagues (2005) as well as Pettigrew (2006), who suggest that effects of the normative context and other macro-level variables on intergroup relations need to be understood more fully.

3.2 Method

3.2.1 *Research context*

For Study 1, a company was chosen that met the following criteria. First, the company should have a relatively stable hierarchical structure because employees need to be aware of their particular workgroup membership and those of other employees. In contrast, in companies with a matrix organization or recent restructuring, employees are often uncertain about their principal group membership and their relationship to other groups. Second, a relatively large number of workgroups is necessary so that group-level variables can be statistically tested. Third, at least a basic level of task interdependence between workgroups is needed in order to investigate prosocial behavior in a meaningful context. In addition, some degree of freedom for employees in the way they behave toward other workgroups and their members is essential. Therefore, a

company with white-collar workers seems to provide a more advantageous background for the study of inter-workgroup relations than a company with mainly blue-collar workers. Although task interdependence is high for workers at assembly lines, their behavior toward other employees and workgroups is severely restricted by work requirements. Fourth, it needs to be established that the company has not experienced severe restructuring and layoffs in its recent history nor is preparing for such measures in the foreseeable future because organizational restructuring and layoffs may create unusual amounts of competition between employees and workgroups.

Company. The study was conducted in a German mail-order company operating in the European market, selling clothes, bed linen, and other household goods. The target customer group lies in the age segment of 65 and above. The growing spending power of this age segment on the retail market in Western Europe has kept the profit of this company high, even though the retail sector has been under pressure. Ten years ago, the company was taken over by a German multi-national mail-order company but has remained largely independent in its management and structure.

Divisions and workgroups. The organization is structured in a hierarchical way with four business units that represent 18 divisions (e.g., purchasing, marketing, production, sales), subdivided into 70 workgroups. Most workgroups are integrated into the workflow that is mainly organized around the production of mailing catalogues and sales. The largest internal service provider is the IT division. The company is situated in five main buildings, with most workgroups within walking distance to each other. Divisions are located on different floors of the buildings. Most workgroups within the same division share an open-plan office, visually separated by partitions.

Employees. As production is limited to catalogues and mailings, most employees are white-collar workers, with a relatively large proportion of women in the workforce. Traditionally, employees have been recruited in the region and been trained within the company. In recent years, however, more academic staff has been employed, resulting in an increase in younger employees and higher turnover.

3.2.2 *Research participants and procedure*

Workgroups are at the lowest hierarchical level and are therefore treated as subgroups in this study, with the organization at the superordinate level. Subsequently, only divisions with a workgroup structure were included in the sample. Furthermore, only workgroups with at least three employees were asked to contribute to this study for reasons of anonymity. In total, 56 different workgroups in 15 divisions were approached via an e-mail to the workgroup manager. Workgroups were free to participate of their own accord. Of the 56 workgroups, 51 workgroups (91 %) indicated their interest in the study. Employee data were collected with a paper and pencil questionnaire that I distributed after a 30-minute interview with each of the workgroup managers. Employees of the particular workgroup were informed about the study, the voluntariness of participation and the measures taken to ensure their anonymity. Additionally,

instructions explicitly indicated the importance of answering questions on their own. Questionnaires were completed within a two-week period. A sealed box was left with each workgroup, so that questionnaires could be returned anonymously.

Two workgroups did not have a workgroup manager at the time. Therefore, a total of 49 workgroup managers were interviewed and 386 employees received a questionnaire, of which 286 (74 %) were returned. Only three questionnaires had to be excluded from analyses due to a large amount of missing data. Another three questionnaires were excluded because participants could not be matched with their respective workgroup. The answers of two workgroup managers also had to be excluded from analyses because their employees (six altogether) did not participate.

A selection rate proposed by Dawson (2003) was used to assess whether incomplete group level data were still accurate in predicting true scores. It is calculated as a function of the group response rate and the group size (Selection rate = $(N-n)/Nn$, with N = group size and n = number of responses). Data of all remaining workgroups could be used in the analyses according to selection rates of less than .32. This cut-off point indicates that scores based on incomplete data are correlated with the true scores at .95 or higher.

For multilevel analyses, workgroups without a manager (i.e., 9 participants) were excluded due to missing data on the group level. Thus, the multilevel analyses are based on data of 272 employees from 47 different workgroups and their 47 workgroup managers. Mediation and moderation analyses are based on $N = 281$ datasets of employees from 49 participating workgroups. Workgroup size varied between 3 and 25 employees ($M = 9.53$, $SD = 6.25$). Fifty-four percent of workgroup managers are male. Workgroup managers have been heads of their workgroup for 1 to 20 years ($M = 4.94$, $SD = 4.46$).

3.2.3 Managerial interview

Short interviews of about half an hour were conducted with workgroup managers directly before the distribution of questionnaires within the respective workgroup. An interview guide was used to assess authority support and workgroup characteristics in a standardized way² (see interview guide in Appendix 1).

Authority support. Authority support is often inferred rather than measured because most studies testing the Contact Hypothesis feature a structured program of contact, including authority or institutional support (see Pettigrew & Tropp, 2006). In the present study, authority support was assessed by measuring the Social Value Orientation (SVO) of workgroup managers as well as their self-reported amount of authority support.

SVO is defined as “stable preferences for certain patterns of outcomes for oneself and others” (Van Lange, Otten, De Bruin, & Joireman, 1997, p.733). It is predictive of helping behavior (McClintock & Allison, 1989) as well as judgments of cooperation

² Other items were also included in the interview guide but are not examined in the present context.

and competition in everyday life situations (Van Lange, Agnew, Harinck, & Steemers, 1997; Van Vugt, Meertens, & Van Lange, 1995). Three different types of SVO can be measured reliably with the help of decomposed games: a competitive orientation, an individualistic orientation, and a prosocial orientation. Both competitors and individualists tend to maximize own outcomes – competitors in relation to others, individualists regardless of the outcomes of others. In contrast, prosocials have been shown to maximize joint outcomes, i.e., to promote cooperation and equality (Van Lange, 1999). In an organizational context, prosocials were found to enhance inter-departmental problem-solving behavior (Nauta, De Dreu, & Van der Vaart, 2002).

At the beginning of the interview, SVO was assessed with nine decomposed games. Instructions and matrices for the decomposed games were taken from Van Lange and colleagues (1997) (see Appendix 1 for instructions and Appendix 2 for matrices). Managers were classified into the category for which they had provided a majority of answers. Similar to other samples (e.g., De Dreu & Van Lange, 1995; Van Lange, 1999), only 4 workgroup managers (9 %) could be classified as competitors, whereas 24 (51 %) showed an individualistic orientation and 19 (40 %) a prosocial orientation. Because both competitors and individualists have a proself orientation that is allegedly less supportive of cooperation and equality, competitors and individualists were combined to form a single category. Coding is 0 for “competitors/individualists” and 1 for “prosocials”.

In addition, managers were asked during the interview, how often they generally support their employees in cooperating with another workgroup, and how often they support their employees when problems arise between workgroups. Answers were coded on a 5-point scale (1 = “never”, 5 = “always”). The two items correlated significantly with $r = .45$, $p < .001$, so that the answers to both items could be averaged to form a scale of self-reported authority support.

Workgroup characteristics. Size of each manager’s workgroup (i.e., number of employees working for the workgroup), and the leader experience in terms of length of leadership (in years) of work-group managers were also assessed during the interview and are used as controls on the group-level. Group size was chosen as a control variable because it has been shown to affect cooperation (Brewer & Kramer, 1986) as well as group representations (Brewer, 1991). In addition, leader experience was used as a control variable because more experienced managers might have a more powerful stance and extensive network within the organization, which in turn might influence their level of authority support (see Mossholder, Niebuhr, & Norris, 1990, for a related argument).

3.2.4 *Employee survey*

Employees were handed a booklet containing all questionnaires, and were asked to indicate the name of their workgroup at the beginning (see employee survey in

Appendix 3)³. The scales were always presented in the following order: workgroup identification, common in-group representation, work-related contact, goal interdependence, informal contact, opportunity for contact, prosocial group norm, intergroup cooperation, intergroup OCBs, intergroup bias, status, relative prototypicality, tenure. The scales work-related contact and informal contact, as well as the OCB subscales conscientiousness and civic virtue are not analyzed in the context of the CIIM but with regard to effects of different contact contexts on individual- and group-directed forms of OCB, and will be presented in Chapter 4 in more detail.

With the exception of workgroup identification and mental representation, all items needed to be answered in reference to a specific workgroup that is the main cooperation partner of the subject's own workgroup - in the following referred to as "reference workgroup" (see also Richter et al., 2006). All items with the exception of tenure had a five-category response scale, ranging from 1 (= "do not agree at all") to 5 (= "fully agree").

Workgroup identification. Social identification with the workgroup was assessed with a four-item scale by Doosje, Ellemers, and Spears (1995). Example item: "I feel strong ties with members of this workgroup." Internal consistency of the four-item scale was satisfactory with Cronbach's alpha at .80.

Common in-group representation. Following previous research (e.g., Eller & Abrams, 2004; Gaertner et al., 1996), the cognitive representation as a common in-group was assessed with a single-item measure. An item by Gaertner and colleagues (1996) was adapted to the organizational context: "In this organization, it usually feels as though we are all members of one common group."

Goal interdependence. Four items for goal interdependence (e.g., "We regularly receive information about what is expected from this collaboration") were adapted from a scale by Van Der Vegt, Van De Vliert, and Oosterhof (2003). Internal consistency of the four-item scale was satisfactory with Cronbach's alpha = .79.

Opportunity for contact. Employees' opportunity for intergroup contact was assessed with one item asking how easily the other workgroup can be contacted by phone, e-mail, etc.

Prosocial group norm. The norm of each workgroup regarding prosocial behavior was measured with an item that asked group members to evaluate the helpfulness of their own workgroup ("Members of my workgroup are helpful."). A group referent (i.e., "members of my workgroup") was chosen so as to reflect the workgroup's overall view on prosocial behavior, not the personal norm (i.e., "I am helpful") of each employee (cf. Klein, Conn, Smith, & Sorra, 2001). Because a group norm reflects the group prototype (Hogg & Reid, 2006), and is therefore a shared perception within each workgroup, it should be conceptualized as a group-level variable (see also Pettigrew, 1998). Empirical evidence for a shared perception within groups was obtained by calculating $r_{wg(j)}$, an index of intragroup agreement (James, Demaree, & Wolf, 1993).

³ Further scales were included in the employee survey but are not examined in the present context.

The high median $r_{wg(j)}$ of .82 allows for aggregation to the group-level. Thus, the responses of employees within each workgroup were aggregated to form the group-level variable prosocial group norm.

Intergroup cooperation. In order to measure intergroup cooperation, a scale by Pinto and Pinto (1990), which was originally developed to assess project team cross-functional cooperation, was adapted to the inter-workgroup context. The original scale consists of 15 items measuring cooperative outcomes as specified by cooperation theory (cf. Deutsch, 1973; Tjosvold, 1988). Outcomes of cooperation include assistance (e.g., “When problems arise, employees from my workgroup and the other workgroup search for solutions that are agreeable to each party.”), communication (e.g., “Employees from the other workgroup often fail to communicate important information to us” - reversed), task orientation (e.g., “Employees from my workgroup and the other workgroup openly share their ideas”) and friendliness (e.g., “A friendly attitude exists among employees in my workgroup and the other workgroup”). The adapted 15-item version was pre-tested in an independent sample of $N = 33$ employees from a number of different organizations, who were recruited via the internet. Two items (“Employees from my workgroup and the other workgroup help each other to more effectively perform their tasks” and “Employees from my workgroup and the other workgroup share resources to complete their tasks”) had to be omitted because of insufficient consistency ($r_{it} < .20$) with the rest of the scale. As a consequence, the remaining 13-item version was used in the present study. Reliability proved to be good with Cronbach’s alpha = .93.

Organizational Citizenship Behaviors (OCBs) – Subscale intergroup helping. The scale helping is based on a subscale of the German OCB scale by Staufienbiel and Hartz (2000). The German OCB scale was constructed from a number of commonly used OCB scales, including those by Podsakoff, MacKenzie and colleagues (MacKenzie, Podsakoff, & Fetter, 1991; Podsakoff et al., 1997; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). The subscales conscientiousness and civic virtue are not analyzed in the context of the CIIM because the model only refers to helping and cooperation but not to other forms of prosocial behavior.

In order to measure helping behavior between workgroups, items needed to be adapted by using the phrase “members of the other workgroup” instead of “other colleagues”. Example item: “I help out members of the other workgroup if someone falls behind in his/her work.” The internal consistency of the four-item scale was satisfactory with a Cronbach’s alpha of .73.

Employees were directly asked to assess their OCB instead of using the supervisor as the referent. Although self-report measures are prone to common method bias, validation studies indicate that employee and manager ratings are substantially correlated for general OCB scales (Staufienbiel & Hartz, 2000), and that method bias does not distort their interpretation (Kelloway, Loughlin, Barling, & Nault, 2002). Considering that OCB was explicitly assessed with regard to another workgroup, it seems likely that participants are in a better position to accurately report their own

citizenship behaviors than their workgroup leaders, who may not have sufficient opportunities for observing intergroup behavior of their subordinates.

Intergroup bias. Intergroup bias was measured with a scale used by Gaertner and colleagues (1996). Each group - one's own and the reference workgroup - is rated separately on eight items regarding certain characteristics of importance at the workplace (e.g., reliable, hard-working, organized). Bias is measured by subtracting the evaluation of the out-group from the evaluation of the in-group for each characteristic. Answers may therefore range from -4 (= 'strong out-group favoritism') to +4 (= 'strong in-group favoritism'). A high positive score indicates higher levels of intergroup bias, i.e., the in-group is evaluated more positively than the respective out-group. The scale has a satisfactory internal consistency indicated by a Cronbach's alpha at .77.

Because the CIIM explicitly predicts that a change in intergroup bias is mainly due to a change in the evaluation of the out-group, the scale out-group evaluation will also be analyzed separately. The eight-item scale has a satisfactory internal consistency with Cronbach's alpha at .87.

Equal status. Equal status was assessed with one item that had to be answered for each workgroup, the employee's own workgroup and the reference workgroup: "This workgroup has a high reputation at [name of organization]." The absolute difference between the status of both workgroups is used as an indicator of status equality, ranging from 0 (= "no status difference/equal status") to 4 (= "large status difference/unequal status"). However, in order to make the interpretation of equal status effects easier, the score was reversed. Thus, a higher score on this index indicates a more equal status of workgroups. Similar to group norms, group status is thought to affect the group as a whole and the behavior of its members vis-à-vis other social groups according to social identity theory (Tajfel & Turner, 1979). Therefore, group status is usually conceptualized as a group-level variable in social identity research (e.g., Bettencourt, Dorr, Charlton, & Hume, 2001). On empirical grounds, a group-level conceptualization seems justified because the median $r_{wg(j)}$ for the variable equal status is sufficiently high with .80 (James et al., 1993).

Relative prototypicality. Prototypicality was assessed by a direct measure taken from Machunsky (2005), who also provided evidence for the validity of the direct measure in relation to the more commonly used indirect measure based on attitude ratings. The direct measure asks participants to rate on a five-point scale (0 = "not at all" to 4 = "completely") how typical their own/the reference workgroup is for the organization (i.e., the superordinate category). An index of relative prototypicality was then calculated by subtracting the prototypicality of the reference workgroup from the prototypicality of participants' own workgroup. Answers may therefore range from -4 (= "low relative prototypicality") to +4 (= "high relative prototypicality").

Tenure. Demographic variables, with the exception of tenure, were not assessed in order to assure participants of their anonymity. Tenure was included as a control variable because previous research suggests a relationship with workgroup

identification (Van Knippenberg & Van Schie, 2000). Thus, tenure was assessed by asking subjects for how many years they had been working for the organization. A categorical answering format was used in order to ensure anonymity (1 = “less than 5 years”, 2 = “5 to 10 years”, ..., 6 = “more than 25 years”).

Levels of analysis. In the following analyses, workgroup characteristics, SVO, self-reported authority support, prosocial group norm, and equal status are treated as group-level variables, whereas goal interdependence and opportunity for contact will be used as individual-level variables. The outcome variables intergroup cooperation, intergroup helping, intergroup bias, and out-group evaluation are analyzed on the individual level. Both mediation and moderation analyses are conducted with individual-level variables.

3.3 Statistical Results

3.3.1 Multilevel analyses of contact conditions

In order to test the influence of contact conditions on intergroup bias/out-group evaluation (Hypothesis 1a), cooperation (Hypothesis 1b), and helping (Hypothesis 1c), multilevel analyses (HLM 6; Bryk & Raudenbusch, 1992) with Full Maximum Likelihood estimation were used to account for the fact that employees are nested within workgroups, and variables are measured on different levels of analysis (Hofman, 1997). Means, standard deviations, and correlations among contact conditions and outcome variables are provided in Table 3.1 for individual-level variables and Table 3.2 for group-level variables.

First, intercept-only models (“null models”) for intergroup bias, out-group evaluation, cooperation and helping, respectively, were estimated in order to determine the amount of variation between workgroups (Hox, 2002; Singer, 1998). An intercept-only model is a model without predictor variables added, so that the amount of variation at the individual- and group-level can be assessed. Following the intercept-only model,

Table 3.1. Means, standard deviations, and correlations among individual-level variables.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7
1 Contact opport.	3.99	1.07							
2 Goal interd.	3.08	0.85	.27**						
3 CIR	3.13	1.01	.20**	.19**					
4 Relative proto.	-0.04	0.81	-.01	.07	.01				
5 Intergroup bias	0.35	0.53	-.35**	-.33**	-.08	-.02			
6 Out-group eval.	3.87	0.64	.47**	.35**	.26**	.06	-.66**		
7 Intergroup coop.	3.88	0.76	.56**	.40**	.26**	.06	-.45**	.72**	
8 Intergroup help.	3.02	0.88	.30**	.29**	.12*	.07	-.16**	.27**	.22**

Note. $N = 272$; * $p < .05$ ** $p < .01$ (two-tailed); CIR = Common in-group representation.

Table 3.2. Means, standard deviations, and correlations among group-level variables.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
1 Group size	9.53	6.25					
2 Leader experience	4.94	4.46	.14				
3 Equal status	0.42	0.34	-.27	-.03			
4 Prosocial group norm	3.35	0.66	-.07	.16	-.08		
5 Authority support	2.60	0.65	.07	.33*	-.13	.28	
6 SVO	0.40	0.50	-.12	-.28	.09	-.04	.05

Note. $N = 47$; * $p < .05$ (two-tailed)

successive models with predictor variables at the individual-level (level-1) and the group-level (level-2) were tested. All predictor variables were centered on their grand mean prior to analyses in order to reduce multicollinearity and facilitate interpretation (Hox, 2002). Only the categorical variable SVO, with 0 indicating a pro-self (individualistic or competitive) and 1 indicating a prosocial orientation of workgroup managers, was not centered.

Multilevel models for intergroup bias and out-group evaluation. First, multilevel models for intergroup bias were estimated, followed by separate analyses for out-group evaluation. The intercept-only model (Model 1) for intergroup bias indicated a significant amount of group-level variance in intergroup bias ($\tau_{00} = .06$, $\chi^2(46) = 102.98$, $p < .001$) and an even larger amount of individual-level variance ($\sigma^2 = .24$). The proportion of variance between workgroups relative to the total variance can be calculated as an intra-class correlation (ICC; Singer, 1998). For intergroup bias the ICC indicated that 20 % of the total variance in intergroup bias exists between workgroups. Next, individual-level (level-1) variables were included in a model with random intercepts and fixed slopes (Model 2). Opportunity for contact and goal interdependence were added to the model as level-1 predictors. As hypothesized, opportunity for contact ($\beta = -.26$, $p < .001$) and goal interdependence ($\beta = -.25$, $p < .001$) reduced intergroup bias significantly. Accordingly, model fit improved significantly ($\chi^2(2) = 45.29$, $p < .001$). In the following step, group-level (level-2) predictors and control variables were added to the variance-component model (Model 3). Contrary to Hypothesis 1a, neither SVO ($\beta = .08$, $p > .05$), nor authority support ($\beta = .04$, $p > .05$), prosocial norm ($\beta = -.04$, $p > .05$), or equal status ($\beta = -.04$, $p > .05$) explained significant amounts of variance in intergroup bias. Correspondingly, the model with group-level predictors did not improve the fit of the overall model ($\chi^2(6) = 6.50$, $p > .05$). Finally, the model was tested separately for random slopes of all predictor variables. However, no significant random slope variation in any of the predictor variables could be found. Results for the multilevel analyses are presented in Table 3.3. Data show partial support for Hypothesis 1a, with opportunity for contact and goal interdependence as significant negative predictors of intergroup bias.

Table 3.3. Multilevel models for intergroup bias.

Predictor	Model 1: Intercept-only			Model 2: Fixed effects, level 1			Model 3: Fixed effects, level 2		
	<i>b</i>	<i>SE</i>		<i>b</i>	<i>SE</i>		<i>b</i>	<i>SE</i>	β
Fixed part									
Intercept	0.35***	0.05		0.36***	0.04		0.37***	0.04	
Cont. opport.				-0.13***	0.03		-0.13***	0.03	-0.26
Goal interd.				-0.15***	0.04		-0.16***	0.04	-0.25
Group size							-0.01	0.00	-0.12
Leader exp.							-0.01	0.01	-0.08
Equal status							-0.07	0.10	-0.04
PGN							-0.03	0.06	-0.04
Auth. support							0.03	0.07	0.04
SVO							0.09	0.10	0.08
Random part	Coeff.	Chi ²	df	Coeff.	Chi ²	df	Coeff.	Chi ²	df
σ^2	0.24			0.20			0.20		
τ_{00}	0.06***	103	46	0.04***	95	46	0.03***	85	40
Deviance (df)	396.86 (3)			351.57 (5)			345.07 (11)		

Note. ⁺ $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$; PGN = Prosocial group norm

All variables except SVO were centered on their grand mean. Standardized coefficients (β) were calculated after the estimation of the model.

Results of separate models for out-group evaluation as the outcome variable largely correspond with the reported results for intergroup bias (see Table 3.4 for details). The intercept-only model (Model 1) indicated a significant amount of variation between workgroups for out-group evaluation ($\tau_{00} = .03$, $\chi^2(46) = 70.90$, $p < .05$), with a much larger amount of variation between employees ($\sigma^2 = .38$). In comparison to intergroup bias, the ICC indicated a smaller amount of total variance on the group level for out-group evaluation (7 %). However, similar to intergroup bias, a model with the individual-level predictors opportunity for contact and goal interdependence (Model 2) improved the fit significantly ($\chi^2(2) = 85.70$, $p < .001$). In correspondence to previous results for intergroup bias, opportunity for contact ($\beta = .41$, $p < .001$) and goal interdependence ($\beta = .24$, $p < .001$) showed the predicted positive effect on out-group evaluation. Again, a model with group-level variables added (Model 3) did not improve the overall fit of the model any further ($\chi^2(6) = 6.71$, $p > .05$), although the variable prosocial group norm had a significant positive effect ($\beta = .13$, $p < .05$) on out-group evaluation. No random effects for predictor variables were found. In essence, the effects of individual-level contact conditions on intergroup bias seem to be largely due to changes in out-group evaluation, as predicted by the CIIM.

Multilevel models for intergroup cooperation. Results of the intercept-only model (Model 1) indicated a significant amount of variation between workgroups for intergroup cooperation ($\tau_{00} = .09$, $\chi^2(46) = 104.19$, $p < .001$), with an even larger

Table 3.4. Multilevel models for out-group evaluations.

Predictor	Model 1: Intercept-only			Model 2: Fixed effects, level 1			Model 3: Fixed effects, level 2		
	<i>b</i>	<i>SE</i>		<i>b</i>	<i>SE</i>		<i>b</i>	<i>SE</i>	β
Fixed part									
Intercept	3.89***	0.05		3.87***	0.04		3.93***	0.04	
Cont. opport.				0.26***	0.04		0.24***	0.04	0.41
Goal interdep.				0.17***	0.05		0.18***	0.05	0.24
Group size							0.01	0.01	0.10
Leader exp.							-0.00	0.01	0.00
Equal status							0.14	0.13	0.07
PGN							0.13*	0.06	0.13
Auth. support							0.06	0.07	0.06
SVO							-0.08	0.09	-0.06
Random part	Coeff.	Chi ²	df	Coeff.	Chi ²	df	Coeff.	Chi ²	df
σ^2	0.38			0.27			0.26		
τ_{00}	0.03*	71	46	0.02*	69	46	0.02**	65	40
Deviance (df)	492.69 (3)			406.99 (5)			400.28 (11)		

Note. ⁺ $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$. PGN = Prosocial group norm.

All variables are centered on their grand mean. Standardized coefficients (β) were calculated after the estimation of the model.

amount of variation between employees ($\sigma^2 = .49$). The ICC indicated that 16 % of the total variance exists between workgroups. A model with individual-level predictors, random intercepts and fixed slopes (Model 2) was then tested against the intercept-only model. Opportunity for contact and goal interdependence were added as level-1 predictors. This step improved the model fit significantly ($\chi^2(2) = 126.79, p < .001$). Opportunity for contact ($\beta = .44, p < .001$) and goal interdependence ($\beta = .27, p < .001$) showed a significant positive effect on intergroup cooperation, as predicted. In the next step, group-level predictors were added to the variance-component model (Model 3) in order to explain the remaining variance between workgroups. SVO, authority support, prosocial group norm and equal status were added to the model along with group-level control variables. The model fit improved significantly ($\chi^2(6) = 13.90, p < .05$). Self-reported authority support ($\beta = .14, p < .05$) and equal status ($\beta = .12, p < .05$) had a significant positive effect on intergroup cooperation, as predicted. Additionally, the group-level variable prosocial group norm ($\beta = .10, p < .10$) had a marginally significant positive effect. Only the SVO of managers ($\beta = -.05, p > .05$) had virtually no impact on intergroup cooperation. Tests for random slopes revealed no significant amount of slope variation in any of the predictor variables. Results for multilevel analyses of intergroup cooperation are presented in Table 3.5. The data largely support Hypothesis 1b, with contact conditions such as authority support and equal status on the group-level, and

Table 3.5. Multilevel models for intergroup cooperation.

Predictor	Model 1: Intercept-only			Model 2: Fixed effects, level 1			Model 3: Fixed effects, level 2		
	<i>b</i>	<i>SE</i>		<i>b</i>	<i>SE</i>		<i>b</i>	<i>SE</i>	β
Fixed part									
Intercept	3.90***	0.06		3.87***	0.05		3.88***	0.05	
Cont. opport.				0.34***	0.05		0.31***	0.05	0.44
Goal interdep.				0.24***	0.06		0.24***	0.06	0.27
Group size							-0.00	0.00	-0.00
Leader exp.							-0.01	0.01	-0.06
Equal status							0.27*	0.13	0.12
PGN							0.12 ⁺	0.07	0.10
Auth. support							0.17*	0.07	0.14
SVO							-0.08	0.09	-0.05
Random part	Coeff.	Chi ²	df	Coeff.	Chi ²	df	Coeff.	Chi ²	df
σ^2	0.49			0.32			0.32		
τ_{00}	0.09***	104	46	0.03***	76	46	0.01*	58	40
Deviance (df)	594.89 (3)			468.09 (5)			454.19 (11)		

Note. ⁺ $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$; PGN = Prosocial group norm

All variables except SVO were centered on their grand mean. Standardized coefficients (β) were calculated after the estimation of the model.

opportunity for contact and goal interdependence on the individual-level predicting incremental amounts of variance in intergroup cooperation.

Multilevel models for intergroup helping. For intergroup helping, the intercept-only model (Model 1) indicated a significant amount of group-level variation ($\tau_{00} = .07$, $\chi^2(46) = 75.90$, $p < .01$), and a much larger amount of variance between employees ($\sigma^2 = .68$). The ICC indicated that only 9 % of variance exists between workgroups. The variance-component model with individual-level predictors (Model 2) had a significantly better model fit than the intercept-only model ($\chi^2(2) = 35.95$, $p < .001$). Again, opportunity for contact ($\beta = .20$, $p < .05$) and goal interdependence ($\beta = .21$, $p < .01$) showed a significant positive effect. When group-level predictors and control variables were added (Model 3), the model improved further ($\chi^2(6) = 13.05$, $p < .05$). However, only the group-level variable equal status ($\beta = -.21$, $p < .001$) had a significant effect on intergroup helping but not in the predicted direction. Contrary to Hypothesis 1c, the less equal status relations were perceived to be, the more helping was shown toward members of the reference workgroup. However, the effects of the individual-level predictors opportunity for contact and goal interdependence support Hypothesis 1c. Results for multilevel analyses of intergroup helping are presented in Table 3.6.

In sum, the individual-level contact conditions opportunity for contact and goal interdependence predicted intergroup outcomes consistent with the Contact Hypothesis and the CIIM. However, the group-level contact conditions authority support, equal

Table 3.6. Multilevel models for intergroup helping.

Predictor	Model 1: Intercept-only			Model 2: Fixed effects, level 1			Model 3: Fixed effects, level 2		
	<i>b</i>	<i>SE</i>		<i>b</i>	<i>SE</i>		<i>b</i>	<i>SE</i>	β
Fixed part									
Intercept	3.07***	0.07		3.06***	0.06		3.08***	0.06	
Cont. opport.				0.19***	0.05		0.16***	0.06	0.20
Goal interdep.				0.21***	0.07		0.21***	0.07	0.21
Group size							-0.01	0.01	-0.07
Leader exp.							-0.01	0.01	-0.05
Equal status							-0.58*	0.15	-0.21
PGN							-0.00	0.12	-0.00
Auth. support							0.11	0.08	0.08
SVO							-0.01	0.12	-0.01
Random part	Coeff.	Chi ²	df	Coeff.	Chi ²	df	Coeff.	Chi ²	df
σ^2	0.68			0.59			0.61		
τ_{00}	0.07**	76	46	0.06**	77	46	0.004*	57	40
Deviance (df)	672.03 (3)			636.09 (5)			623.04 (11)		

Note. * $p < .05$ ** $p < .01$ *** $p < .001$; PGN = Prosocial group norm

All variables except SVO were centered on their grand mean. Standardized coefficients (β) were calculated after the estimation of the model.

status and group norms only showed the predicted effect on intergroup cooperation but not on intergroup bias/out-group evaluation or helping behavior.

3.3.2 Analyses of the mediator common in-group representation

The next part of the analysis pertains to the mediation hypotheses. Based on the CIIM, it was predicted that a common in-group representation mediates the effect of contact conditions on the outcome variables out-group evaluation (Hypothesis 2a), intergroup cooperation (Hypothesis 2b), and intergroup helping (Hypothesis 2c) respectively.

An aggregated index for contact conditions instead of independent factors was used for the analyses, because the CIIM (Gaertner & Dovidio, 2000) does not make differential predictions in this regard (see also Pettigrew & Tropp, 2006). Therefore, contact conditions were averaged to form an index of contact conditions, with a Cronbach's alpha at .67. This index includes the scales goal interdependence, opportunity for contact, prosocial group norm, and authority support (disaggregated).

Bootstrap mediation analyses were conducted to test for the proposed mediation effect on out-group evaluation (see Figure 3.1). Following the procedures outlined by Preacher and Hayes (2004), results indicated a small but significant partial mediation effect for common in-group representation, with the 95 % confidence interval (CI)

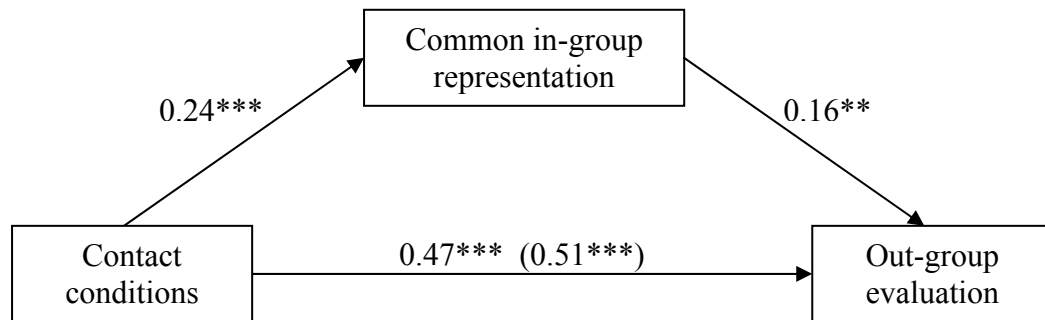


Figure 3.1. Mediated effect of contact conditions on out-group evaluation via a common in-group representation.

excluding zero ($\Delta\beta = .04$, 95 % CI = .009 to .078). The direct effect of contact conditions on out-group evaluation, with $\beta = .51$, $p < .001$, was significantly reduced to $\beta = .47$, $p < .001$, when the mediator common in-group representation was controlled for. An additional Sobel test also indicated a significant mediation effect, with Sobel $z = 2.29$, $p < .05$ (Sobel, 1982). The size of the mediation effect is comparable to that found by Gaertner and colleagues (1996) in a banking merger context. Thus, Hypothesis 2a is supported by the data. The positive effect of contact conditions on outgroup evaluation is partly mediated by a common in-group representation.

Because the CIIM also predicts a mediation effect for the outcome variable intergroup bias, this effect is examined before the alternative moderator hypothesis suggested by the IPM is tested. The analyses yielded no significant mediation effect, neither with regard to the confidence interval (95 % CI = -0.037 to 0.036) nor the Sobel test ($z = 0.02$, $p > .05$). The direct effect of contact conditions on intergroup bias ($\beta = -.37$, $p < .001$) was not significantly reduced when the mediator common in-group representation was controlled for. This result is mainly due to the missing relationship between the mediator common in-group representation and the outcome variable intergroup bias ($\beta = .00$, $p > .10$), when contact conditions are statistically controlled for.

A third bootstrap mediation analysis was conducted with intergroup cooperation as the outcome variable. As illustrated in Figure 3.2, a significant partial mediation effect was found for intergroup cooperation ($\Delta\beta = .03$, 95 % CI = .004 to .059; Sobel $z = 2.01$, $p < .05$). The direct effect of contact conditions on intergroup cooperation, with $\beta = .61$, $p < .001$, was reduced to $\beta = .58$, $p < .001$, when the variable common in-group representation was controlled for. This finding supports Hypothesis 2b that the effect of contact conditions on intergroup cooperation is partially mediated by a common in-group representation.

For intergroup helping, neither the confidence interval (95 % CI = -0.016 to 0.038) nor a Sobel test indicated a significant mediation effect ($z = 0.62$, $p > .05$). The direct effect of contact conditions on intergroup helping ($\beta = .38$, $p < .001$) was not

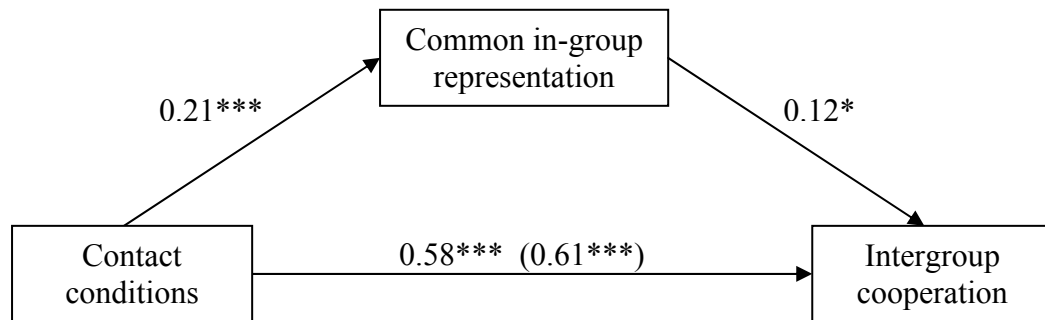


Figure 3.2. Mediated effect of contact conditions on intergroup cooperation via a common in-group representation.

significantly reduced when the mediator common in-group representation was controlled for.

Again, this result is mainly due to the missing relationship between the mediator common in-group representation and the outcome variable ($\beta = .04, p > .05$), when contact conditions are statistically controlled for. Therefore, Hypothesis 2c is not supported by the data. A common in-group representation does not mediate the effect of contact conditions on intergroup helping.

3.3.3 Analyses of moderator effects

Moderator relative prototypicality. Based on the IPM (Mummendey & Wenzel, 1999), Hypothesis 3 predicts a moderator effect of relative prototypicality on the relationship between a common in-group representation and intergroup bias. A common in-group representation should reduce intergroup bias particularly for those workgroups that perceive themselves to be relatively low in their prototypicality for the superordinate level (i.e., the organization).

Following the procedure outlined by Cohen, Cohen, West, and Aiken (2003), hierarchical regression analyses with z-standardized predictors were conducted, followed by simple slope analyses. First, both main effects were entered. Neither a common in-group representation ($\beta = -.07, p > .05$) nor relative prototypicality ($\beta = .06, p > .05$) had any significant main effect on intergroup bias ($R^2 = .01, F(2, 266) = 1.09, p > .05$). When the multiplicative term was added in the second step, a significant interaction effect ($\beta = .16, p < .01$) emerged ($\Delta R^2 = .03, \Delta F = 7.26, p < .01; F(3, 265) = 3.16, p < .05$). Figure 3.3 illustrates the interaction effect graphically. Simple slope analyses revealed that a common in-group representation is negatively related to intergroup bias for workgroups low in relative prototypicality ($b = -.14, SE = .05, t = 2.95, p < .05$), as predicted. In contrast, the slope was non-significant for workgroups high in relative prototypicality ($b = .06, SE = .05, t = 1.29, p > .05$). Hypothesis 3 is supported by the data. Only when relative prototypicality is low does a common in-group representation reduce intergroup bias.

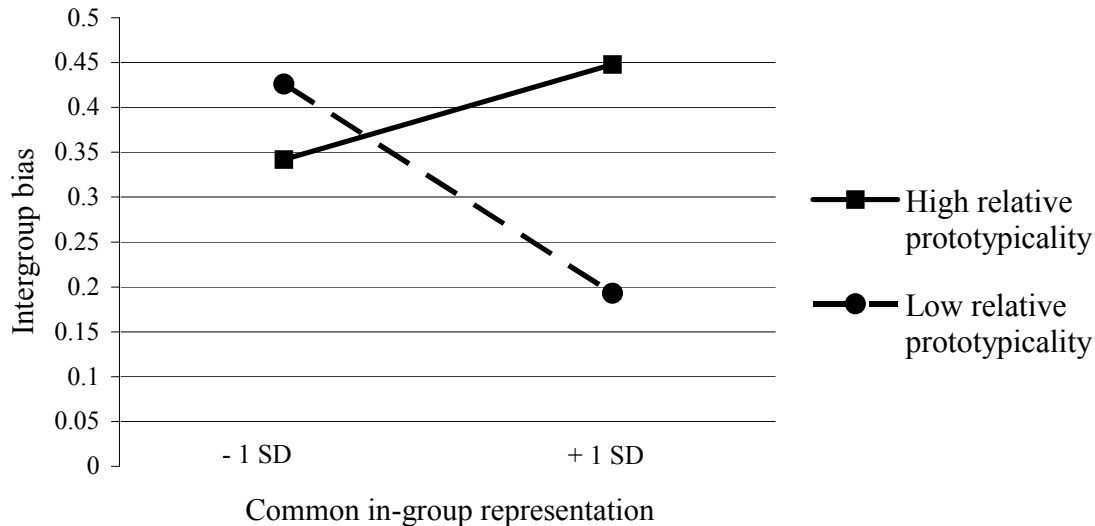


Figure 3.3. Interaction between a common in-group representation and relative prototypicality in predicting intergroup bias.

Moderator workgroup identification. Based on SCT (Turner et al., 1987), group norms have a stronger influence on group members the more these identify with their social group (Terry & Hogg, 1996). Therefore, employees who perceive their workgroup to have a prosocial group norm and also identify with their workgroup should act in accordance with this norm and help members of other workgroups more (Hypothesis 4). Hierarchical regression analyses with z-standardized predictors were performed to test the main and interactive effects of prosocial group norm and workgroup identification on intergroup helping (Cohen et al., 2003). In the first step of the analysis, the control variables group size and tenure were entered. However, the model did not reach significance ($R^2 = .01$, $F(2, 259) = 0.87$, $p > .05$). The terms for the main effects of prosocial group norm and workgroup identification were entered in the second step, improving the model significantly ($\Delta R^2 = .04$, $\Delta F = 4.87$, $p < .01$; $F(4, 257) = 2.88$, $p < .05$). The proposed interaction effect was tested by using the multiplicative term between prosocial group norm and workgroup identification. Entering the multiplicative term into the regression analysis in the third step improved the model further ($\Delta R^2 = .02$, $\Delta F = 5.59$, $p < .05$; $F(5, 256) = 3.46$, $p < .01$). The step including the main effect and the step including the interaction term accounted for significant increments of variance in intergroup helping. The equation including all terms showed no main effect of prosocial group norm ($\beta = .01$, $p > .05$), but a main effect of workgroup identification ($\beta = .22$, $p < .001$). This main effect was qualified by a significant prosocial group norm by workgroup identification interaction ($\beta = .15$, $p < .05$). Simple slope analyses yielded results supportive of Hypothesis 4. The relationship between prosocial group norm and intergroup helping was significant and positive for employees with a relatively strong workgroup identification ($b = 0.16$, $SE = 0.08$, $t = 1.94$, $p = .05$) but non-significant for employees with a relatively weak workgroup

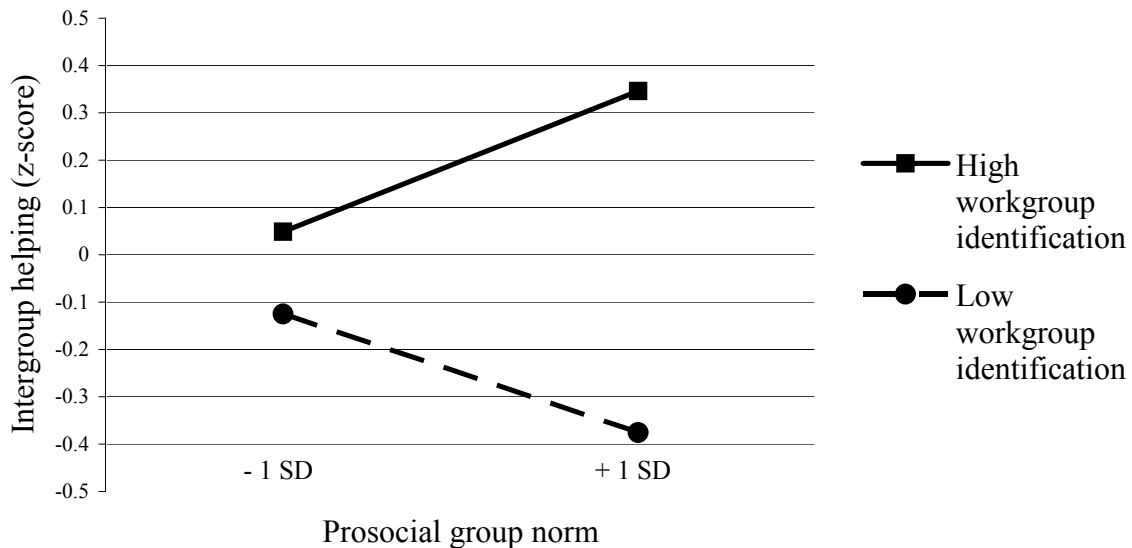


Figure 3.4. Interaction between prosocial group norm and workgroup identification in predicting intergroup helping.

identification ($b = -0.13$, $SE = 0.11$, $t = 1.27$, $p > .05$). Figure 3.4 illustrates the results of the interaction graphically.

Summarizing the findings of the first part of Study 1, predictions based on the Contact Hypothesis and the CIIM were partly supported. Individual-level contact conditions, such as opportunity for contact and goal interdependence, consistently explained incremental amounts of variance in intergroup bias/out-group evaluation, cooperation, and helping behavior, respectively. Group-level contact conditions, such as authority support, prosocial group norms and equal status, however, showed the predicted effect only with regard to intergroup cooperation.

In addition, the proposed mediation effect of a common in-group representation was supported for intergroup cooperation and out-group evaluation but not helping behavior or intergroup bias. However, the expected interaction effect of relative prototypicality and common in-group representation on intergroup bias was supported by the data. Furthermore, the moderator effect of workgroup identification on the relationship between prosocial group norm and intergroup helping could be confirmed.

The findings of the first part of Study 1 and their implications for subsequent analyses will be discussed in the next section. Implications for practice will be considered in the general discussion section in Chapter 6.

3.4 Discussion

The first part of Study 1 examined relations between workgroups from a multilevel perspective. Findings largely support predictions derived from the CIIM (Gaertner & Dovidio, 2000), the IPM (Mummendey & Wenzel, 1999), and the Self-Categorization Model of Group Norms (Terry & Hogg, 1996).

In contrast to previous studies on the CIIM in organizational contexts (Gaertner et al., 1996; Richter et al., 2006), the differential effects of contact conditions on

intergroup relations were tested, both with regard to attitudes and prosocial behavior. Results showed consistent effects for individual-level contact conditions but not for group-level variables. These findings reflect previous results on the Contact Hypothesis (Pettigrew & Tropp, 2006) showing that favorable conditions for contact may be facilitating but not essential variables for the reduction of prejudice.

The consistent positive effect of goal interdependence on intergroup bias, cooperation and helping supports models that propose functional relations between groups as a key predictor of intergroup bias and cooperation (Sherif et al., 1961; see also Deutsch, 1949; Tjosvold, 1984). When workgroups perceive their goals to be positively interdependent, they are motivated to cooperate, help each other and evaluate each other in a more positive light. In addition, opportunity for contact emerged as a similarly consistent predictor of intergroup relations. The easier another workgroup can be contacted, the better workgroups are able to interact with each other. In terms of cooperation and helping, this effect may also be due to the impact of accessibility on intergroup coordination (cf. Pinto & Pinto, 1990). The positive effect of opportunity for contact on intergroup relations is also in line with previous research (Wagner et al., 2003; Wagner et al., 2006) in interethnic contexts. However, in an organizational context, contacting another workgroup may also lead to annoyances when contact becomes too frequent and starts to interfere with task completion. Although a linear positive relationship between opportunity for contact and intergroup relations was found in this sample, it might be important to explore whether this effect is limited to moderate amounts of contact opportunity in future research.

For intergroup cooperation, group-level contact conditions explained additional amounts of variance between workgroups as predicted by the CIIM. Thus, differences between workgroups in cooperation are not only due to differences at the employee-level but are also due to differences in contextual variables at the group-level, such as authority support and equal status. However, group-level contact conditions did not have a similar effect on other intergroup outcomes such as helping behavior and bias, as the CIIM would predict.

One reason for the discrepant finding regarding group-level predictors might be attributable to the wording of the items measuring the different outcome variables. A group referent (“we”) was used in statements referring to intergroup cooperation, whereas OCB-items referred to an individual referent (“I”). As a result, the scale intergroup cooperation may reflect behavior shown by the workgroup as a whole (i.e., *intergroup* behavior) more strongly than the scale helping behavior (see also Klein et al., 2001). The OCB-helping scale, on the other hand, may reflect behavior of individual employees (i.e., *interpersonal* behavior) more strongly. Items measuring group evaluations (from which the index intergroup bias was calculated) have no explicit referent, and may have been interpreted as personal statements about the in- and out-group rather than a shared opinion by the group. However, item-wording cannot fully explain why group-level contact conditions had such few effects on helping and bias

because a significant amount of group-level variance was found for both outcome variables. In addition, even personal statements of group members should reflect the group consensus to some extent, at least for identified workgroup members.

The first group-level contact condition, equal status, showed the predicted positive effect on intergroup cooperation but a significant negative effect on intergroup helping. Thus, equal status relations seem to facilitate intergroup cooperation whereas unequal status relations are associated with more helping behavior. Although the negative relationship between equal status and intergroup helping is not in line with predictions by the CIIM, this pattern of results reflects the differences in the definition of the two constructs cooperation and helping (cf. Dovidio et al., 2006; see also Chapter 1.1). While cooperation is conceptualized as an interaction between equal status partners, the relationship between a helper and the receiver of help is by definition unequal, with the helper having a higher status than the receiver, at least within the helping situation. Workgroups that receive requests for help from other workgroups might also infer from this interaction that they have a higher status than the help-seeking workgroup. The inference of status relations from the performance of groups on important dimensions also corresponds with the idea of intergroup differentiation by Tajfel and Turner (1979). As Nadler and Fisher (1986) point out, helping behavior may even be used as a strategy to establish or manifest status inequalities between groups. In addition, equal status was unrelated to intergroup bias. Although this finding is inconsistent with the original Contact Hypothesis (Allport, 1954), a meta-analysis by Mullen and colleagues (1992) provides evidence consistent with this finding. They found that status relations are virtually unrelated to bias, particularly in natural groups.

The second group-level contact condition, authority support, was measured indirectly via individual differences in SVO of workgroup managers and more directly as self-reported amount of support for intergroup cooperation. The indirect measure SVO had no impact on intergroup outcomes, and was not correlated with self-reported support of cooperation either. Thus, the general attitude of managers toward cooperative interactions is neither predictive of (self-reported) behavior in a specific context nor of cooperative interactions between workgroups reported by workgroup members. As research on the relationship between attitudes and behavior has shown, attitudes measured at a general level are often unrelated to specific behavior (Ajzen & Fishbein, 1977). In contrast to SVO, the amount of support for cooperation directly reported by workgroup managers was positively related to intergroup cooperation measured at the level of individual employees. The more a workgroup manager supports his or her employees in the cooperation with other workgroups, the more positive is the actual cooperation described by employees. Again, item-wording may explain why authority support predicted cooperation but not helping or bias. Managers were explicitly asked about their support of intergroup cooperation but not about their support of intergroup helping or whether they promote positive attitudes toward the out-group. Thus, authority support may need to be assessed more specifically in future research.

The third group-level contact condition, prosocial group norm, had a marginally significant influence on intergroup cooperation but not on helping behavior or intergroup bias. However, when analyzed on the individual-level, a prosocial group norm by workgroup identification interaction emerged. Workgroup members who are aware of a prosocial group norm and also identify highly with their own workgroup reported higher levels of intergroup helping. This result complements findings by Terry and colleagues (1999) that group norms are most effective when members identify with the group and are therefore motivated to represent the group prototype or norm.

The second objective of the study was to identify a mechanism that would explain why contact conditions improve relations between workgroups. Following the CIIM, the representation of the organization as a common in-group identity was tested as a mediator. Results indicate that a common in-group representation partially mediates the relationship between contact conditions and cooperation, as well as the relationship between contact conditions and out-group evaluations. These findings support the proposition by the CIIM that contact conditions lead members of different groups to conceive of themselves as being part of a common in-group. The representation as a common in-group, in turn, leads to more favorable attitudes and behavior between subgroups because in-group favoring attitudes and behavior are extended to (former) out-group members. That way, *intergroup* cooperation turns into *intragroup* cooperation at a higher level of categorization, and thus becomes easier to achieve. In addition, favorable attitudes toward in-group members are extended to former out-group members, resulting in a better evaluation of the out-group. The latter finding supports a central hypothesis of the CIIM. In contrast to the decategorization/personalization model (Brewer & Miller, 1984), which predicts a reduction in in-group evaluation, the CIIM predicts an increase in out-group evaluation as the basis for bias reduction. To my knowledge, only one other study by Gaertner and colleagues (1989) provides evidence for this evaluation extension effect.

Similar to other studies on the CIIM, the mediation effect proved to be relatively small in size (cf. Gaertner et al., 1996). Thus, further mediator variables may need to be explored in combination with a common in-group representation. As Pettigrew and Tropp (2000) pointed out, affective mediator variables, such as intergroup anxiety or empathy, seem to have a stronger effect than cognitive variables. In addition, other changes in the cognitive representation of the group aggregate (e.g., individual or dual identity representation) may be additional mediator variables.

In contrast to predictions by the CIIM, the data also show that a common in-group representation is not directly related to intergroup bias, despite the positive relationship with out-group evaluation. The relationship between a common in-group representation and intergroup bias is only significant for workgroups low in relative prototypicality. In line with the IPM, workgroups that perceive themselves to be more prototypical of the organization than the reference workgroup continue to evaluate their own workgroup better than the reference workgroup. Therefore, in-group projection

seems to be a particularly pervasive phenomenon in natural groups, even when a subgroup representation is substituted by a common in-group representation.

Although a common in-group representation partially mediates the effect of contact conditions on cooperation and out-group evaluations, respectively, helping behavior is not affected by a common in-group representation. In contrast to findings by Dovidio and colleagues (1997), helping behavior toward members of the out-group was not encouraged following a common in-group representation. This discrepancy in findings, however, might be due to the measurement of helping at different levels of categorization. As pointed out before, the OCB-subscale helping measures behavior at the level of the individual group member rather than at the level of the group itself. Therefore, helping behavior as measured in the presented study reflects interpersonal behavior rather than intergroup behavior. Even though the CIIM does not explicitly distinguish between interpersonal and intergroup behavior, the results presented so far invite a further exploration of this issue. Since neither group-level contact conditions nor a common in-group representation relate to helping behavior at the interpersonal level, it seems interesting to explore whether interpersonal behavior is affected more by contact that makes personal identities salient rather than by contact that creates category salience. Conversely, contact that creates category salience may affect intergroup behavior more than contact that makes personal identities salient. Based on SIA (Tajfel & Turner, 1979), and particularly the Congruity Hypothesis (Haslam, 2004), effects of different contact contexts on interpersonal and intergroup forms of prosocial behavior will be explored in Chapter 4 in more detail.

Limitations. A multilevel approach to data analysis in intergroup settings has the advantage of considering both the variance between individuals and groups simultaneously, and can therefore model group level data more adequately than traditional regression models. It is, however, limited to the analyses of relationships between variables – causality cannot be inferred. For instance, contact under “optimal” conditions may create more prosocial behavior, but prosocial behavior may also encourage contact (e.g., Jecker & Landy, 1969). The relative strength of alternative paths can be estimated with the help of a longitudinal study. In Chapter 5, I will report a longitudinal study with student project groups in order to replicate the findings from Study 1 with longitudinal data.

The interpretation of results is also limited because most of the data stem from self-report measures of a single source, namely workgroup employees, with the notable exception of authority support and workgroup characteristics that were collected in interviews with workgroup managers. Since self-report measures entail the danger of social desirability (Crowne & Marlowe, 1960), this raises the possibility of a common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In order to reduce social desirability, the voluntariness of participation and measures to ensure anonymity were explicitly pointed out to respondents. The high response rate (74%) can be seen as an indication that most employees felt sufficiently anonymous to participate. Additionally,

an effect was obtained that is based on different sources, namely the effect of authority support on intergroup cooperation, and can therefore not be attributed to a common method bias. Furthermore, while simple relationships may be overestimated due to common-method bias, this bias cannot account for the interaction effects found in the moderation analyses (Evans, 1985; McClelland & Judd, 1993).

Finally, a number of single-item scales were employed, so that results need to be interpreted with some caution since a larger measurement error may have resulted. However, some of these scales were taken from previous relevant research (i.e., common in-group representation, relative prototypicality). In addition, single-item scales that measure a specific rather than complex construct (e.g., prosocial group norm, opportunity for contact, group status) are less prone to unreliability (Loo, 2002)

In sum, the first part of Study 1 provides cross-sectional evidence that individual- and (to some extent) group-level contact conditions promote prosocial behavior and positive attitudes between workgroups, in part because a common in-group representation is induced. Relative prototypicality and workgroup identification have also been identified as moderators of relationships proposed by the CIIM. However, the frequency of contact in different contact settings and subsequent effects on interpersonal and intergroup behavior, respectively, were not explicitly analyzed. Therefore, additional data gathered in Study 1 were explored with regard to this particular issue and are presented in the following chapter.

4. Context-Specific Contact Effects

4.1 Cross-Sectional Survey Study in a Mail-Order Company (Study 1, Part 2)

In the first part of Study 1, predictions derived from the CIIM (Gaertner & Dovidio, 2000) and relevant theoretical extensions (Mummendey & Wenzel, 1999; Terry & Hogg, 1996) were tested with regard to attitudes and prosocial behavior between workgroups. Results largely supported predictions. However, in contrast to intergroup cooperation, helping behavior toward members of other workgroups was only predicted by individual-level variables and not by group-level variables or a common in-group representation, respectively, as the CIIM would suggest. I have discussed the possibility that findings for intergroup cooperation and helping behavior are discrepant because these outcome variables were measured at different levels of categorization (see Chapter 3.4). In this chapter, I will go further into the question whether interpersonal prosocial behavior, such as OCB-helping, may be better explained by contact that makes personal identities salient rather than by group-level contact. This notion is mainly based on the idea of an interpersonal-intergroup behavioral continuum by Tajfel (1978), and the Congruity Hypothesis by Haslam (2004; see Chapter 1.2.2) which suggests that variables specified at the same level of categorization should be more strongly related to each other than variables specified at different levels of categorization (see also Ullrich et al., 2007). Additional hypotheses based on the idea that different contact contexts impact differentially on interpersonal and intergroup prosocial behavior will be outlined in the following section. Further data gathered in Study 1 will then be analyzed in order to test these additional hypotheses.

4.2 Additional Hypotheses Concerning Effects of Different Contact Contexts

Although the CIIM suggests different levels of categorization as mediator variables (i.e., decategorization, categorization, partial and full recategorization), the model does not make differential predictions regarding outcome variables. Since outcome variables are also conceptualized at different levels of categorization (i.e., *interpersonal* and *intergroup behavior*), the congruent level of categorization should have more impact on the particular outcome than an incongruent level of categorization. According to the Congruity Hypothesis (Haslam, 2004), outcome variables at the interpersonal level should be affected by contact when personal identities rather than subgroup or common identities are salient. Similarly, outcome variables at the subgroup level should be particularly affected by contact when subgroup categories are salient. Hewstone and Brown (1986; see also Brown & Hewstone, 2005) also emphasized the differentiation between interpersonal and intergroup outcomes following contact at different levels of categorization in their model (see Chapter 1.3.2).

Another proposition by the CIIM that differs from other contact-categorization models is that contact conditions are instrumental in changing the level of categorization and thus improve intergroup relations. In contrast, research on ICT and other contact-categorization models suggests that the *quantity of intergroup contact*, rather than

contact conditions, is related to prejudice reduction, and that contact conditions facilitate this effect but may not be necessary (Pettigrew & Tropp, 2006).

Furthermore, both the decategorization/personalization model (Brewer & Miller, 1984) and the MIDM (Hewstone & Brown, 1986) suggest that the amount of contact in *specific contact contexts* is related to prejudice reduction. In particular, the decategorization/personalization model by Brewer and Miller (1984) posits that the amount of personalized contact (i.e., contact which highlights the idiosyncratic characteristics of the individuals in contact) should render an in-group-out-group categorization less meaningful. The resulting decategorization should lead to a shift toward the interpersonal pole of the behavioral continuum (cf. Hewstone & Brown, 1986). Contact between members of different workgroups that takes place in informal contact contexts, e.g., during lunchtime, breaks, company parties or leisure time, is likely to lead to decategorization and interpersonal prosocial behavior because such contact provides an opportunity for personalization (see also Brass, Galaskiewicz, Greve, & Tsai, 2004). Individual-directed prosocial behavior toward out-group members, such as helping behavior, should therefore be particularly encouraged by informal contact with out-group members. However, group-directed prosocial behavior should be less affected by informal contact due to decategorization processes.

In organizational contexts, however, it is often more likely that a categorization into different workgroups becomes salient. Most interactions between members of different workgroups occur in a work-related setting, mostly during meetings or through other formalized channels (Brass et al., 2004). During work-related contact, workgroup members usually represent their own workgroup and its specific expertise (Price, 2004). Workgroup representatives also need to protect the interests and resources of their own workgroup. As a result, workgroups should be salient categories during most work-related contact situations. In contrast to informal contact, work-related contact is likely to lead to a shift toward the intergroup pole of the behavioral continuum because it emphasizes categorization. Thus, work-related contact should promote group-directed prosocial behavior. In contrast, individual-directed prosocial behavior should be less affected by work-related contact due to categorization processes.

In sum, based on the Congruity Hypothesis (Haslam, 2004), informal contact is predicted to affect interpersonal prosocial behavior via decategorization whereas work-related contact is predicted to influence intergroup prosocial behavior due to categorization processes.

Hypothesis 6 (Interpersonal behavior): Informal intergroup contact is more strongly related to individual-directed prosocial behavior toward a member of another workgroup than is work-related intergroup contact.

Hypothesis 7 (Intergroup behavior): Work-related intergroup contact is more strongly related to group-directed prosocial behavior toward another workgroup than is informal intergroup contact.

Further data gathered in Study 1 are used to test these predictions. More specifically, Part 2 of Study 1 examines the impact of different contact contexts on interpersonal and intergroup prosocial behavior, respectively (Hypotheses 6 & 7). In order to test these differential predictions, the level of categorization of the outcome variables needs to be determined. Although most behavior is likely to lie somewhere in-between the poles interpersonal and intergroup behavior (Tajfel & Turner, 1979), different forms of OCB have been identified that relate quite clearly to the two opposing poles. Individual-directed OCB (or OCB-I) refers to interpersonal behavior between individual employees such as helping behavior. In the present research, helping behavior toward employees from other workgroups is examined. In contrast, group-directed OCB (or OCB-O), such as conscientiousness and civic virtue, signifies prosocial behavior shown toward a specific group for which a task or project is completed. Since the present research examines intergroup relations, conscientiousness and civic virtue that are shown toward another workgroup are investigated. Thus, the second part of Study 1 tests the hypotheses that helping behavior toward a member of another workgroup (OCB-I) is more closely related to informal contact than to work-related contact, whereas conscientiousness and civic virtue toward another workgroup (OCB-O) are more closely related to work-related contact than to informal contact. Figure 4.1 illustrates the hypothesized relationships. Findings may help to determine which forms of prosocial behavior may (or may not) be changed by intergroup contact in informal and work-related contexts, respectively.

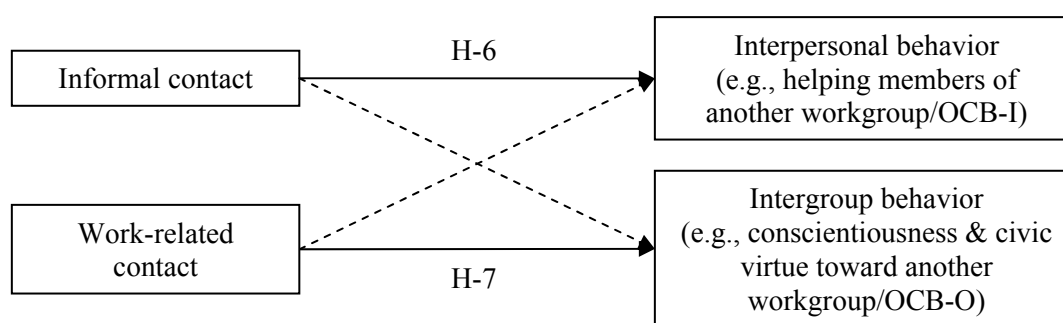


Figure 4.1. Conceptual model of the relations among different contact contexts with interpersonal and intergroup prosocial behavior.

Note. Solid lines indicate paths that are hypothesized to be stronger than paths indicated by dashed lines.

4.3 Method

4.3.1 Employee survey: Additional scales

In order to test the hypothesis that contact has a context-specific effect on prosocial behavior between workgroups, additional scales from the employee survey of Study 1 were analyzed (see Appendix 3). Additional scales are work-related intergroup contact, informal intergroup contact, and the OCB subscales conscientiousness and civic virtue. Similar to the scales reported in Chapter 3, intergroup contact and OCB items needed to be answered in reference to the main cooperation partner of the subject's own workgroup (i.e., the "reference workgroup"). All items had a five-category response scale, ranging from 1 (= "do not agree at all") to 5 (= "fully agree"). The analyzed dataset included data from $N = 281$ employees of 49 different workgroups.

Work-related contact. Two items assessed work-related contact with the reference workgroup: "I need to work together with members of this workgroup frequently" and "I need to work closely with members of this workgroup in order to do my work properly". A Cronbach's alpha at .77 indicated a satisfactory internal consistency of the two-item scale.

Informal contact. Three items asked participants about the amount of informal contact to employees from the reference workgroup: "I often meet with members of this workgroup for breaks/lunch", "I often spend my leisure time with members of this workgroup" and "I have met members of this workgroup at organizational events/workshops". Internal consistency of the three-item scale was satisfactory with Cronbach's alpha = .73.

Organizational Citizenship Behaviors (OCBs). The scales helping, conscientiousness and civic virtue were adapted from the German OCB scale by Staufienbiel and Hartz (2000) (see Chapter 3.2.4 for details). In contrast to commonly used OCB scales referring to an unspecific target ("colleague"), the scale in this study was adapted to a specific target of OCB, namely the reference workgroup. In order to assess individual-directed OCB, the subscale intergroup helping was employed. Group-directed forms of OCB were assessed with the subscales conscientiousness and civic virtue.

The same four-item scale for helping behavior as in the first part of Study 1 (see Chapter 3.2.4) was used in the second part, too. The items refer to helping behavior toward a member of another workgroup. Example item: "I willingly share my expertise with members of the other workgroup". The scale had a satisfactory internal consistency with a Cronbach's alpha at .73. The subscale conscientiousness refers to diligence shown when working on a project for the other workgroup. Example item: "I give advance notice if I am unable to meet a deadline in a project with the other workgroup". With a Cronbach's alpha at .69, the consistency of the four-item scale was marginally satisfactory. Items for the scale civic virtue refer to behavior that is thought to initiate or improve cooperation with the reference workgroup. Example item: "I initiate projects

with the other workgroup". The four-item scale also showed a marginally satisfactory internal consistency with Cronbach's alpha = .69.

Control variables. As in the first part of Study 1, tenure and group size were again used as control variables because they may be related to the amount of informal and work-related contact an employee has with members of another workgroup. Employees who have been working for more years within the organization are more likely to have met employees from other workgroups, both in informal and work-related contexts. Larger workgroups, on the other hand, may reduce the probability for intergroup contact, especially informal contact. There may be less need for informal encounters with members of other workgroups when an employees' own workgroup is large and therefore provides ample opportunity to meet other employees informally.

4.4 Statistical Results

For descriptive results and preliminary analyses, average scores for each of the intended scales were calculated. Means, standard deviations and intercorrelations of control variables, informal contact, work-related contact and the OCB subscales helping, conscientiousness and civic virtue are displayed in Table 4.1. Overall, the variables are related in the expected direction. When additionally controlling for group size and tenure, the partial correlation between work-related contact and conscientiousness ($r = .25, p < .001$), between work-related contact and civic virtue ($r = .31, p < .001$) as well as the partial correlation between informal contact and helping remained significant ($r = .41, p < .001$). Neither group size nor tenure had an effect on intergroup contact, OCBs, or their expected relationships, and were therefore not included in further analyses.

4.4.1 Measurement analyses

In the first step, measurement assumptions were tested with confirmatory factor analyses (CFA), using LISREL 8.7 (Jöreskog & Sörbom, 2004). As omnibus fit indices, the nonnormed fit index (NNFI), the comparative fit index (CFI), and the root-mean-square error of approximation (RMSEA) are reported. These fit indices generally

Table 4.1. Means and standard deviations of and correlations among variables.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6
1 Tenure	1.78	1.03						
2 Group size	12.88	7.61	.00					
3 Informal contact	2.10	0.96	-.02	.08				
4 Work-related contact	3.98	0.85	-.02	.06	.05			
5 Helping	3.03	0.89	.03	-.07	.41***	.13*		
6 Conscientiousness	4.20	0.60	-.07	.03	-.03	.25***	.29***	
7 Civic virtue	3.36	0.78	-.02	.01	.24***	.31***	.59***	.35***

Note. $N = 257$, due to listwise deletion of missing data. * $p < .05$ ** $p < .01$ *** $p < .001$.

indicate an acceptable model fit when the values of NNFI and CFI are between .90 and 1.00, and the value of RMSEA is below .10 (Diamantopoulos & Sigauw, 2000; Hu & Bentler, 1995). Additionally, chi-square values are reported mainly to compare the fit of alternative models using the chi-square differences test. Due to the number of degrees of freedom and the sample size, it is likely that the chi-square significantly differs mostly as a result of oversensitivity of the chi-square test (see Diamantopoulos & Sigauw, 2000).

First, the proposed 5-factor-measurement model with the latent constructs informal contact, work-related contact, and the three OCB factors helping, conscientiousness and civic virtue, was tested. The measurement model defines the relationship between manifest (observed) and latent (unobserved, hypothetical) constructs. The 5-factor model showed an acceptable fit to the data, $\chi^2(109, N = 275) = 206$, $p < .001$, NNFI = .94, CFI = .95, RMSEA = .06. All factor loadings were significant, and ranged between 0.49 and 0.89.

The validity of the 5-factor measurement model was further examined by testing it against relevant alternative models. Table 4.2 displays chi-square statistics and fit indices for all tested measurement models. In order to test for common method variance, a model where all items were loading on one single factor was initially tested. If the 1-factor measurement model presents a significantly better fit, a common method bias needs to be suspected (Podsakoff et al., 2003). However, the 1-factor-measurement model showed a poor fit to the data, $\chi^2(119, N = 275) = 800$, $p < .001$, NNFI = .69, CFI = .73, RMSEA = .14, $\Delta\chi^2(10) = 594$, $p < .001$.

Furthermore, when a common method factor, on which all items were allowed to load, was additionally introduced to the measurement model (6-factor measurement

Table 4.2. Hypothesized and alternative measurement models, fit indices and χ^2 -tests.

Model	df	χ^2	NNFI	CFI	RMSEA
6-factor measurement model ^a	96	164***	0.95	0.96	0.05
5-factor measurement model ^b	109	206***	0.94	0.95	0.06
4-factor measurement model ^c	113	531***	0.79	0.82	0.12
3-factor measurement model ^d	116	449***	0.85	0.87	0.10
1-factor measurement model ^e	119	800***	0.69	0.73	0.14

Note. $N = 275$; * $p < .05$ ** $p < .01$ *** $p < .001$

^a Measurement model with latent factors informal contact, work-related contact, OCB-helping, OCB-conscientiousness, OCB-civic virtue and common method factor

^b Measurement model with latent factors informal contact, work-related contact, OCB-helping, OCB-conscientiousness, OCB-civic virtue (= hypothesized measurement model)

^c Measurement model with latent factors intergroup contact, OCB-helping, OCB-conscientiousness and OCB-civic virtue

^d Measurement model with latent factors informal contact, work-related contact, and OCB

^e Measurement model with common method factor

model; see Podsakoff et al., 2003; Williams, Cote, & Buckley, 1989), all factor loadings of the proposed constructs remained significant. This result indicates that common method variance is not distorting the construct validity of the scales (cf. Kelloway et al., 2002). However, the 6-factor measurement model including an additional method factor showed a slightly better fit to the data, with $\chi^2(96, N = 275) = 164, p < .001$, NNFI = .95, CFI = .96, RMSEA = .05, $\Delta\chi^2(13) = 42, p < .001$, than the 5-factor measurement model without a common method factor. This finding shows that a common method bias might still inflate the proposed relationships (Williams et al., 1989). Even with a common method bias controlled for, the relationship between informal contact and helping ($r = .41, p < .001$), work-related contact and conscientiousness ($r = .24, p < .01$), and work-related contact and civic virtue ($r = .19, p < .05$) remained significant. Indeed, only the relationship between work-related contact and civic virtue was found to be considerably smaller than the manifest correlation ($r = .31, p < .001$) after controlling for a common method factor. Thus, results of this model indicate that the hypothesized relationships are not wholly attributable to common source variance.

The hypothesized 5-factor measurement model was also tested against measurement models with aggregated scales for OCB and intergroup contact, respectively. Because OCB subscales are highly intercorrelated (see Table 4.1), and factors have not always been replicated (see LePine et al., 2002), OCB subscales were merged into one aggregate factor of OCB. A 3-factor measurement model including an aggregated factor of OCB was tested against the proposed 5-factor measurement model with OCB-helping, OCB-conscientiousness and OCB-civic virtue as separate factors. The 3-factor measurement model presented a significantly poorer fit to the data than the proposed 5-factor measurement model, with $\chi^2(116, N = 275) = 449, p < .001$, NNFI = .85, CFI = .87, RMSEA = .10, both in terms of omnibus fit indices and chi-square differences test, $\Delta\chi^2(7) = 243, p < .001$.

Before examining the hypothesis that informal contact and work-related contact predict different forms of OCB, it also needs to be established that informal and work-related contact are separate constructs. Therefore, items for informal and work-related contact were allowed to load on a single factor of intergroup contact. The subsequent 4-factor measurement model was then tested against the proposed 5-factor measurement model. Again, the 5-factor measurement model presented a significantly better fit to the data than the alternative model, with $\chi^2(113, N = 275) = 531, p < .001$, NNFI = .79, CFI = .82, RMSEA = .12, $\Delta\chi^2(4) = 325, p < .001$. In sum, the CFA supports the validity of the hypothesized constructs by showing that a 5-factor measurement model presents a significantly better fit to the data than models with less than the proposed five factors informal contact, work-related contact, OCB-helping, OCB-conscientiousness and OCB-civic virtue. In addition, a common method factor does not seem to distort the measurement structure or the proposed relationships.

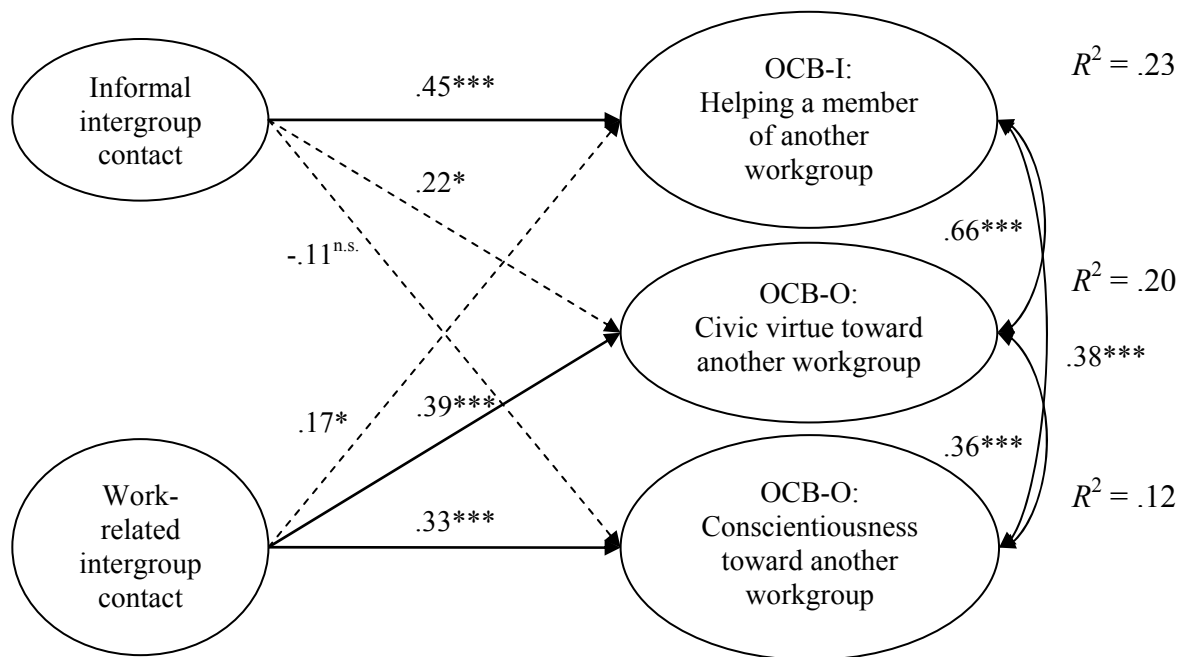


Figure 4.2. Structural model for context-specific effects of contact on OCB-I and OCB-O toward (members of) another workgroup.

Note. Solid lines indicate paths that were hypothesized to be stronger than paths indicated by dashed lines.

4.4.2 Structural analyses

Using LISREL 8.7, the fit of the hypothesized structural model to the data was tested with structural equation modeling (SEM). Figure 4.2 illustrates the hypothesized relationships and includes the results from the analyses presented below. As the data do not depart substantially from normality and the sample is relatively small ($N < 300$), normal theory maximum likelihood estimates are interpreted (West, Finch, & Curran, 1995).

First, a model with direct paths from informal contact to intergroup helping, and from work-related contact to intergroup conscientiousness and civic virtue was estimated, and showed a satisfactory fit to the data, with $\chi^2(113, N = 275) = 226, p < .001$, NNFI = .93, CFI = .94, RMSEA = .06. However, a model with all direct paths from informal and work-related contact to the three OCB factors presented an even better fit to the data, with $\chi^2(110, N = 275) = 207, p < .001$, NNFI = .94, CFI = .95, RMSEA = .06, $\Delta\chi^2(3) = 19, p < .001$. Thus, the structural model with paths from informal and work-related contact to the three OCB subscales was accepted as the final model (see Figure 4.2).

Next, the relationships among the latent variables in the final model were examined in order to test the hypotheses that informal contact is more strongly related to individual-directed behavior, such as OCB-helping, than is work-related contact (Hypothesis 6), while work-related contact is expected to be more strongly related to group-directed behavior, such as OCB-conscientiousness and OCB-civic virtue, than is

informal contact (Hypothesis 7). These hypotheses were tested with a sequential three-step procedure. Table 4.3 displays chi-square statistics and fit indices for the tested structural models.

In the first step, a model where only the hypothesized predictor is related to the outcome variable was tested against a model where only the alternative predictor is related to the outcome variable. The model where only informal contact was related to intergroup helping fitted the data slightly better, with $\chi^2(111, N = 275) = 212, p < .001$, NNFI = .94, CFI = .95, RMSEA = .06, than the model where only work-related contact was related to intergroup helping, $\chi^2(111, N = 275) = 246, p < .001$, NNFI = .92, CFI = .93, RMSEA = .07. In the second step, a model where the paths from both predictors (i.e., informal and work-related contact) to the outcome variable were constrained to be equal was tested against a model with unconstrained paths. The constrained model for intergroup helping provided a poorer fit to the data, with $\chi^2(111, N = 275) = 214, p < .001$, NNFI = .94, CFI = .95, RMSEA = .06, than the unconstrained model, with $\chi^2(110, N = 275) = 207, p < .001$, NNFI = .94, CFI = .95, RMSEA = .06, according to a chi-square differences test, $\Delta\chi^2(1) = 7, p < .01$. This result provides evidence that the two regression slopes are significantly different from each other. The relationship between informal contact and intergroup helping differs significantly from the relationship between work-related contact and intergroup helping.

In the third step, the relationships of informal and work-related contact, respectively, with the outcome variable were examined by using the final model (see Figure 4.2). The relationship between informal contact and intergroup helping is considerably stronger ($\beta = .45, p < .001$) than the relationship between work-related contact and intergroup helping ($\beta = .17, p < .05$). In sum, these results support Hypothesis 6 that informal contact is more strongly related to individual-directed behavior than is work-related contact.

Similar analyses were performed to test whether work-related contact is more strongly related to intergroup conscientiousness and civic virtue, respectively, than is informal contact (see Table 4.3 for details). For intergroup conscientiousness, the model with only the hypothesized path from work-related contact to intergroup conscientiousness provided a better fit to the data than the model with only the path from informal contact to intergroup conscientiousness, and the unconstrained model had a better fit than the model with paths from work-related and informal contact constrained to be equal, according to a chi-square differences test, $\Delta\chi^2(1) = 15, p < .001$. Therefore, the relationship between work-related contact and intergroup conscientiousness differs significantly from the relationship between informal contact and intergroup conscientiousness. Considering the final model, only the path from work-related contact to intergroup conscientiousness reached significance ($\beta = .33, p < .001$). These results support Hypothesis 7 that work-related contact is more strongly related to group-directed OCB than is informal contact.

Table 4.3. SEM with hypothesized and alternative paths from informal and work-related contact to intergroup helping, civic virtue and conscientiousness.

<i>Helping behavior (OCB-I)</i>					
Model	df	χ^2	NNFI	CFI	RMSEA
Hypothesized path only	111	212***	0.94	0.95	0.06
Alternative path only	111	246***	0.92	0.93	0.07
Constrained paths	111	214***	0.94	0.95	0.06
Unconstrained paths	110	207***	0.94	0.95	0.06
<i>Conscientiousness (OCB-O)</i>					
Model	df	χ^2	NNFI	CFI	RMSEA
Hypothesized path only	111	210***	0.94	0.95	0.06
Alternative path only	111	224***	0.93	0.94	0.06
Constrained paths	111	222***	0.93	0.95	0.06
Unconstrained paths	110	207***	0.94	0.95	0.06
<i>Civic virtue (OCB-O)</i>					
Model	df	χ^2	NNFI	CFI	RMSEA
Hypothesized path only	111	214***	0.94	0.95	0.06
Alternative path only	111	234***	0.93	0.94	0.06
Constrained paths	111	209***	0.94	0.95	0.06
Unconstrained paths	110	207***	0.94	0.95	0.06

Note. $N = 281$; * $p < .05$ ** $p < .01$ *** $p < .001$

For intergroup civic virtue, the model with a single path from work-related contact to intergroup civic virtue revealed a better fit than the model with a single path from informal contact to intergroup civic virtue (see Table 4.3 for details). However, the constrained model did not significantly differ from the unconstrained model, according to a chi-square differences test, $\Delta\chi^2(1) = 2$, $p > .05$. Thus, the relationship between work-related contact and civic virtue does not differ significantly from the relationship between informal contact and civic virtue. However, in support of a weaker form of Hypothesis 7, the final model shows that the path from work-related contact to intergroup civic virtue ($\beta = .39$, $p < .001$) is stronger than the path from informal contact to intergroup civic virtue ($\beta = .22$, $p < .05$).

In sum, the SEM analyses support the proposed model by showing that informal contact is a better predictor of individual-directed OCB than is work-related contact, and that work-related contact is a better predictor of group-directed OCB than is informal contact.

4.5 Discussion

With regard to contact effects on prosocial behavior toward (members of) another workgroup, I have argued that these will depend on the level of categorization invoked by the contact context. Following the Congruity Hypothesis (Haslam, 2004),

the relationship between variables specified at the same level of categorization were predicted to be stronger than between variables specified at different levels of categorization. Indeed, results provide evidence that individual-directed OCB toward a member of another workgroup is primarily associated with informal contact, and that more group-directed OCB is shown toward another workgroup when work-related rather than informal contacts have been frequent.

Arguing from a social identity perspective, informal contact should lead to personalization and decategorization (Brewer & Miller, 1984), so that individual-directed forms of OCB should be facilitated. When employees interact with colleagues from other workgroups on an interpersonal basis, e.g. during informal encounters, it offers them the opportunity to fulfill their personal prosocial motives (Rioux & Penner, 2001), and they tend to show helping behavior accordingly. In addition, during personalized interactions, empathy toward a member of another workgroup can develop which in turn may motivate helping behavior toward this colleague.

In contrast, personal motives and affect should play a less significant role for intergroup behavior because group members align their personal goals with the goals of their group when the subgroup identity becomes salient (Turner, 1985). As argued before, work-related encounters are likely to lead to a salient categorization at the workgroup level, facilitating group-directed behavior such as OCB-O toward another workgroup rather than individual-directed OCB.

Although the hypothesized relationships between contact contexts and different forms of OCB were stronger overall than effects across categorization levels, the latter relationships were also evident. In the case of intergroup civic virtue, the relationship with informal contact was not significantly different from the hypothesized relationship with work-related contact. Although I can only speculate on the reasons for this finding, personalization during informal contact might generate an interest in the work and skills of the other person, which in turn might stimulate civic virtue, i.e., getting informed about developments in the other workgroup and initiating or improving intergroup cooperation (see also Oh, Chung, & Labianca, 2004). From this perspective, civic virtue might not be a purely group-directed behavior. For instance, when initiating a cooperative project or asking about new developments, such behavior might often be directed at a specific individual in another workgroup rather than at the workgroup as a whole. In terms of the behavioral continuum proposed by Tajfel and Turner (1979), civic virtue may well be positioned between the poles interpersonal and intergroup behavior.

With respect to the relationship between the two forms of contact, it is also interesting to note that work-related contact and informal contact were not significantly associated in this sample. Although it seems sensible to expect that employees who need to work together frequently also spend time during breaks or off-hours with each other (e.g. Brass et al., 2004), this was not the case here. Work-related contact may not lead to

informal contact because it highlights workgroup membership, and thus intergroup differentiation rather than personal similarities (Hewstone & Brown, 1986).

Limitations. The cross-sectional design of the study does not allow an inference of causality. Helping a member of another workgroup might just as well lead to more liking and contact as vice versa (e.g., Jecker & Landy, 1969). However, the hypotheses focused on the context-specific relationships between contact and different forms of OCB rather than on causal effects of intergroup contact. Future research including experimental and longitudinal studies is needed to address the issue of causality.

A second limitation is the mono-source design, with self-reported questionnaire data for predictor and criterion variables. Common method variance (Podsakoff et al., 2003), especially due to the social desirability of constructs such as OCB, might inflate the relationships obtained. Although the measurement model featuring a method factor yielded a slightly better fit to the data than the hypothesized model, this model also showed that the hypothesized relationships between different forms of contact and OCB were not inflated, with the notable exception of the relationship between work-related contact and civic virtue. However, even this relationship could not be fully accounted for by common method variance.

Since employees from 49 different workgroups participated in the study, some of the variation may be attributable to the group level. Thus, intraclass correlations for helping, civic virtue and conscientiousness were calculated using HLM 6 (Bryk & Raudenbusch, 1992). Analyses indicated that 8 % of the variance in helping and civic virtue can be attributed to differences between workgroups, while the remaining 92 % represent differences at the individual level of analysis. Similarly, only 1 % of variance in intergroup conscientiousness can be accounted for by group-level differences, with 99 % of variance remaining on the individual level. Thus, a between-group variation plays - compared to the individual variation - only a minor role and was therefore neglected here.

Another issue that needs to be addressed by future research is the mediator hypothesis, i.e., that contact in a specific context determines the level of categorization which in turn affects behavior at the same level. Although informal contact should lead to decategorization according to the model by Brewer and Miller (1984), this assumption was not tested in the presented study. Similarly, work-related contact is likely to create category salience but the mediator was not part of the tested model. Rather than measuring the categorization level that should result from specific contact contexts, the underlying mechanism was inferred based on theoretical considerations.

In sum, the presented results provide initial evidence that effects of contact on prosocial behavior are context-specific. The amount of informal contact predicts interpersonal forms of prosocial behavior rather than intergroup forms of prosocial behavior. In contrast, the amount of work-related contact is more strongly related to intergroup prosocial behaviors than to interpersonal behavior. For categorization models, it seems necessary to disentangle the different categorization levels that are

affected by the contact context, and that, in turn, affect behavior at the same level more than at different levels of categorization. Thus, a more precise definition of the contact context and intergroup outcomes in terms of their categorization level might allow for more accurate predictions. On the other hand, this finding seems to restrict the impact of categorization models to changes either in interpersonal *or* intergroup outcomes. However, as Tajfel and Turner (1979) already pointed out, most behavior lies somewhere in-between the poles intergroup and interpersonal behavior. Furthermore, the longitudinal model by Pettigrew (1998) integrates categorization models along a timeline. From this viewpoint, changes in interpersonal behavior should precede changes in intergroup behavior. In the following chapter, data will be presented that test the causal direction between contact and intergroup outcomes longitudinally, as well as the categorization sequence proposed by Pettigrew (1998).

5. Longitudinal Effects of Contact & Categorization Levels

5.1 Four-Wave Longitudinal Study (Study 2)

The previous study provided evidence that contact conditions (i.e., opportunity for contact, goal interdependence, equal status, group norms, and authority support) as well as the frequency of intergroup contact in different contexts (i.e., informal and work related contact) can change relations between workgroups and their members, and that categorization processes seem to play a vital role in determining whether interpersonal or intergroup prosocial behavior is affected. However, Study 1 also suffered from a number of limitations inherent in a cross-sectional survey design. First, the direction of causality cannot be determined by such data. Second, the comparability of reference groups is difficult to ensure in a natural organizational setting. In the following section, these limitations and the measures taken to redress them in Study 2 are discussed in more detail.

As the cross-sectional design of Study 1 does not allow drawing conclusions about the direction of causality, a multi-wave longitudinal design was employed in Study 2 in order to test the paths proposed by the CIIM. Although experimental studies provide the most thorough test of causality, the conclusions are limited when reciprocal causal paths exist. For instance, empirical evidence is available for both the path from intergroup contact to bias as well as the reverse direction. While intergroup contact reduces intergroup bias, bias may also prevent people from getting into contact with out-group members (Levin et al., 2003). However, longitudinal studies have provided evidence that the path from intergroup contact to bias is generally stronger than the reversed path (e.g., Brown et al., 2007). In a similar vein, experimental evidence indicates that cooperation creates a common in-group identity (Gaertner et al., 1990) but also that a common in-group identity facilitates cooperation (Kramer & Brewer, 1984; Polzer, 2004; Wit & Kerr, 2002). For this relationship, however, longitudinal evidence is lacking. Other causal hypotheses, for instance that intergroup contact creates more cooperation and helping behavior rather than the reverse, have not been tested longitudinally either.

In essence, Study 2 was conducted to test longitudinally whether intergroup contact under “optimal” conditions reduces bias and creates prosocial behavior (Hypotheses 1a-c), whether intergroup contact under “optimal” conditions leads to a common in-group identity, and whether a common in-group identity, in turn, reduces bias and increases prosocial behavior (Hypotheses 2a-c). Because the CIIM emphasizes the presence of contact conditions for the creation of a common in-group representation and positive intergroup relations, friendship contact will be used as the predictor variable in Study 2. Friendship contact is widely regarded as an “optimal” form of contact because intergroup friendship is likely to be intimate contact with common goals on an equal status basis (e.g., Paolini, Hewstone, & Cairns, 2007; Pettigrew, 1997). Thus, friendship contact reflects most of the contact conditions specified by Allport (1954).

A second limitation of Study 1 pertains to the comparability of reference workgroups. In Study 1, each workgroup was asked to assess relations with the main cooperation partner within the organization. Because different workgroups need to interact with each other in a natural organizational setting, it was not possible to assess relations to the same reference workgroup. However, the assessment of different workgroups creates the problem that reference groups may differ in important characteristics. For instance, the size of the reference groups may vary, which may have implications for the relationship between contact and intergroup outcomes. Contact to members of small out-groups may translate more directly into cooperation than contact to larger out-groups. Similarly, the reduction of bias might generalize more easily from single members to the group as a whole when the out-group is small rather than large. Therefore, it was ensured that all groups assess the same reference out-group in Study 2.

Besides testing predictions by the CIIM in a way that redresses earlier limitations, the second objective of Study 2 was to determine changes in categorization levels over time, and the way these changes affect relations between organizational groups. In contrast to Study 1, in which only a common in-group representation was analyzed, further representations were considered in Study 2. Based on the LCM suggested by Pettigrew (1998), mental group representations as individuals (decategorization), subgroups (categorization), and as a common in-group (recategorization) were assessed before and after initial intergroup contact, during established contact and after repeated opportunities for interaction. The LCM also implies that groups have not been in contact before but are interacting repeatedly during the study. Such a precondition seems rather difficult to implement with pre-existing organizational groups as they are likely to have had prior contact with each other, especially if they work together on a regular basis. However, time-limited organizational groups, such as project groups, can be studied starting with group formation and initial contact to other project groups. Thus, the cumulative effect of decategorization, categorization and recategorization on prosocial behavior and intergroup bias (Hypothesis 5) can be tested in Study 2 by using student project groups.

5.2 Method

5.2.1 Research context

The study examined the effect of friendship contact and subsequent changes in categorization on attitudes and prosocial behavior between student project groups. Similar to project groups in other organizational contexts, these groups were newly created for a time-limited project of 14 weeks. The project assignment included the planning, realization, analysis, interpretation, and presentation of a small-scale scientific study. Each project group was supervised by an instructor and worked on an independent assignment, so that task interdependence can be considered as relatively low. Nevertheless, project groups had the opportunity to cooperate throughout the project, for instance by sharing information and resources (e.g., literature, measures,

laboratory rooms, research participants). Group members could also help other project groups, for instance by recruiting participants, distributing questionnaires, participating in the studies of other groups, or helping with data entry and statistical analyses. However, a competitive element was also present for two reasons. First, a number of scarce resources needed to be shared, such as study participants and laboratory rooms. Second, all groups were asked to present their study in a poster contest at the end of the project. Each poster was displayed publicly on the university campus and evaluated by three jury members, with the best three posters being awarded a prize.

Taking this situation into account, relations between student project groups provided a real-life context in which to examine the effects of contact and categorization changes between organizational groups that are relatively equal in status. Because participants were assigned to groups at the beginning of the project, there was no prior competition or intergroup interaction between any of the groups. Thus, the specific case of student project groups is a well-suited setting in which to test the CIIM and LCM because there is moderately high contact and friendship potential within an overall cooperative environment.

5.2.2 Research participants and procedure

Overall, 69 second year students of psychology were assigned to 15 project groups consisting of 4 to 5 students. Five university lecturers instructed three project groups each. Project group participants received a questionnaire at four measurement occasions starting at the day participants were assigned to their project groups and ending a week before the poster contest (see Table 5.1 for details). The assignment of each participant to his or her project group was administered online (via internet with the software WebCT) during the semester break. Immediately after the assignment, students received an invitation for an online questionnaire. The invitation also included an automatically generated individualized code, so that each person could only fill in the questionnaire once. At Time 1 (T_1), 22 female and 7 male students participated, with a mean age of 24 years (ranging from 19 to 41 years).

A paper-and-pencil questionnaire was administered in the second week of the 14 week project (Time 2/ T_2). Questionnaires were distributed either by instructors, or handed directly to participants after their weekly session. 38 female and 9 male students of 15 different project groups returned a completed T_2 questionnaire within one week after

Table 5.1. Number of participants (return rate) per measurement occasion and longitudinally matched.

T_1	T_2	T_3	T_4
Group assignment	Project week 2	Project week 8	Project week 13
$N_{T_1} = 29$ (42 %)	$N_{T_2} = 47$ (68 %)	$N_{T_3} = 43$ (62 %)	$N_{T_4} = 35$ (51 %)
	$N_{T_2-T_3} = 32$ (46 %)		$N_{T_3-T_4} = 27$ (39 %)
	$N_{T_2-T_4} = 21$ (30 %)		

after distribution. The Time 3 (*T3*) questionnaire was administered six weeks later, again either by the instructor or directly after the weekly meeting. This time, 33 female and 10 male students of 14 different project groups returned a completed *T3* questionnaire within one week after distribution. Another five weeks later (i.e., in week 13), the Time 4 (*T4*) questionnaires were administered in the same way as before. At *T4*, 30 female and 5 male project group members of 13 different groups participated.

Each week, students who returned a completed questionnaire entered a lottery for three tickets to the local cinema. Additionally, students who had completed all four questionnaires entered a lottery for three book vouchers. Overall, 57 out of 69 (83 %) project group participants completed at least one of the four questionnaires. The longitudinally matched number of participants and return rates are provided in Table 5.1.

5.2.3 Measures

Measures at *T1* included levels of categorization (dual identity, subgroup, individual, and common in-group representation), gender, age, and assigned project group⁵. Scales that measure friendship contact, bias, and prosocial behavior, respectively, were not included at *T1* because there had been no prior opportunity to engage in relevant behavior as participants were asked to fill in questionnaires directly after group assignment and before the project started. Scales at *T2*, *T3* and *T4* were presented in a booklet in the following order: levels of categorization (dual identity, subgroup, individual, and common in-group representation), friendship contact, cooperation, helping, bias, gender and age. The same scales were used throughout the study (see Appendix 4 for a sample questionnaire).

Friendship contact, cooperation, helping and bias were measured with regard to three other project groups (in the following referred to as “reference groups”). Items were presented in a matrix format, with three reference groups constituting the rows (i.e., three rows), and items constituting the columns. The names of the reference groups along with the names of the respective group members were always presented in the first column. Within each cell, a six-point scale was presented, ranging from 0 (= “completely disagree”) to 5 (= “fully agree”), unless indicated otherwise. Participants were told that reference groups had been assigned randomly to each project group, so that each group would be rated by a number of other project groups. In reality, two specific reference groups that had been randomly drawn from the 15 available groups were rated by all other project groups. The third project group varied across groups in order to lend credibility to the cover story that each group rated different out-groups. The cover story was used so that the actual two reference groups would not feel particularly observed by all other project groups and change their behavior toward more socially desirable intergroup interactions (e.g., helping and cooperation). As all

⁵ Further scales were included in the questionnaires at *T1*, *T2*, *T3*, and *T4* but are not examined in the present context.

participants rated the same two project groups, ratings are better comparable as with different (unidentified) out-groups. However, two group members in the second reference group switched project groups during the third project week, so that ratings at *T2* are not comparable to ratings at *T3* and *T4* for the second reference group. Consequently, analyses will be based on data gathered for the first reference group only.

Levels of categorization. In this particular context, student project groups are treated as subgroups, with the semester as the common in-group identity. Semester was chosen as the common identity (instead of faculty or university) because this superordinate group included all subgroups but no uninvolved members or groups (e.g., other students, faculty members). To assess the different levels of categorization, I followed previous relevant research (e.g., Eller & Abrams, 2003, 2004; Gaertner et al., 1996) that used single-item measures. The following four measures were used: “In this semester, it currently feels as though...” (1) “...we are all members of different project groups sharing a common identity” [dual identity representation/partial recategorization], (2) “...we are all members of different project groups” [subgroup representation/ categorization], (3) “...we are all different individuals” [individual representation/decategorization], (3) “...we are all members of one common group” [common in-group representation/full recategorization]. Higher scores indicate stronger categorization on the particular level.

Friendship contact. Friendship contact was measured with two items. One item asked about the number of friends in each out-group (see also Paolini et al., 2007). As all reference groups consisted of five members, the number of out-group friends could be indicated directly (i.e., 0 to 5). The second item measured the frequency of contact with members of each reference group during leisure time. The two items correlated significantly with each other ($.59 < r < .68$; all $ps < .001$), and were therefore aggregated. Internal consistencies were satisfactory with Cronbach’s alpha of .77 (*T2*), .71 (*T3*), and .77 (*T4*).

Intergroup cooperation. Four items adapted from the intergroup cooperation scale used in Study 1 (Chapter 3.2.4; Pinto & Pinto, 1990) assessed cooperation with each reference group. Because cooperation needed to be rated for three reference groups, a shortened scale was used that included the following four items: “We exchange important information with this project group”, “We share newly acquired knowledge with this project group”, “We solve problems that arise between our project groups amicably”, “We assist each other in our projects”. The four items formed a reliable scale with satisfactory internal consistencies of .82 (*T2*), .92 (*T3*), and .90 (*T4*).

Intergroup helping. Helping behavior toward members of each reference group was assessed with four items based on the OCB subscale helping already used in Study 1 (Chapter 3.2.4; Staufenbiel & Hartz, 2000). However, one item decreased the reliability of the scale considerably at all three measurement occasions, so that a three-item version was used in the analyses instead, including the following items: “When a member of the other project group is down, I try to encourage him/her”, “I try to act like

a peacemaker when there is a dispute between my project group and the other project group.”, “I willingly share my expertise with the other project group.” Internal consistencies were satisfactory with Cronbach’s alpha of .79 (*T2*), .80 (*T3*), and .83 (*T4*).

Intergroup bias. Bias was assessed as a difference measure between ratings of the in-group and ratings of the reference group. Two items needed to be rated for each group: “This project group is distant”, “This project group is boring”. After reversing the items, the out-group rating was subtracted from the in-group rating for each item. The two difference measures correlated significantly with each other ($.42 < r < .78$, all $ps < .01$) and were therefore averaged to form a single scale of intergroup bias. The internal consistency of the two-item bias measure is largely satisfactory with a Cronbach’s alpha of .70 (*T2*), .88 (*T3*), and .50 (*T4*).

Demographic variables. At the end of each questionnaire, participants indicated their gender (coded 0 = “male” and 1 = “female”) and age, along with a code by which questionnaires could be matched.

5.3 Statistical Results

5.3.1 Analytic strategy for longitudinal analysis of the Common In-group Identity Model

Prior to analyses, participants that remained in or dropped out of the study at different time points were compared to see whether these groups are from the same background population. In the next step, longitudinal hierarchical regression analyses were employed to determine whether paths suggested by the CIIM are stronger than reversed paths. The logic of a longitudinal analysis is as follows (Finkel, 1995): When the relationship between a variable A (e.g., friendship contact) at time 1 and variable B (e.g., cooperation) at time 2 is higher than the correlation between variable B at time 1 and variable A at time 2, then variable A is presumed to cause changes in the outcome variable B. However, the correlation between variables A and B may be spurious due to a number of third level variables, such as occasion factors (e.g. mood), constant background variables (e.g., status, age, gender), and nonconstant variables (e.g., insecurity). By partialling out the outcome variable B at time 1, effects by occasion factors and background variables can be controlled for (cf. Zapf, Dormann, & Frese, 1996). Here, the idea is that, by controlling for the outcome variable B at time 1, only changes in the outcome variable B that have occurred between time 1 and time 2 can be explained by the independent variable A. Thus, if the R^2 change of the last step in a hierarchical regression analysis is significant, a causal effect is generally supported. While under special circumstances (e.g., no synchronous effect, correlated measurement errors) such an inference may be problematic (e.g., Cohen et al., 2003; Dwyer, 1983), this design still provides an interpretative advantage over a cross-sectional approach (Finkel, 1995; Pettigrew, 1996).

An issue inherent in longitudinal designs is the spacing of the time lag between measurement occasions. As Eller and Abrams (2003, 2004) have pointed out, changes in categorization are difficult to track over time. While friendship contact may have an impact on attitudes within a relatively short time span (i.e., via decategorization), its ability to change the representation of groups toward a common in-group identity may take considerable time (cf. Pettigrew, 1998). Moreover, the time necessary for contact to improve cooperation and helping behavior is yet unknown. For this reason, it seemed advantageous to allow for different time lags in Study 2. Due to the multi-wave design of the study, it was possible to test paths for a short time lag of six weeks ($T2-T3$) as well as a longer time lag of eleven weeks ($T2-T4$). The longer time lag is similar in length to the time lag chosen by Brown and colleagues (2007).

5.3.2 Panel attrition and comparison of participants

For each pair of measurement occasions, differences between participants who dropped out at one time point and those that stayed in the sample at both occasions were tested for significance. Because data at $T1$ only include categorization measures, these data cannot be used for the analysis of causality. Consequently, data at $T2$, $T3$ and $T4$ were examined for changes due to panel attrition. A multivariate analysis of variance (MANOVA) was employed across the set of measures at the respective time point that provided data for both groups. For instance, a MANOVA across the set of measures at $T2$ confirmed that there were no significant differences between participants who dropped out at $T3$ and those who stayed in the sample at both time points, multivariate $F(10, 32) = 1.08$, $p = .40$. As Table 5.2 shows, no significant differences between background populations could be found at any of the time points.

5.3.3 Longitudinal analyses of the Common In-group Identity Model

In the second set of analyses, the path from contact under “optimal” conditions via a common in-group representation to intergroup outcome variables (i.e., bias, helping, and cooperation) was tested longitudinally. Means, standard deviations and interrelationships among all variables at $T2$, $T3$, and $T4$ are provided in Table 5.3. As expected, friendship contact (as a proxy for contact under “optimal” conditions) is

Table 5.2. Dropout analyses for each pair of measurement occasions.

Set of measures	Dropout	F	df_1	df_2	p
$T2$	$T3$	1.08	10	32	.40
$T2$	$T4$	0.47	10	32	.90
$T3$	$T2$	0.46	10	25	.90
$T3$	$T4$	1.09	10	25	.41
$T4$	$T3$	0.99	10	20	.48
$T4$	$T2$	0.69	10	20	.73

Table 5.3. Descriptives and interrelationships of variables at T2 (above diagonal), T3 (below diagonal) and T4.

Measure	Time 2	Time 3	Time 4	Pearson's correlations (<i>r</i>) for T2, T3					Pearson's correlations (<i>r</i>) for T4				
	Mean (SD)	Mean (SD)	Mean (SD)	1	2	3	4	5	1	2	3	4	
1 Contact	1.61 (1.27)	1.80 (1.16)	1.53 (1.25)		.09	.11	.54**	.66**					
2 CIR	3.10 (0.86)	2.81 (1.00)	3.13 (1.12)	-.30		.15	-.24	.03	-.05				
3 Bias	0.30 (1.01)	0.14 (0.88)	0.19 (1.05)	-.31	.28		-.09	-.01	-.57**	.23			
4 Cooperation	0.41 (0.71)	0.85 (1.13)	0.83 (1.03)	.58**	-.36*	-.39		.60**	.66**	.02	-.33		
5 Helping	1.28 (1.21)	1.78 (1.44)	1.37 (1.27)	.64**	-.12	-.62**	.51**		.79**	.00	-.49**	.65**	

Note. * $p < .05$; ** $p < .01$. CIR = Common in-group representation.

Table 5.4. Interrelationships of variables across time (T2-T3, T2-T4).

Measures at T2	Measures at T3					Measures at T4				
	1	2	3	4	5	1	2	3	4	5
1 Contact	.89**	.13	.02	.49**	.57**	.91**	.12	-.04	.62**	.78**
2 CIR	-.23	.28	.00	-.12	-.15	-.06	.46*	.05	-.29	-.04
3 Bias	-.50**	.10	.24	-.48**	-.64**	-.42*	-.02	.33	-.64**	-.41*
4 Cooperation	.63**	-.05	.21	.63**	.56**	.56**	-.22	.22	.60**	.47*
5 Helping	.72**	.10	-.15	.62**	.86**	.71**	.22	.12	.52**	.77**

Note. * $p < .05$; ** $p < .01$. CIR = Common in-group representation.

positively related to cooperation and helping behavior at all three measurement occasions. Friendship contact is also significantly related to intergroup bias but only at $T4$, while a common in-group representation is virtually unrelated to the other variables at all three time points. Table 5.4 shows correlations between measures across time. Again, contact is associated with higher levels of cooperation and helping behavior but not with bias, while a common in-group representation is unrelated to all other variables.

Due to the relatively small sample size, I tested the three paths implied in the CIIM separately. The three paths include (a) the path from contact under “optimal” conditions to the respective outcome variable (i.e., bias, cooperation, and helping), (b) the path from contact under “optimal” conditions to a common in-group representation, and (c) the path from a common in-group representation to the respective outcome variable.

Longitudinal effects of contact. For each outcome measure, I conducted separate hierarchical regression analyses. In each model, gender and age were included as control variables in the first step, followed by the autoregressor (i.e., the outcome variable) at $T2$ in the second step, and friendship contact at $T2$ in the third step. Criterion variables were bias, cooperation, helping behavior, and a common in-group representation, respectively – measured at $T3$ for the short lag analyses and measured at $T4$ for the long lag analyses. Table 5.5 presents the results of the longitudinal regression analyses. In order to keep the table comprehensible, only analyses that yielded a significant effect of friendship contact at $T2$ were included in Table 5.5.

Confirming Hypothesis 1a and 1b, higher levels of friendship contact at $T2$ predicted less intergroup bias and more intergroup cooperation six weeks later ($T3$) as well as eleven weeks later ($T4$). Although friendship contact did not predict intergroup helping after six weeks ($T3$) ($\Delta R^2 < 0.05$, $p > 0.10$), a marginally significant effect of friendship contact on intergroup helping could be found eleven weeks later ($T4$). Only the path from friendship contact to a common in-group identity could not be supported by the data (all $\Delta R^2 < 0.08$, all $ps > 0.10$). Friendship contact did not predict a common in-group representation at $T3$ or $T4$, respectively. The amount of variance explained by friendship contact, over and above the variance explained by control variables and the autoregressor, was substantial for bias (short lag: 26 %, long lag: 23 %), and cooperation (short lag: 11 %, long lag: 13 %).

The reverse causal direction of variables was explored in a similar fashion. For the reversed analysis, friendship contact measured at $T3$ (short lag) and $T4$ (long lag), respectively, were used as the criterion variable. The hierarchical model included gender and age in the first step, the autoregressor friendship contact at $T2$ in the second step, and the predictor variable at $T2$ (i.e., bias, cooperation, helping or a common in-group representation) in the third step. There were no significant effects of bias, cooperation, helping behavior or a common in-group representation, respectively, on friendship contact at $T3$ or $T4$ (all $\Delta R^2 < 0.05$, all $ps > 0.10$). Thus, results provide

support for a causal effect of friendship contact on bias and cooperation, and a marginal effect on intergroup helping behavior.

Longitudinal effects of a common in-group representation. The effect of a common in-group representation on the outcome measures bias, cooperation and helping behavior, respectively, was also explored with hierarchical regression analyses. In the first step, the control variables gender and age were included, followed by the autoregressor at T_2 , and the predictor variable common in-group representation at T_2 . A short lag with criterion variables measured at T_3 and a long lag with criterion variables measured at T_4 were tested. Again, only analyses that yielded a significant effect of a common in-group representation at T_2 were included in Table 5.5.

Short lag analyses yielded no significant effect of a common in-group representation on bias, cooperation or helping behavior, respectively. However, when a longer lag of eleven weeks was analyzed, a common in-group representation positively predicted helping behavior, partly confirming Hypothesis 2c. As Table 5.5 shows, the incremental amount of variance explained in intergroup helping by a common in-group representation was substantial (long lag: 7 %). Furthermore, the reversed longitudinal model yielded no significant effect of intergroup helping on a common in-group representation, neither for the short lag nor the longer lag (all $\Delta R^2 < 0.05$, all $ps > 0.40$). Thus, data indicate a causal effect of a common in-group representation on intergroup helping. As the CIIM also predicts the reverse causal order between cooperation and a common in-group representation, this model was also tested. However, the reversed longitudinal model, with cooperation predicting a common in-group representation, was not supported by the data (all $\Delta R^2 < 0.05$, all $ps > 0.30$).

In sum, a significant path from friendship contact to bias and cooperation was obtained but not the reverse path, confirming Hypothesis 1a and 1b. In addition, a significant path from common in-group representation to intergroup helping was found for a long lag but not the reverse path, partly supporting Hypothesis 2c.

5.3.4 Analytic strategy for the analysis of the Longitudinal Contact Model

Besides exploring the causal direction suggested by the CIIM, the data can also provide a first indication whether the LCM (Pettigrew, 1998) can be supported. In the first step, changes in categorization were explored with a multilevel model using data from all four measurement occasions in order to see whether intra-individual changes in categorization follow the proposed “ideal” sequence from decategorization via categorization to recategorization. In this context, a multilevel model offers two main advantages. First, the nested structure of the data, with measurement occasions at the lowest level, individuals at the second level, and project groups at the third level of analysis, is recognized in a multilevel model. When such a structure is not considered, an inflated type I error may result (Barcikowski, 1981). Second, data of all individuals that have completed at least one questionnaire can be included in the analysis, allowing

Table 5.5. Longitudinal regression analysis results for short lag and long lag.

Step	IV	DV	R^2 (ΔR^2)	β	t	p
		Bias $T3$	0.53***			
1	Gender		(0.17 ⁺)	-0.47	-3.18	0.004
	Age			-0.23	-1.39	0.177
2	Bias $T2$		(0.10 ⁺)	0.48	3.12	0.004
3	Contact $T2$		(0.26***)	-0.54	-3.80	0.001
		Cooperation $T3$	0.55***			
1	Gender		(0.01)	-0.17	-1.21	0.236
	Age			0.08	0.53	0.604
2	Cooperation $T2$		(0.43***)	0.41	2.45	0.021
3	Contact $T2$		(0.11*)	0.44	2.57	0.016
		Bias $T4$	0.36*			
1	Gender		(0.02)	-0.10	-0.52	0.609
	Age			-0.38	-1.72	0.100
2	Bias $T2$		(0.11)	0.51	2.35	0.028
3	Contact $T2$		(0.23**)	-0.51	-2.83	0.010
		Cooperation $T4$	0.43*			
1	Gender		(0.08)	-0.18	-1.05	0.303
	Age			0.26	1.38	0.182
2	Cooperation $T2$		(0.22*)	0.19	0.92	0.368
3	Contact $T2$		(0.13*)	0.48	2.27	0.034
		Helping $T4$	0.65***			
1	Gender		(0.01)	0.15	1.14	0.265
	Age			0.17	1.24	0.229
2	Helping $T2$		(0.59***)	0.50	2.55	0.018
3	Contact $T2$		(0.05 ⁺)	0.37	1.81	0.085
		Helping $T4$	0.67***			
1	Gender		(0.01)	0.22	1.72	0.099
	Age			0.15	1.20	0.242
2	Helping $T2$		(0.59***)	0.80	6.57	0.000
3	CIR $T2$		(0.07*)	0.29	2.78	0.032

Note. $N_{t2-t3} = 32$; $N_{t2-t4} = 27$. ⁺ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$. CIR = Common in-group representation. Beta coefficients (β) were computed with all variables in the equation.

for more statistical power. Differences in categorization between the four measurement occasions were assessed with planned contrasts.

The last set of analyses tested the effect of the categorization sequence proposed by Pettigrew (1998) on the outcome measures intergroup bias, cooperation and helping behavior. Again, longitudinal hierarchical regression analyses were employed in order to test the additive effect of decategorization at *T2*, categorization at *T3*, and recategorization at *T4*. If the proposed sequence explains an incremental proportion of variance in the outcome variable, the model is supported. However, in order to determine whether this particular sequence is superior to other possible sequences, the effects of alternative categorization sequences needed to be tested, too.

5.3.5 Changes in categorization over time

First, changes in categorization were explored over time in order to find out (a) whether representations of the group aggregate change during intergroup interactions, and (b) how similar these changes are to the sequence of categorizations considered “ideal” in Pettigrew’s longitudinal model. According to Pettigrew (1998), individualized representations should ideally increase during initial intergroup interactions reflecting decategorization. When contact is established, a representation as subgroups (i.e., categorization) should be strengthened to facilitate generalization of newly acquired attitudes toward the out-group as a whole. Lastly, after repeated instances of intergroup contact, a common in-group representation, or full recategorization, might be achieved. Although a dual identity representation is not part of the original model, it is conceivable that a dual identity representation is an intermediate stage between categorization and full recategorization (cf. Eller & Abrams, 2004). It also needs to be noted that the levels of categorization are expected to overlap at different stages (Pettigrew, 1998).

Table 5.6. Means, standard deviations, and stability coefficients of dependent variables.

	Individuals	Subgroups	Dual identity	Common identity
<i>T1</i>	3.08 (1.32)	2.65 (1.29)	2.77 (1.18)	3.31 (0.79)
<i>T2</i>	3.26 (1.21)	3.28 (0.99)	3.30 (1.14)	3.02 (0.85)
<i>T3</i>	3.21 (1.22)	3.38 (1.10)	3.41 (1.12)	2.71 (1.04)
<i>T4</i>	2.94 (1.28)	3.29 (1.03)	3.56 (0.89)	3.06 (1.12)
<i>T1/T2</i> (r_{12})	0.03	0.25	0.36 ⁺	0.26
<i>T1/T3</i> (r_{13})	0.43 ⁺	0.28	0.11	0.01
<i>T1/T4</i> (r_{14})	-0.01	0.01	-0.14	0.15
<i>T2/T3</i> (r_{23})	0.49**	0.45**	0.52**	0.34*
<i>T2/T4</i> (r_{24})	0.71***	0.55**	0.20	0.45*
<i>T3/T4</i> (r_{34})	0.79***	0.59***	0.55**	0.70***

Note. ⁺ $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Table 5.7. Multilevel models for intra-individual changes in levels of categorization (T1 to T4).

Effect	Individual representation				Subgroup representation				Dual identity representation				Common in-group representation			
	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4	M1	M2	M3	M4
Intercept	3.08**	3.08**	3.08**	3.08**	3.29**	3.29**	3.29**	3.29**	3.26**	3.26**	3.26**	3.26**	2.96**	2.96**	2.96**	2.96**
Time	-0.15*				-0.03				0.22*				0.02			
T1			-0.63*	-0.53 ⁺			0.03	-0.09			-0.58*	-0.59*			0.08	0.36
T2		0.63*		0.10		-0.03		-0.12		0.58*		-0.01		-0.08		0.28 ⁺
T3		0.53 ⁺	-0.10			0.09	0.12			0.59*	0.01			-0.36	-0.28 ⁺	
T4		0.18	-0.45**	-0.35*		-0.10	-0.07	-0.19		0.84**	0.27	0.26		-0.01	0.07	0.35*
<i>Variance-covariance matrix</i>																
	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4	T1	T2	T3	T4
T1	1.82	0.25	0.15	0.48	0.60	0.12	0.00	0.07	1.67	0.39	-0.19	-0.59	1.72	-0.12	-0.65	-0.31
T2	0.25	1.41	0.70	0.99	0.12	0.94	0.48	0.44	0.39	1.23	0.58	0.15	-0.12	0.70	0.24	0.43
T3	0.15	0.70	1.47	1.12	0.00	0.48	1.24	0.63	-0.19	0.58	1.19	0.61	-0.65	0.24	1.07	0.67
T4	0.48	0.99	1.12	1.60	0.07	0.44	0.63	0.99	-0.59	0.15	0.61	0.94	-0.31	0.43	0.67	1.22

Note. N (level-1) = 4; N (level-2) = 57. ⁺ $p < .08$ * $p < .05$ ** $p < .01$. M1 = Model with linear effect of time, M2 = Model with dummy variables and T1 as reference point, M3 = Model with dummy variables and T2 as reference point, M4 = Model with dummy variables and T3 as reference point.

Means, standard deviations, and stability coefficients of categorization levels (aggregated over individuals) are displayed in Table 5.6. In order to investigate intra-individual changes in individual, subgroup, common in-group, and dual identity representations over the course of the project, multilevel models were employed. Models consisted of the two levels ‘occasions of measurement’ (Level-1; $n_1 = 4$) nested in ‘students’ (Level-2; $n_2 = 57$)⁶. The data were analyzed with HLM 6 (Bryk & Raudenbusch, 1992). Fixed effects parameters were estimated using a Full Maximum Likelihood algorithm. Predictor variables were grand mean centered prior to analyses. Unstandardized estimates are displayed in Table 5.7.

First, a linear trend over all four measurement occasions was tested in Model 1 (M1). Then, in order to investigate all possible contrasts between the four measurement occasions, models were run with different dummy codings. In Model 2 (M2), *T1* was used as the reference point for all regression parameters. Thus, *T1* was contrasted with *T2* (Dummy t_2 : $t_1 = 0, t_2 = 1, t_3 = 0, t_4 = 0$), with *T3* (Dummy t_3 : $t_1 = 0, t_2 = 0, t_3 = 1, t_4 = 0$), and *T4* (Dummy t_4 : $t_1 = 0, t_2 = 0, t_3 = 0, t_4 = 1$). In Model 3 (M3), *T2* was used as the reference point for all regression parameters. *T2* was contrasted with *T1* (Dummy t_1 : $t_1 = 1, t_2 = 0, t_3 = 0, t_4 = 0$), with *T3* (Dummy t_3 : $t_1 = 0, t_2 = 0, t_3 = 1, t_4 = 0$), and *T4* (Dummy t_4 : $t_1 = 0, t_2 = 0, t_3 = 0, t_4 = 1$). Finally, in Model 4 (M4), *T3* was used as the reference point. *T3* was contrasted with *T1* (Dummy t_1 : $t_1 = 1, t_2 = 0, t_3 = 0, t_4 = 0$), with *T2* (Dummy t_2 : $t_1 = 0, t_2 = 1, t_3 = 0, t_4 = 0$), and *T4* (Dummy t_4 : $t_1 = 0, t_2 = 0, t_3 = 0, t_4 = 1$), respectively.

Results indicated a significant increase in individual representation at the beginning of intergroup interactions (i.e., from *T1* to *T2*). However, overall a significant negative trend emerged for an individual representation. This negative trend over time was also reflected in the significant contrast between *T2* and *T4*, and the significant contrast between *T3* and *T4*. Thus, contact between project groups initially led to an individualized perception of out-group members, which weakened considerably over time. This finding is in line with the “ideal” categorization sequence proposed by Pettigrew (1998).

No significant intra-individual changes in subgroup categorization were found. Representations as subgroups were similarly strong throughout the project. However, a linear positive trend was found for a dual identity representation, indicating a significant increase over time. Furthermore, results of planned contrasts indicated that a dual identity representation was significantly weaker at *T1* compared to all other time points. Thus, a dual identity representation quickly developed when groups started interacting with each other, and increased even further over time. These findings suggest that a

⁶ No significant amount of variance was found between project groups (i.e., at level-3) for any of the dependent variables. For individual representation: $\gamma_{00} = .08, \chi^2 = 20.74, df = 14, p > .10$; For subgroup representation: $\gamma_{00} = .00, \chi^2 = 7.58, df = 14, p > .50$; For common group representation: $\gamma_{00} = .00, \chi^2 = 11.81, df = 14, p > .50$; For dual identity representation: $\gamma_{00} = .02, \chi^2 = 16.71, df = 14, p > .10$. Therefore, a simpler model with two levels was used for subsequent analyses.

subgroup representation does not change but may be replaced by a dual identity representation which increases consistently over time.

In contrast to a dual identity representation, a common in-group representation is only thought to increase after considerable intergroup interaction. In line with this assumption, a significant increase in common in-group representation was found toward the end of the project (i.e., from *T3* to *T4*).

In sum, intra-individual changes in categorization levels closely resemble the sequence proposed as “ideal” by Pettigrew (1998). Over the course of the project, the representation as individuals decreased while a dual identity representation increased eventually followed by an increase in a common in-group representation.

5.3.6 *Analysis of additive effects of categorization levels*

The fourth set of analyses tested the main proposition of the LCM (Pettigrew, 1998) with longitudinal regression analyses. Means, standard deviations and interrelationships of individual representation/decategorization, subgroup representation/categorization, common in-group representation/recategorization, and outcome variables (i.e., intergroup bias, cooperation, and helping behavior) are presented in Table 5.8. With the exception of an unexpected negative correlation between recategorization and intergroup cooperation at *T3*, no cross-sectional relations between categorization levels and outcome variables emerged.

Pettigrew’s longitudinal model suggests that prejudice reduction can best be achieved by a temporal succession of categorization levels. Thus, additive effects on bias at *T4* should result from an individual representation at *T2*, a subgroups representation at *T3*, and a common in-group representation at *T4*. As the same categorization processes are also thought to encourage prosocial behavior (cf. Gaertner & Dovidio, 2000), an extension of the Pettigrew model was tested with regard to cooperation and helping behavior. In the last step, the proposed model was tested against models with alternative sequences of categorization levels. Table 5.9 presents the R^2 , R^2 change for the third step and F values for the model representing the “ideal” sequence suggested by the LCM as well as all alternative regression models. First, intergroup bias at *T4* was used as the criterion variable. After controlling for age and gender, the two autoregressor variables intergroup bias at *T2* and intergroup bias at *T3* were included in Model 1 (M1). By controlling for intergroup bias measured at *T2* and *T3*, residual intergroup bias *T4* scores were obtained. As predictor variables, the sequence proposed by the LCM, with decategorization at *T2*, categorization at *T3*, and recategorization at *T4*, was added to Model 1 in the third step. Contrary to Hypothesis 5a, the sequence decategorization-categorization-recategorization did not explain an incremental amount of variance in intergroup bias.

Table 5.8. Descriptives and interrelationships of variables at T2 (above diagonal), T3 (below diagonal) and T4.

Measure	Time 2	Time 3	Time 4	Pearson's correlations (<i>r</i>) for T2, T3						Pearson's correlations (<i>r</i>) for T4				
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)	1	2	3	4	5	6	1	2	3	4	5
1 Decategorization	3.26 (1.21)	3.21 (1.22)	2.94 (1.28)		.41**	-.50**	.07	.02	-.08					
2 Categorization	3.28 (0.99)	3.38 (1.10)	3.29 (1.03)	.28 ⁺		-.24	.12	.01	-.11	.27				
3 Recategorization	3.02 (0.85)	2.71 (1.04)	3.06 (1.12)	-.60**	-.16		.14	-.21	-.05	-.30 ⁺	-.10			
4 Bias	0.30 (0.98)	0.16 (0.88)	0.18 (1.02)	-.16	-.19	.28		-.09	-.01	.01	-.23	.23		
5 Cooperation	0.39 (0.70)	0.83 (1.12)	0.89 (1.11)	.08	.09	-.36*	-.40*		.50**	.05	.17	.02	-.31 ⁺	
6 Helping	1.38 (1.30)	1.74 (1.45)	1.34 (1.23)	.05	.11	-.12	-.64**	.52**		-.05	.10	.01	-.48**	.60**

Note. ⁺ $p < .10$ * $p < .05$ ** $p < .01$.

Table 5.9. Test of Longitudinal Contact Model (M1) and alternative models (M2-M6): Results for third regression step.

Model with categorization sequence	Intergroup bias (T4)				Cooperation (T4)				Helping (T4)			
	R^2	F	R^2 ch.	F for R^2 ch.	R^2	F	R^2 ch.	F for R^2 ch.	R^2	F	R^2 ch.	F for R^2 ch.
1. Decategorization T2-Categorization T3-Recategorization T4	0.50	1.89	0.02	0.19	0.75	5.63**	0.23	4.07*	0.72	4.85**	0.02	0.33
2. Decategorization T2-Recategorization T3-Categorization T4	0.49	1.90	0.02	0.16	0.66	3.96*	0.15	2.11	0.70	4.62**	0.01	0.07
3. Recategorization T2-Decategorization T3-Categorization T4	0.49	1.93	0.02	0.20	0.63	3.39*	0.12	1.47	0.75	6.11**	0.06	1.14
4. Recategorization T2-Categorization T3-Decategorization T4	0.51	2.09	0.04	0.40	0.52	2.16	0.01	0.07	0.77	6.82**	0.08	0.08
5. Categorization T2-Decategorization T3-Recategorization T4	0.57	2.47	0.09	0.89	0.74	5.23**	0.22	3.62*	0.74	5.22**	0.04	0.59
6. Categorization T2-Recategorization T3-Decategorization T4	0.63	3.43*	0.16	2.05	0.64	3.48*	0.12	1.57	0.72	5.19**	0.03	0.48

Note. * $p < .05$ ** $p < .01$.

Next, the effect of the sequence decategorization-categorization-recategorization on intergroup cooperation was explored. Again, age and gender were added in the first step, followed by the autoregressor cooperation at $T2$ and $T3$, respectively, in the second step, and the predictor variables decategorization at $T2$, categorization at $T3$, and recategorization at $T4$ in the third step. In support of Hypothesis 5b, the sequence decategorization-categorization-recategorization explained a substantial amount of variance in intergroup cooperation (23 %) over and above the variance explained by control variables and the autoregressor. Decategorization at $T2$ ($\beta = 0.37, p < .05$) and recategorization at $T4$ ($\beta = 0.58, p < .01$) positively predicted the residual intergroup cooperation $T4$ score, while categorization at $T3$ ($\beta = -0.17, p > .10$) had no significant effect. The effect of the sequence decategorization-categorization-recategorization on intergroup helping was tested with a similar model. However, no significant effect could be obtained with regard to intergroup helping.

In order to investigate whether other categorization sequences were effective in predicting intergroup bias, cooperation and helping behavior, respectively, all alternative sequences were tested in a similar fashion as the “ideal” model. The models included age and gender in the first step, followed by the autoregressor variable at $T2$ and $T3$ in the second step. In the third step, the alternative categorization sequence was added to the model. As Table 5.9 shows, none of the alternative categorization sequences explained an incremental amount of variance in intergroup bias, cooperation, or helping behavior (all $ps > 0.10$). The only notable exception was the model representing the sequence categorization-decategorization-recategorization which explained an incremental amount of variance in intergroup cooperation. In this sequence, categorization at $T2$ had a marginally significant positive effect ($\beta = 0.33, p > .07$), decategorization at $T3$ showed no effect ($\beta = -0.12, p > .10$), while recategorization at $T4$ had a significant positive effect ($\beta = 0.47, p < .05$) on the residual cooperation score at $T4$.

In sum, the “ideal” sequence of categorization levels proposed by the LCM (i.e., decategorization-categorization-recategorization) was supported for intergroup cooperation, confirming Hypothesis 5b, but could not be supported for intergroup bias or intergroup helping as the outcome variable.

5.4 Discussion

The aim of Study 2 was twofold. First, the causal direction of the path proposed by the CIIM (Gaertner & Dovidio, 2000) was explored. Second, the LCM by Pettigrew (1998) was examined by looking at intra-individual variations in categorization levels over time and the effect of an “ideal” categorization sequence on bias reduction and the facilitation of prosocial behavior.

The results of the longitudinal regression analyses provided evidence that the amount of friendship contact with members of another organizational group is predictive of more favorable attitudes and intergroup cooperation. For intergroup bias,

this is further evidence for the causal direction indicated by Allport (1954) and is also in line with findings from other longitudinal studies in a variety of intergroup contexts (Brown et al., 2007; Eller & Abrams, 2003, 2004; Levin et al., 2003). Even more noteworthy is the finding that friendship contact was predictive of cooperation (and marginally of helping behavior) rather than the reverse. While it seems plausible that positive experiences with members of the out-group during cooperative encounters would encourage friendship contact, the data suggest otherwise. As proposed by the CIIM (Gaertner & Dovidio, 2000), contact under “optimal” conditions between members of different organizational groups led to more prosocial behavior.

Due to the multi-wave design of the study, it was also possible to test different time lags. Results showed that friendship contact reduced bias and encouraged cooperation after six weeks and also after a longer time of about three months. In contrast, for helping behavior, no effect of friendship contact was found over the short term but a marginally significant effect over a longer term. An even longer time lag than eleven weeks may have provided more conclusive results for intergroup helping, which seems to take considerable time to develop following friendship contact compared to bias and cooperation, respectively.

In contrast to the direct effect of friendship contact on attitudes and prosocial behavior, little evidence was found for the indirect effect via a common in-group representation. Friendship contact was neither predictive of a common in-group representation nor vice versa. A possible explanation for the lacking path from contact under “optimal” conditions to a common in-group representation may be the operationalization of “optimal” contact. Although friendship contact is widely recognized as high quality contact (e.g. Paolini et al., 2007; Pettigrew, 1998), it reflects *interpersonal* contact under “optimal” conditions rather than *intergroup* contact under “optimal” conditions. Whereas participants in Study 1 rated the extent to which contact conditions were realized between workgroups, friendship contact measured in Study 2 reflects “optimal” contact conditions between single members of two groups. However, high quality contact between single members may not be enough to create a representation as one common in-group.

The path from a common in-group representation to intergroup bias and cooperation, respectively, was also not supported by the data. However, the path from a common in-group representation to intergroup helping was found for the longer lag, and was stronger than the reverse path. As there has been no study to date that has tested the CIIM longitudinally, this is the first indication that a common in-group representation actually leads to more helping behavior rather than the reverse. Nevertheless, correlations across time (see Table 5.4) indicated that the measure of a common in-group representation was relatively unstable. The measure at *T2* did not correlate significantly with the same measure at *T3*, and only weakly with the same measure at *T4*. Therefore results regarding a common in-group representation need to be interpreted with caution.

While the instability of the common in-group representation measure caused difficulties in the analysis of causality, changes in mental representations over time are explicitly expected by the LCM, depending on the amount of intergroup contact a person has had. Interestingly, the analysis of intra-individual changes in the level of categorization reflected the “ideal” sequence proposed by the LCM (Pettigrew, 1998) quite closely. While a representation as individuals was most evident during initial stages of intergroup interactions, a dual identity representation increased during established contact. A significant increase in a common in-group representation was also found toward the end of the project. Only a subgroup representation, which should ideally increase when contact is established, was found to be stable over time. However, a dual identity representation, which represents a salient subgroup categorization within a common in-group, increased after contact was established. Similar to a subgroup categorization, a dual identity representation should also facilitate a generalization of effects because subgroup categories are salient within a common in-group (see also Gaertner & Dovidio, 2000). Thus, the “ideal” sequence of categorization levels seems to develop over time with increasing amounts of intergroup interaction, at least in the specific context of student project groups.

Moreover, Study 2 provided initial evidence that the “ideal” sequence of categorization levels (i.e., decategorization-categorization-recategorization) suggested by Pettigrew (1998) may indeed be effective in changing intergroup relations. Decategorization during initial interactions between project groups in addition to recategorization at the end of the project positively predicted intergroup cooperation. Although categorization at the intermediate stage of interactions did not predict cooperation, this result is still in line with the model. Indeed, categorization is mostly thought to facilitate generalization of interpersonal effects to the out-group as a whole. Thus, results provide a first indication that cooperation between subgroups may be most effectively encouraged when group members perceive each other at the personal level initially, followed by an increase in category salience, and a representation as a common in-group later on.

In contrast to the result for intergroup cooperation, the original hypothesis by Pettigrew (1998), that a sequence starting with decategorization, followed by categorization and ideally recategorization reduces prejudice most effectively, could not be supported by the data. None of the alternative categorization sequences yielded a significant effect on intergroup bias either. However, the attitude measure used in this study had a strong cognitive component (evaluation of groups on two traits). Because the LCM proposes that decategorization during initial contact mainly reduces negative intergroup affect (e.g., intergroup anxiety), a more affective attitude measure might have yielded much clearer results.

A second issue concerns the statistical model used. Here, the categorization sequence was interpreted as an additive effect of categorization levels at different time points on the outcome variable. More specifically, it was tested whether

decategorization during initial contact in addition to categorization during established contact in addition to recategorization after repeated contact had an effect on attitudes and prosocial behavior. A different interpretation of the model, however, suggests an interactive effect of decategorization, categorization, and recategorization on intergroup attitudes (U. Wagner, personal communication, November 6, 2007). In this case, decategorization during initial contact leads to less bias and negative affect which creates an opportunity for contact under category salience. The resulting generalization of effects then leads to recategorization at a later stage. Such an interpretation of the model, however, needs to be tested with a three-way interaction across three measurement occasions. Given the relatively low statistical power of the longitudinal analysis, it was not possible to test such a complex model.

Limitations. Due to the small sample size, the low statistical power does not allow a rejection of models with alternative categorization sequences to the one proposed by the LCM. While the “ideal” sequence yielded the largest effect on intergroup cooperation, with only one other sequence reaching significance, more statistical power may have led to further significant models.

In addition to the low statistical power of the analyses, the less than optimal stabilities of the categorization measures warrant careful conclusions about the analyses of the LCM. It is quite possible that different measurement errors led to a significant result of the “ideal” sequence rather than other sequences, creating a methodological artifact. However, as it is the first study to test the categorization sequence suggested by the LCM, the data give at least a first indication that changes in categorization over time may be a promising route to optimize intergroup cooperation.

The interpretation of results may also be limited due to an attrition rate of 25 to 35 %. Although drop-out analyses indicated no differences between background populations in the variables obtained, the low statistical power may have let to undetected differences.

With regard to the causal direction proposed by the CIIM, encouraging results were obtained with regard to the effects of contact under “optimal” conditions on bias, cooperation and helping behavior between organizational groups. The effect in the proposed direction was obtained but not the reverse effect. However, while the inclusion of the autoregressor into the model excludes most third variable explanations, nonconstant variables (e.g., social desirability) and correlated measurement errors may still have led to a spurious effect. Therefore, replications of results are needed, especially with a much larger sample size.

In conclusion, longitudinal analyses replicate the direct path from “optimal” contact to attitudes and prosocial behavior suggested by the CIIM (Gaertner & Dovidio, 2000), already supported by Study 1. Study 2 is also the first study to indicate that the “ideal” sequence of categorization levels suggested by the LCM (Pettigrew, 1998) may improve intergroup cooperation. Decategorization during initial contact, followed by categorization at an intermediate stage, and finally recategorization led to the highest

level of cooperation between project groups. In addition, intra-individual changes in categorization over the course of the project closely resembled this “ideal” sequence. In the following chapter, the results obtained in Study 2 will be integrated with findings from Study 1 to form a Context-Specific Contact Model of Prosocial Behavior between Workgroups. Implications for future research and practice will be discussed, too.

6. Summary & Discussion of Research Findings

The starting point for the presented research was an intergroup perspective on relations between workgroups in an intra-organizational context. Because workgroups represent subgroups that share a common identity at the organizational level, I have focused on contact conditions and categorization processes that have the potential to promote positive intergroup attitudes and prosocial behavior. While previous applications of social categorization models to the organizational context have primarily concentrated on mergers and acquisitions (e.g., Giessner, 2004; Terry, 2001; Van Dick, Wagner, & Lemmer, 2004; Van Leeuwen, Van Knippenberg, & Ellemers, 2003), hardly any research to date has investigated intergroup processes between workgroups (for a notable exception see Richter et al., 2006). This gap in the literature is quite surprising as tensions between workgroups have been identified as the most common problem for management (Wunderer, 1990), and may have serious implications for workgroup effectiveness (Richter et al., 2006) and the overall workflow within the organization (Schütz & Bloch, 2006).

The initial focus of my research was to examine whether a representation as a common in-group would mediate the effect of contact under “optimal” conditions on intergroup attitudes and prosocial behaviors between workgroups, as suggested by the CIIM (Gaertner & Dovidio, 2000). “Optimal” conditions for intergroup contact have been proposed by Allport (1954) and others (e.g., Pettigrew, 1998; Wagner et al., 2003). Although the effects of these contact conditions on intergroup relations have been examined quite frequently in previous research (see Brewer & Kramer, 1985, for an overview), few studies have tested their differential effects, and none so far has taken a multilevel perspective. However, a multilevel conceptualization of contact conditions is necessary because some of the proposed contact conditions are clearly group-level variables (i.e., equal status, authority support, and group norms) while others are individual-level variables (i.e., perception of common goals, opportunity for contact).

A second objective of this research was to explore whether predictions by the CIIM regarding prosocial behaviors as outcome variables could be supported in an organizational context. While research on prosocial behavior in organizations (e.g., OCB) is quite extensive, there has so far been no explicit research on prosocial behaviors *between* organizational groups. Conversely, most research on intergroup relations, particularly on intergroup contact, has investigated predictors of stereotypes, prejudice and general intergroup attitudes rather than prosocial behaviors (cf. Brown & Hewstone, 2005). More recently, further outcome variables such as intergroup affect, trust and forgiveness were included in intergroup contact research (e.g., Hewstone, Cairns, Voci, Hamberger, & Niens, 2006; Islam & Hewstone, 1993; Tam, Hewstone, Cairns, Tausch, Maio, & Kenworthy, 2007). However, the effect of intergroup contact on prosocial behaviors, such as cooperation and helping behavior, has so far been largely neglected, although such an effect might have considerable implications for practical interventions.

Based on discrepant findings from Study 1, I extended the initial focus on “optimal” contact toward other forms of intergroup contact that have the potential to make personal and subgroup identities salient rather than a common in-group identity. Based on the Congruity Hypothesis (Haslam, 2004) and the interpersonal–intergroup behavioral continuum proposed by Tajfel (1978), I investigated whether informal and work-related contact contexts have a differential impact on interpersonal and intergroup forms of prosocial behavior.

An interesting way to integrate different forms of contact and subsequent categorization processes has been proposed by Pettigrew (1998). In the LCM, Pettigrew suggests an “ideal” temporal sequence for categorization levels. Ideally, initial contact should make decategorization possible. When contact is established, categorization should be achieved, and, after repeated contact, a recategorization on an inclusive superordinate level. This categorization sequence was tested in Study 2 because the idea of a temporal sequence of categorization levels has received little empirical attention although it might hold important answers for intergroup interventions.

In the following section, research findings regarding the effect of contact in different contexts on attitudes and prosocial behaviors between workgroups are summarized, followed by findings on a common in-group representation as a mediator process, and initial findings on the “ideal” temporal sequence of categorization processes.

6.1 Summary of Research Findings

6.1.1 Effects of contact under “optimal” conditions on attitudes and prosocial behaviors between workgroups

Following the CIIM (Gaertner & Dovidio, 2000), the effects of group-level and individual-level contact conditions on bias, out-group evaluations, cooperation, and helping behavior were examined in Study 1 with a cross-sectional survey design in a mail-order company. In addition, the causal direction of the effect of friendship contact (which is thought to represent most of Allport’s contact conditions) on bias, cooperation, and helping behavior, respectively, was tested in Study 2 with a multi-wave longitudinal design in the context of student project groups.

Overall, predictions were partly supported by the data: Individual-level contact conditions (i.e., goal interdependence, opportunity for contact) were positively related to out-group evaluations, cooperation, and helping behavior, respectively, and negatively to intergroup bias. In addition, group-level contact conditions (i.e., authority support, group norms, equal status) were positively related to intergroup cooperation. These findings support the direct effects of contact conditions on intergroup attitudes and prosocial behavior proposed by the CIIM.

However, contrary to predictions, group-level contact conditions were virtually unrelated to out-group evaluations and bias. The missing link between group-level contact conditions and out-group evaluations/bias may be explained in terms of

operationalization (see Chapter 3.4) but is overall in line with findings by Pettigrew and Tropp (2006) that contact conditions are not a necessary precondition for changes in intergroup attitudes following intergroup contact.

For intergroup helping, the only group-level effect obtained was a negative relationship with equal status between workgroups. While the CIIM suggests a positive relationship between equal status and helping, the actual finding that more help is given to out-groups when status differences are large rather than small may reflect the status differential inherent in helping situations (see Chapter 1.1). With regard to the relationship between group norms and helping, a moderator effect was obtained at the individual-level. Group norms as perceived by individual workgroup members were only predictive of intergroup helping for those workgroup members that identified highly with their respective workgroup. The later finding confirms the Self-Categorization Model of Group Norms by Terry and Hogg (1996).

Although the analysis of group-level contact conditions provided mixed results, an aggregate measure of both individual- and group-level contact conditions was predictive of out-group evaluations, intergroup bias, cooperation, and helping behavior in Study 1. Thus, contact under “optimal” conditions fosters positive out-group attitudes and prosocial behavior. This finding was replicated longitudinally in Study 2, with contact under “optimal” conditions (in terms of friendship) predicting intergroup bias and cooperation between project groups six and eleven weeks later. For intergroup helping, a marginally significant effect of friendship contact was obtained. Because reverse effects were not found the predicted path from contact under “optimal” conditions to intergroup attitudes and prosocial behavior, respectively, is supported by the data.

In sum, contact under “optimal” conditions generally creates more positive out-group attitudes and prosocial behavior between workgroups. However, discrepant findings emerged for different outcome variables. While intergroup cooperation is affected both by group-level and individual-level contact conditions, attitudes and interpersonal helping behavior are merely affected by individual-level contact conditions.

6.1.2 Effects of contact in informal and work-related contexts on interpersonal and intergroup prosocial behaviors

Because interpersonal prosocial behavior, such as helping behavior, seems to be affected by individual-level variables only, I extended the focus from contact under “optimal” conditions that makes a superordinate identity salient to contact contexts that make personal and subgroup identities salient. Based on the Congruity Hypothesis (Haslam, 2004), interpersonal prosocial behavior should be primarily fostered by contact that makes personal identities salient, whereas intergroup prosocial behavior should be promoted by contact that makes subgroup identities salient.

In organizational settings, two contact contexts can be identified that are likely to create the relevant categorization levels: informal and work-related contact contexts. In informal contact contexts, for instance during lunchtime, breaks or leisure time, members of different workgroups have the opportunity to exchange personally relevant, individuating information. Because personal information is likely to make personal identities salient (e.g., Bettencourt et al., 1992; Ensari & Miller, 2005; Miller et al., 1985), workgroup members should start to perceive each other more as individuals and less as members of different workgroups. According to the behavioral continuum proposed by Tajfel (1978), such interpersonal encounters should promote interpersonal rather than intergroup behavior. Thus, informal contact between members of different workgroups should promote interpersonal prosocial behavior. This hypothesis was supported in Study 1 (Part 2) where informal contact was found to be significantly related to interpersonal helping behavior (OCB-I).

In contrast to informal contact, work-related contact contexts provide workgroup members with the opportunity to exchange task-relevant information. In meetings, workshops and other work-related contexts, workgroup members usually need to represent their workgroup and its expertise, so that workgroups are likely to be salient. When social identities as members of different workgroups are salient, contact should promote behavior directed toward the out-group as a whole. Study 1 (Part 2) confirmed this hypothesis by showing that out-group directed forms of OCB such as conscientiousness and civic virtue were more strongly related to work-related intergroup contact than to informal contact.

In sum, individual-directed prosocial behavior between workgroups, such as helping (OCB-I), may be best promoted in informal contact contexts, while group-directed prosocial behavior toward other workgroups, such as civic virtue and conscientiousness (OCB-O), may be best promoted in work-related contact contexts. In contrast, contact under “optimal” conditions is predictive of attitudes and prosocial behavior in general, but seems to be most effective in promoting cooperation between workgroups. The impact of contact under “optimal” conditions on intergroup relations may be due to its potential to create a common in-group representation. Findings on this prediction are summarized next.

6.1.3 Mediator common in-group representation

Both Study 1 and Study 2 allowed a test of the indirect effect proposed by the CIIM (Gaertner & Dovidio, 2000). According to this model, contact under “optimal” conditions promotes positive intergroup relations in part because it changes the mental representation of the group aggregate toward a common in-group identity. This way, members of different subgroups start to perceive each other as being in-group members at a higher level of categorization. In an intra-organizational context, workgroups should show less bias and more prosocial behavior toward each other when “optimal” contact conditions are present because they start perceiving each other as members of

the same in-group, the organization. In support of this hypothesis, a partial mediation effect was found in Study 1 for out-group evaluations and intergroup cooperation as outcome variables. To my knowledge, this is the first time that the effect of a common in-group representation on intergroup cooperation has been obtained in a field setting, thus confirming previous laboratory results (e.g., Brewer & Kramer, 1986; Polzer, 2004; Wit & Kerr, 2002). The positive effect of a common in-group representation on out-group evaluations obtained in Study 1 also supports the central prediction by the CIIM that a preferential evaluation of in-group members is extended to members of the (former) out-group. In contrast, the decategorization/personalization model by Brewer and Miller (1984) would predict a reduction in preference for in-group members. To my knowledge, there has been only one other study by Gaertner and colleagues (1989) which has obtained this evaluation extension effect in support of the CIIM.

A more positive out-group evaluation, however, did not directly translate into less intergroup bias. No mediation effect could be obtained for intergroup bias but a moderator effect of relative prototypicality, confirming predictions derived from the IPM (Mummendey & Wenzel, 1999). A common in-group representation reduces intergroup bias only when prototypicality of the in-group relative to the prototypicality of the out-group is perceived as low. This result replicates findings from studies on the IPM (e.g., Waldzus et al., 2003; Waldzus et al., 2004; Waldzus et al., 2005). Thus, in-group projection limits the scope for a common in-group identity to have an effect on intergroup bias between workgroups considerably.

In contrast to Study 1, contact under “optimal” conditions was not predictive of a common in-group representation in Study 2. A common in-group representation was also not predictive of intergroup outcomes with the exception of intergroup helping. Thus, the partial mediation effect obtained in Study 1 could not be replicated longitudinally. This result may be due to methodological limitations, such as low statistical power and instability of the mediator variable (see Chapter 5.4). Another explanation may be that contact under “optimal” conditions was operationalized in terms of friendship contact. However, friendship contact may reflect contact under “optimal” conditions on the individual-level but not the group-level. Common goals, equal status and favorable norms during intergroup friendship apply to the two people involved. However, for a common in-group identity to develop, conditions should apply to the relationship between the two groups that are represented by the individuals (for a similar distinction between interpersonal and intergroup contact conditions, see Brown & Hewstone, 2005).

In sum, findings provide some evidence that a common in-group representation partially mediates the effect of contact under “optimal” conditions on out-group evaluations and intergroup cooperation in the context of workgroup relations. However, the mediation effect was found to be relatively small in size in Study 1, and could not be obtained in Study 2. Furthermore, the impact of a common in-group representation on

intergroup bias was found to be dependent on the relative prototypicality of workgroups.

6.1.4 Temporal sequence of categorization levels

Findings from Study 1 and Study 2 provide evidence that the impact of intergroup contact on attitudes and prosocial behavior between workgroups is dependent on the specific context in which contact takes place (i.e., informal, work-related, or under “optimal” conditions) and the subsequent categorization processes that are induced (i.e., decategorization, categorization, or recategorization). Because each level of categorization leads to different benefits for intergroup relations, it would be particularly desirable to integrate these models. Pettigrew (1998) proposed to integrate contact-categorization models along a timeline, arguing that decategorization during initial contact would promote more positive attitudes and affect toward out-group members, categorization after established contact would help to generalize these effects toward the out-group as a whole, and recategorization after repeated contact would lead to the extension of preferential evaluations to the out-group.

In Study 2, this proposition was tested with a multi-wave longitudinal study involving student project groups. Although the study could not provide a thorough test of the LCM, it is the first study to date that tests the proposed sequence. Findings provide an initial indication that the sequence proposed by Pettigrew (1998) is more effective in promoting intergroup cooperation than alternative categorization sequences. However, intergroup bias was not reduced by the “ideal” categorization sequence, as originally proposed by the LCM, nor by any alternative sequences. Possibly, a different bias measure with a stronger affective component may have yielded clearer results because the LCM proposes changes in attitudes mainly due to changes in affect (see also Chapter 1.3.4 and 5.4).

Results of Study 2 also indicate that intra-individual changes in categorization levels that occur over an extended period of time reflect the “ideal” sequence quite closely. In correspondence with the proposed sequence, an individual representation/decategorization is most prominent at the beginning of intergroup contact and decreases gradually afterwards, while a dual representation as subgroups within a common identity increases over time, followed by an increase in a common in-group representation/recategorization after considerable time. However, no intra-individual changes in subgroup representation/categorization were found. As argued before, the generalization effect associated with a subgroup representation may also be provided by a dual identity representation because subgroups are still salient within such a representation.

In sum, initial evidence in favor of the “ideal” sequence from decategorization to categorization to recategorization was found regarding intergroup cooperation. In addition, a partial recategorization/dual identity representation may be incorporated into the model by filling the gap between subgroup representation and full recategorization

(see also Eller & Abrams, 2004). Although results need to be interpreted cautiously, they give at least an indication that future research on the LCM may be fruitful.

6.2 A Context-Specific Contact Model of Prosocial Behavior between Workgroups

6.2.1 Direct and indirect effect of contact in different contexts

Since Allport (1954) formalized the Contact Hypothesis, a number of more advanced contact models have been proposed that take mediating processes into account. Most of these models have suggested changes in categorization as the mediating process between intergroup contact and attitude change (cf. Brewer & Miller, 1984; Gaertner & Dovidio, 2000; Hewstone & Brown, 1986; Pettigrew, 1998). More recently, affect has also been incorporated into contact models (Brown & Hewstone, 2005; Stephan & Stephan, 1992). However, the context in which contact takes place has not always been well defined in contact research. Often a distinction is made between contact quantity and quality, with contact quantity referring to the sheer amount of contact with out-group members and contact quality referring either to contact under “optimal” conditions or friendship contact (for an overview see Brown & Hewstone, 2005, Pettigrew & Tropp, 2006). However, findings from the presented research show that the amount of intergroup contact in different contact contexts can have unique effects on outcome variables (see also Bettencourt et al., 1992; Islam & Hewstone, 1993). Similarly, Brown and Hewstone (2005) have pointed out that both laboratory and field studies have often failed to recognize whether subgroup categories were salient during contact, with considerable implications for the interpretation of results. Therefore, in the following section, I will propose a Context-Specific Contact Model of Prosocial Behavior between Workgroups that takes into account the categorization processes that are most likely to be activated and the categorization level (i.e., interpersonal, intergroup or intragroup) at which prosocial behavior should be affected.

In organizational settings, three contact contexts can be distinguished that have implications for categorization processes and subsequent changes in intergroup behavior: informal contact, work-related contact, and contact under “optimal” conditions.

Informal contact can be defined as contact that provides an opportunity to exchange personal information. Although informal contact will often take place in settings that are considered as “informal” such as cafeterias, bars or sports fields, it is not restricted to such places. In organizations, people often sit together in their office during short breaks or meet in corridors in order to chat about events in their personal lives or personal interests. The main point here is that informal contact has been initiated with the intention to exchange personally rather than work-relevant information.

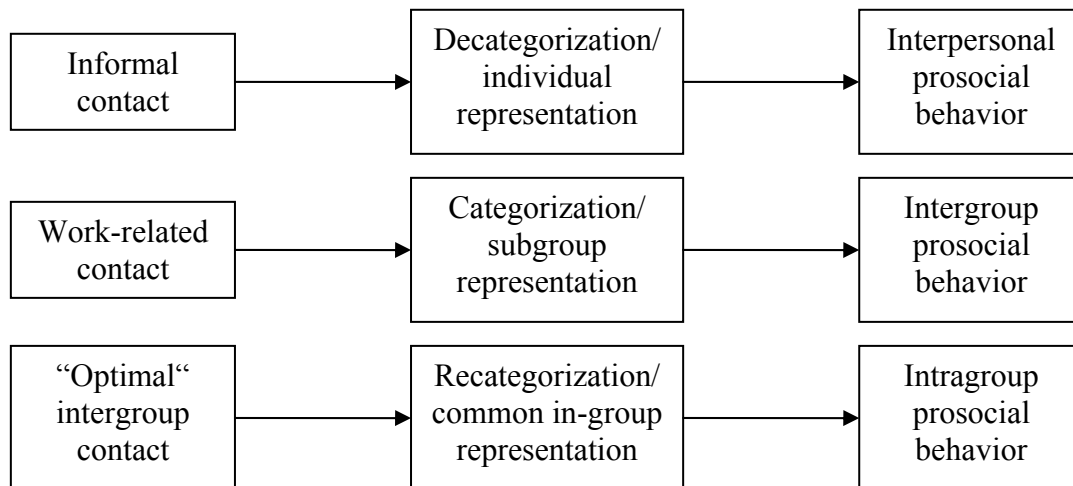


Figure 6.1. Context-Specific Contact Model of Prosocial Behavior between Workgroups.

In contrast, work-related contact can be defined as contact that is initiated within the rules and regulations of the particular organization in order to coordinate work procedures, formalize rules and decisions, negotiate resources and exchange other work-related information. Work-related contact usually takes place at pre-arranged places and times, for instance during meetings and workshops. Work-related contact is mainly initiated with the intention to exchange work-relevant rather than personal information.

The third category, contact under “optimal” conditions, refers to intergroup contact in which workgroups are aware of the goals shared by all workgroups involved, perceive their status within the organization as equal, have developed norms that encourage positive interactions, and positive intergroup relations are supported by workgroup managers. Such “optimal” contact between workgroups is likely to take considerable time to develop, and may often depend on the explicit effort of workgroups and their managers. In this context, it seems essential to create “optimal” conditions between workgroups rather than between individual workgroup members (i.e., friendship). In contrast to “optimal” intergroup contact, friendship contact may be an effective way to create decategorization rather than recategorization, and should therefore be considered a form of informal contact.

As Figure 6.1 illustrates, each contact context is likely to lead to a different level of categorization and related prosocial outcomes. Because informal contact provides an opportunity for personalization, the personal identity of workgroup members is made salient, so that an individual representation is created. Empirical support for this path is provided by Bettencourt and colleagues (1992) who found that the exchange of personal but not task-relevant information led to more individuation of out-group members. As a consequence of decategorization, the personal characteristics of the individuals in contact and their personal relationship should be more important for subsequent behavior than characteristics of the workgroup or prior workgroup relations (see Brewer

& Miller, 1984; Ensari & Miller, 2006). Results from Study 1 provide evidence for the proposed differential effect that informal contact is more closely related to individual-directed OCB such as helping a member of another workgroup than to work-related contact.

Whereas informal contact should generate an individual representation of workgroup members, work-related contact is more likely to make category membership salient because workgroup members are generally expected to represent the interests of their workgroup and its specific expertise. When group membership is salient, depersonalization will make characteristics of the workgroups and their prior relationship particularly relevant for the evaluation and treatment of out-group members. Therefore, work-related contact should be more effective in changing intergroup behavior than informal contact. Indeed, results obtained in Study 1 indicate that work-related contact is more closely related to group-directed OCBs such as conscientiousness and civic virtue toward another workgroup than to informal contact. While contact under salient categorization conditions clearly has the potential to change intergroup relations for the better (Brown & Hewstone, 2005), it is also possible that such intergroup encounters create competition and bias (Mullen et al., 1992). I will discuss possible moderators such as positive distinctiveness and characteristics of the superordinate identity later on (see Chapter 6.2.3).

The most positive relations between workgroups should result from contact under “optimal” conditions (see also Gaertner & Dovidio, 2000; Pettigrew, 1998; Pettigrew & Tropp, 2006). Because contact under “optimal” conditions has the potential to create a common in-group identity, intergroup behavior should turn into intragroup behavior at a higher level of categorization. When a common identity is salient, in-group members are generally treated quite favorably by virtue of their group membership rather than their personal characteristics. For instance, shared group membership leads to more group-based trust (Kramer, Brewer, & Hanna, 1996), self-disclosure (Dovidio et al., 1997) and group-based empathy (Stürmer et al., 2005), which should in turn promote cooperation and intragroup helping. Indeed, as Study 1 and Study 2 indicate, the more contact conditions are realized between workgroups the higher is the level of intergroup cooperation, helping behavior and positive out-group evaluations. In Study 1, evidence was found that a common in-group representation mediates the relationship between contact under “optimal” conditions and intergroup cooperation as well as out-group evaluations.

While the distinction between different contact contexts can be a useful heuristic for future research because it clarifies the impact specific contact contexts may or may not have on prosocial behaviors between workgroups, it also needs to be noted that considerable overlap between contexts is likely to exist. Similar to the notion by Tajfel and Turner (1979) that interpersonal behavior and intergroup behavior are endpoints of a behavioral continuum, purely informal or work-related contact are also extreme forms of contact. Although most of the information that is exchanged during informal contact

is likely to be personal in nature, some comments about work-related issues may come up between members of different workgroups, making workgroup identities somewhat salient. Likewise, work-related contact contexts are unlikely to exclude any individuating information about workgroup members. The point here is that the more work-related information and less personal information is exchanged during an encounter, the stronger should the shift away from interpersonal and toward intergroup behavior be and vice versa.

The continuum by Tajfel (1978) considers interpersonal and intergroup behavior but not intragroup behavior. However, based on SCT and the idea of a dual identity put forward by Gaertner and Dovidio (2000), another continuum seems to exist between intergroup and intragroup behavior. Similar to the interpersonal-intergroup continuum that relates to the salience of personal and subgroup identities, an intergroup-intragroup continuum relates to the salience of subgroup and a common superordinate identity. The more a common identity becomes salient, and the less subgroup identities are salient simultaneously, the more should behavior reflect intragroup rather than intergroup behavior. Hence, an overlap may also exist between work-related contact, which makes subgroup identities salient, and contact under “optimal” conditions, which makes a common identity salient. In work-related contact contexts, contact conditions may be realized to a certain extent. For instance, workgroups that outline a common project may be aware of shared goals and/or have a similar status within the organization. Although the extent to which contact conditions are realized may not be enough to constitute “optimal” contact and a full recategorization to the superordinate level (i.e., the organization), a partial recategorization/dual identity representation may start to develop. Thus, a common in-group identity should grow stronger and subgroup identities weaker, the more contact conditions are realized, resulting in intragroup rather than intergroup prosocial behavior.

6.2.2 *Further mediator variables*

The model outlined here is based on an analysis of categorization processes that mediate between contact in different contexts and behavioral outcomes. However, further variables that may mediate the proposed paths are conceivable. For instance, after the exchange of personal information, members of different workgroups may discover interpersonal similarities, which in turn may lead to interpersonal attraction, liking and attachment (Byrne & Griffitt, 1974; Ensari & Miller, 2005). Interpersonal attachment is a precondition for empathy (Batson, 1998), which has been shown to foster interpersonal helping behavior (Davis, 1983). In addition, interpersonal helping behavior may also be motivated by interpersonal attraction (Kelley & Byrne, 1976).

In contrast, work-related contact may lead to group-directed prosocial behaviors such as conscientiousness and civic virtue because workgroup members have the opportunity to learn about the expertise and procedures of the other workgroup as well as new developments in their field. Such information will help to meet the standards and

deadlines required by the other workgroup (i.e., conscientiousness) and to initiate new projects and procedures (i.e., civic virtue).

The relationship between a common in-group identity and intragroup behavior is also likely to be mediated by further variables. For instance, group-based trust has been identified as an important mediator for the link between a common in-group identity and cooperation (Brewer, 2000). Furthermore, a shared group membership may create reciprocity which also fosters cooperation (Kramer et al., 1996).

This list of possible mediators is not exhaustive. However, the identification of specific mediators for each context–outcome relationship indicates the heuristic value that the model has for future research on mediators between contact and intergroup relations.

6.2.3 Moderator variables

Some moderator effects also need to be discussed, especially with regard to behavioral outcomes following contact under salient categorization. As research from a social identity perspective has shown, intergroup contact can initiate social comparisons between groups which fuel intergroup bias, and even conflict (Mullen et al., 1992). However, research on the Contact Hypothesis has provided evidence that category salience during contact reduces bias, and even fosters cooperation (for an overview see Brown & Hewstone, 2005). In their original model, Hewstone and Brown (1986) have argued that intergroup differentiation may be the key for understanding this apparent contradiction. When positive distinctiveness can be achieved because groups provide different areas of expertise that are mutually respected, positive intergroup relations are likely to result. However, if both groups try to achieve positive distinctiveness on the same dimension, intergroup differentiation will lead to competition between groups. Unfortunately, relatively little research is available on the idea of mutual intergroup differentiation.

From the perspective of the IPM, characteristics of the superordinate category may also moderate the relationship between subgroup categorization and intergroup outcomes (see Waldzus et al., 2003). Since the prototype of the superordinate category provides the reference standard for subgroup comparisons, its characteristics should influence whether subgroups can project their in-group attributes to the superordinate level. For instance, a vague or complex prototype at the superordinate level should inhibit in-group projection because in-group attributes can no longer be regarded as the only defining characteristics (see also Chapter 1.3.3).

In the context of mergers and acquisitions, Giessner (2004) found that a categorization as different subgroups led to more negative attitudes and less willingness to cooperate in the future when a prior cooperative encounter had failed. Thus, prior intergroup experiences (in terms of success or failure) also seem to moderate the relationship between categorization and intergroup outcomes (see also Pettigrew, 1998). In sum, a number of moderator effects need to be investigated in future research in order

to understand when a subgroup representation is particularly likely to lead to intergroup prosocial behaviors between workgroups.

Regarding contact under “optimal” conditions, the effects of different contact conditions on prosocial behavior seem to be dependent on further variables. For instance, in Study 1, an interaction effect of prosocial group norm and workgroup identification on helping behavior was obtained. Workgroup members showing a higher level of workgroup identification acted in accordance with a prosocial group norm and reported a higher level of helping behavior toward members of another workgroup.

6.2.4 Temporal sequence of categorization levels

The Context-specific Contact Model suggests that different forms of contact lead to different kinds of prosocial behavior. Because most organizations may want to encourage both interpersonal and intergroup prosocial behavior between workgroups, and eventually create a common in-group identity and intragroup behavior, it would be informative to know the best possible order of contact contexts and related categorization levels. Pettigrew’s idea that decategorization, followed by categorization and recategorization would achieve the best results following intergroup contact, has hardly been investigated. Although findings from Study 2 indicate that this “ideal” sequence of categorization may be effective in creating intergroup cooperation, results from the presented longitudinal analysis are only preliminary and need to be replicated with a much larger sample. Therefore, alternative sequences cannot be rejected and may be similarly useful.

6.3 Implications for Future Research

Based on the limitations of the presented research, some areas for future research have already been pointed out (see also Chapters 3.4, 4.4 and 5.4). Therefore, in the following section I will mainly outline ways in which the proposed model can contribute to future research on intergroup contact and prosocial behavior between organizational groups.

The Context-specific Contact Model is the first model that explicitly refers to prosocial behavior/OCB between workgroups. So far, models of OCB refer to a rather unspecific target with regard to the group memberships of the provider and beneficiary. However, as the workflow is heavily dependent on interactions between workgroups (e.g., McCann & Ferry, 1979), antecedents of prosocial behavior between workgroups need to be focused on more carefully. Because processes within groups cannot simply be generalized to intergroup relations, the presented model extends previous OCB research to another important domain, relations between workgroups.

The model also extends previous research on contact-categorization models from the reduction of negative attitudes to the facilitation of prosocial behavior between groups. In organizations, as in other applied contexts, the reduction of negative attitudes between groups can only be the first step toward positive intergroup relations. Positive

interactions need to be fostered between workgroups in order to create positive experiences and productivity in organizations. Positive interaction between groups is a vast field for future research (Van Knippenberg, 2003), and contact-categorization models can make a considerable contribution.

By defining three contact contexts that are typically encountered in organizational settings, I propose a more focused approach to contact-categorization research. Although the CIIM (Gaertner & Dovidio, 2000) suggests a multitude of variables that are all thought to impact on categorization processes and outcomes, it does not relate these variables in a systematic way to categorization processes and their consequences for intergroup outcomes. However, the presented findings and research by Brown and Hewstone (2005) suggest that the context in which contact takes place needs to be considered more carefully in order to predict outcomes at different levels of categorization.

With regard to the proposed model, more research is needed to address the categorization processes identified as the main cognitive mediators. Additional affective and cognitive processes could also shed more light on the differential effects of informal, work-related, and “optimal” contact on different forms of prosocial behavior between workgroups. As pointed out before, a search for moderator variables is also necessary in order to know the conditions under which positive outcomes can be expected.

6.4 Practical Implications

For the management of relations between workgroups, the presented research findings and the proposed model suggest that contact can be a valuable tool. However, analyses also point out that the context in which contact takes place has important implications for the outcomes that can be achieved. While the best way to promote prosocial behavior and positive attitudes between workgroups seems to be contact under “optimal” conditions, this is also the most difficult solution to implement. It will likely take considerable time and effort to create (a) opportunities for contact between workgroups, (b) a perception of goal interdependence, (c) favorable group norms, (d) equal status, and (e) the support of workgroup managers. The more of these contact conditions are realized, the stronger should the perception of a common identity as an organization be, which will foster intragroup outcomes, both in the form of more prosocial behavior and more positive attitudes.

Interestingly, the impact of “optimal” contact conditions on intergroup relations also points to the importance of intragroup relations. The promotion of prosocial behavior between workgroups starts within the workgroups themselves. Workgroup managers can promote intergroup cooperation by openly supporting positive interactions. In addition, social identity research shows that leadership can have a strong normative influence in a group, especially when the leader is perceived to represent the group prototype well (Haslam & Platow, 2001; Van Knippenberg & Hogg, 2003; Van

Knippenberg, Van Knippenberg, De Cremer, & Hogg, 2004). Prosocial norms within a workgroup can facilitate cooperation and helping behavior shown toward other workgroups, particularly if workgroup members identify highly with their group. Because attachment to a group is in part dependent on the satisfaction of members with their group membership (Mael & Ashforth, 1992), workgroups themselves provide the basis for the translation of group-level contact conditions into subsequent prosocial behavior.

Since intergroup contact under “optimal” conditions is likely to be the ideal rather than the standard way of promoting positive relations between workgroups, other contact contexts may initially be utilized to facilitate specific forms of prosocial behavior. In this regard, it is important to analyze whether individual-directed or group-directed forms of prosocial behavior/OCB need to be strengthened. Individual-directed OCB, such as interpersonal helping behavior, is more likely fostered during informal contact between members of different workgroups, for instance during networking activities. On the other hand, group-directed OCBs, such as conscientiousness and civic virtue, are more likely encouraged by work-related intergroup contact, for instance in workshops or regular meetings. While OCB-I may be more important for internal service providers who regularly receive requests for help, OCB-O may be more conducive for the management of a permanent workgroup interface.

This notion seems to suggest that the potential of informal contact to improve the workflow is limited to interactions at the interpersonal level, with little generalization to intergroup behavior. However, it needs to be noted that research has shown that OCB-I is more strongly related to performance than OCB-O (Podsakoff et al., 1997; Podsakoff & MacKenzie, 1994). Since results indicated that work-related contact is weakly associated with OCB-I, and not at all with informal contact, providing employees from different workgroups with opportunities for informal contact can be a valuable tool for the management of intergroup relations. Furthermore, extended (or indirect) contact effects may also lead to a larger impact of informal contact than is obvious at first. Extended contact, i.e. knowing an in-group member with out-group friends, has been shown to reduce intergroup bias (Wright et al., 1997), especially with regard to the cognitive component of prejudice (Paolini et al., 2007). Future research needs to determine whether extended contact can also improve prosocial behavior between groups, for instance by creating a prosocial group norm.

6.5 Conclusion

In conclusion, relations between workgroups can be fruitfully analyzed from an intergroup contact and social identity perspective (see also Richter et al., 2006). Thirty years ago, Brown (1978) provided evidence that social identity processes lead organizational groups to engage in intergroup competition even to the point where individual wage losses were more acceptable than a loss in group status. Since then, models based on SIA and ICT have mainly attempted to reduce such competition and

intergroup bias. While it is important to ask how we can prevent subgroups to “divide and fall”, we also need to ask how we can encourage organizational groups to “unite and stand together”, so that prosocial behavior becomes the norm rather than an exception (De Dreu, 2008; Van Knippenberg, 2003; West, 2007), particularly in times of change and uncertainty.

Initially, the presented research examined whether the CIIM (Gaertner & Dovidio, 2000) can provide answers how to foster more positive attitudes and prosocial behavior between workgroups. The obtained findings support the CIIM with regard to intergroup cooperation as an outcome variable. When individual- and group-level contact conditions are present, a common in-group representation is increased, which leads to better intergroup cooperation between workgroups. The path from contact under “optimal” conditions to intergroup cooperation is also stronger than the reversed path.

However, results for intergroup bias and helping behavior indicate that the CIIM needs to be extended in a number of important ways. First, moderator effects, for instance as suggested by the IPM (Mummendey & Wenzel, 1999) and the Self-Categorization Model of Group Norms (Terry & Hogg, 1996), need to be taken into account. Second, findings indicate that contact has a stronger impact on outcome variables when the level of categorization that is made salient in a specific contact context matches the categorization level of the outcome variable. For instance, informal contact encourages interpersonal prosocial behavior, such as helping an out-group member. Work-related intergroup contact, on the other hand, promotes group-directed forms of prosocial behavior, such as conscientiousness and civic virtue toward another workgroup. The proposed model that integrates informal, work-related and contact under “optimal” conditions provides a starting point for a more focused research on prosocial behavior between workgroups.

In sum, “uniting” workgroups to “stand together” is not an easy endeavor since social categorization is a persistent feature of our cognitive system. However, the same processes that lead to competition and negative attitudes may create the basis for positive interactions when combined with intergroup contact in different contexts. Providing members of different workgroups with opportunities for informal, work-related, and eventually “optimal” intergroup contact may create positive attitudes and prosocial behavior, between employees, workgroups, and ultimately within the organization.

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Appendix 1: Interview Guide (Study 1)
Complete German Version



Protokollbogen:
Interview der Abteilungsleiter

Interviewer: _____

Abteilung: _____

Datum/Zeit: _____

Ort: Ruhig Eigener Raum Störungen? _____

Anmerkungen:



1. Instruktionen Einstiegsspiel

Bei diesem Spiel möchte ich Sie bitten, sich vorzustellen, dass **Sie und eine andere Person einander zufällig zugeteilt** wurden. Diese Person ist jemand, den bzw. die Sie **nicht kennen** und auch in Zukunft nicht treffen werden. Sowohl Sie als auch der oder die „Andere“ werden eine **Wahl treffen zwischen den Alternativen A, B und C**, indem Sie die entsprechende Karte nehmen. Ihre **eigene Wahl führt zu Punkten sowohl für Sie als auch für die andere Person**. Genauso wird die **Wahl der anderen Person zu Punkten für Sie und diese andere Person selbst** führen. Jeder dieser Punkte hat einen **Wert**: Je mehr Punkte Sie bekommen, desto besser für Sie, und je mehr Punkte die andere Person bekommt, desto besser für die andere Person. Hier ein **Beispiel**, wie dieses Spiel funktioniert:

Wenn Sie bei diesem Beispiel A wählen erhalten Sie 500 Punkte und die andere Person erhält 100 Punkte; wenn Sie B wählen, erhalten Sie 500 Punkte und der oder die andere ebenfalls 500 Punkte; bei Alternative C erhalten Sie 550 Punkte und die andere Person 300 Punkte. **Sie sehen also, dass Ihre Wahl sowohl Ihre eigene Punktzahl als auch die Punktzahl der anderen Person beeinflusst.**

Bitte denken Sie daran, dass es **keine richtigen oder falschen Antworten** gibt – wählen Sie diejenige **Alternative aus, die Ihnen am meisten zusagt, aus welchen Gründen auch immer**. Denken Sie bitte auch daran, dass die **Punkte einen Wert haben**: Je mehr Punkte Sie sammeln, desto besser ist es für Sie. Aus der Sicht des anderen Mitspielers ist es genauso, je mehr Punkte er oder sie bekommt, desto besser ist es für sie bzw. ihn.



Durchgänge									
Antwort	1	2	3	4	5	6	7	8	9
A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

- | | |
|-------------------------------------------------|----------------------------------------------|
| <input type="checkbox"/> Betriebsrat | <input type="checkbox"/> Logistik |
| <input type="checkbox"/> Datenverarbeitung | <input type="checkbox"/> Marketing |
| <input type="checkbox"/> Einkauf | <input type="checkbox"/> Organisation |
| <input type="checkbox"/> Einkaufsteuerung | <input type="checkbox"/> Personalwesen |
| <input type="checkbox"/> Finanzen | <input type="checkbox"/> Produktion |
| <input type="checkbox"/> Informationsmanagement | <input type="checkbox"/> Qualitätsmanagement |
| <input type="checkbox"/> Juristisches Referat | <input type="checkbox"/> Unternehmensplanung |
| <input type="checkbox"/> Kommunikation | <input type="checkbox"/> Vertriebssteuerung |
| <input type="checkbox"/> Kundenservice | <input type="checkbox"/> Verwaltung |
| <input type="checkbox"/> Werbung | |



2. Fragen zu Ihrer Abteilung:

- (1) Wie viele Mitarbeiter/innen arbeiten derzeit in Ihrer Abteilung?
- (2) Anzahl Frauen?
- (3) Anzahl Männer?
- (4) Anzahl Mitarbeiter/innen mit Ausbildung als höchsten Abschluss?
- (5) Anzahl Mitarbeiter/innen mit Uni/ FH-Abschluss?
- (6) Wie lange gibt es diese Abteilung schon?
- (7) Seit wann sind Sie Abteilungsleiter/in?

3. Wettbewerb

- (1) Wie stark steht Ihre Abteilung im Wettbewerb mit anderen Abteilungen innerhalb [des Unternehmens]?
- (2) Wie wichtig ist Konkurrenz zu anderen Abteilungen für das Vorankommen Ihrer Abteilung?
- (3) Wie wichtig ist Kooperation mit anderen Abteilungen für das Vorankommen Ihrer Abteilung?
- (4) Wie wichtig ist Konkurrenz innerhalb [des Unternehmens] für das Vorankommen des Unternehmens?
- (5) Wie wichtig ist Kooperation innerhalb [des Unternehmens] für das Vorankommen des Unternehmens?
- (6) Wie stark ist Ihrer Meinung nach das sog. „Abteilungs- oder Bereichsdenken“ [im Unternehmen] ausgeprägt?

4. Status

- (1) Wie angesehen ist Ihre Abteilung im Unternehmen?
- (2) Ist das Ansehen, dass Ihre Abteilung im Unternehmen hat gerechtfertigt, zu niedrig oder zu hoch?
- (3) Wird sich das Ansehen Ihrer Abteilung in absehbarer Zeit verbessern/verschlechtern?
- (4) **Ranking der Bereiche**



Abteilungsgröße: _____

Frauen: _____

Männer: _____

Ausbildung: _____

Uni/FH: _____

Abteilung: _____

Abteilungsleiter/in: _____

sehr stark stark etwas wenig sehr wenig

sehr wichtig wichtig mittel unwichtig sehr unwichtig

sehr wichtig wichtig mittel unwichtig sehr unwichtig

sehr wichtig wichtig mittel unwichtig sehr unwichtig

sehr wichtig wichtig mittel unwichtig sehr unwichtig

sehr stark stark etwas wenig sehr wenig

sehr durchschnittlich wenig

zu hoch gerechtfertigt zu niedrig

verbessern gleich bleiben verschlechtern



5. Typikalität

- (1) Was macht eine typische Abteilung [in diesem Unternehmen] aus?
- (2) Wie typisch ist Ihre Abteilung für [das Unternehmen]?

6. Permeabilität

- (1) Ist es möglich, dass Mitarbeiter einer anderen Abteilung in Ihrer Abteilung anfangen? Wie häufig?
- (2) Ist es möglich, dass Mitarbeiter Ihrer Abteilung zu einer anderen Abteilung innerhalb [des Unternehmens] gehen? Wie häufig?
- (3) Gibt es Möglichkeiten für Mitarbeiter/innen anderer Abteilung für eine gewisse Zeit in Ihrer Abteilung mitzuarbeiten? Welche (Rotation, Praktikum, Projekte)?

7. Erfahrungen bei der Zusammenarbeit mit anderen Abteilungen?

- (1) Mit wie vielen Abteilungen aus Ihrem eigenen Bereich arbeitet Ihre Abteilung regelmäßig zusammen? Wie viele Abteilungen aus anderen Bereichen?
- (2) Was sehen Sie generell als Hindernisse bei der Zusammenarbeit mit anderen Abteilungen?
- (3) Was würden Sie sich von anderen Abteilungen wünschen?
- (4) Was sorgt Ihrer Meinung nach für eine gute Zusammenarbeit mit anderen Abteilungen?
- (5) Wie oft unterstützen Sie in der Regel Ihre Mitarbeiter bei der Zusammenarbeit mit anderen Abteilungen?
- (6) Wenn es Probleme bei der Zusammenarbeit mit einer anderen Abteilung gibt, wie häufig unterstützen Sie dann Ihre Mitarbeiter?
- (7) Wie sinnvoll finden Sie abteilungsübergreifende Veranstaltungen, um die Zusammenarbeit zu verbessern?



sehr zum Teil gering

oft manchmal selten nie

oft manchmal selten nie

Eigener Bereich: _____ Anderer Bereich: _____

Hindernisse: _____

Wünsche: _____

Hilfreich: _____

immer häufig manchmal selten nie

immer häufig manchmal selten nie

sehr sinnvoll manchmal sinnvoll unsinnig

Grund: _____

Appendix 2: Social Value Orientation Matrices

Durchgang	Alternative	Sie	Anderer
Beispiel	A	500	100
	B	500	500
	C	550	300
1	A	560	300
	B	500	500
	C	500	100
2	A	520	520
	B	520	120
	C	580	320
3	A	50	100
	B	560	300
	C	490	490
4	A	560	300
	B	500	500
	C	490	90
5	A	500	500
	B	500	100
	C	570	300
6	A	510	510
	B	560	300
	C	510	110
7	A	550	300
	B	500	100
	C	500	500
8	A	480	100
	B	490	490
	C	540	300
9	A	500	100
	B	500	500
	C	550	300

Appendix 3: Employee Survey (Study 1)
Complete German Version



Wissenschaftliche Befragung zur Zusammenarbeit in Unternehmen

Sehr geehrte Mitarbeiterin, sehr geehrter Mitarbeiter,

im Rahmen einer Studie der Universität Koblenz-Landau möchten wir Sie zu Ihren Erfahrungen bei der Zusammenarbeit mit Kollegen und Kolleginnen der eigenen und anderer Abteilungen befragen. Bitte nehmen Sie sich **etwa 20 Minuten** Zeit zum Ausfüllen des Fragebogens. Sie unterstützen hierdurch das Bestreben [Ihres Unternehmens] die Zusammenarbeit innerhalb des Unternehmens konstruktiv zu gestalten.

Wir sichern Ihnen zu, im Rahmen der von uns durchgeführten Befragung die folgenden Grundsätze zu beachten:

- Die Befragung erfolgt **anonym**, also ohne Namens- und Absenderangabe.
- Ihre Beteiligung an der Befragung ist **freiwillig**.
- Die Auswertung der Fragebögen erfolgt **streng vertraulich** durch wissenschaftliche Mitarbeiter/innen der Universität Koblenz-Landau, die der psychologischen **Schweigepflicht** unterliegen.
- Die Daten werden bei der Auswertung nicht individualisiert. Das Auswertungsergebnis wird nur solche Daten enthalten, die **keinen Personenbezug** zulassen.
- Die Auswertungsergebnisse werden so aufbereitet, dass **keine Rückschlüsse auf Einzelpersonen** möglich sind.
- Die Auswertungen werden [dem Unternehmen] in einem **zusammenfassenden Bericht** zur Verfügung gestellt. Es wird sichergestellt, dass die Teilnehmer der Befragung über die Ergebnisse der Befragung informiert werden.

Wichtige Hinweise zum Ausfüllen

In den folgenden Fragebogenabschnitten werden Sie hauptsächlich gebeten anzugeben, wie stark Sie einer bestimmten Aussage zustimmen (s. Beispiel). Ihre Antwort können Sie durch **Ankreuzen** des entsprechenden Kreises angeben. Wenn Sie Ihre **Antwort ändern** möchten, dann streichen Sie bitte Ihre vorherige Antwort gut erkennbar durch und kreuzen Sie die geeignete Antwort an. **Vermeiden Sie bitte unbedingt mehrere Kreuze in einer Antwortzeile sowie Kreuze außerhalb der Kästchen.**

Beispiel:

	Stimme überhaupt nicht zu			Stimme vollständig zu	
	--	-	0	+	++
Ich fahre immer mit dem Auto zur Arbeit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Bitte achten Sie darauf, dass Sie **alle Fragen beantworten**. Es geht uns bei den Fragen um Ihre ganz persönliche Meinung. Daher gibt es keine richtigen oder falschen Antworten. Aus diesem Grund ist es uns auch wichtig, dass Sie den Fragebogen selbständig ausfüllen, ohne sich mit Kollegen/ Kolleginnen über die Antworten zu beraten. Ihre ganz persönliche Meinung und Erfahrung ist uns wichtig.

Bitte werfen Sie den ausgefüllten Fragebogen in die Sammelbox in Ihrer Abteilung!

Bei Fragen wenden Sie sich bitte an:

Miriam Koschate, Wissenschaftliche Mitarbeiterin
Universität Koblenz-Landau, Psychologie des Arbeits- und Sozialverhaltens
Tel.: 06341-280 224, E-Mail: koschate@uni-landau.de



In welcher Abteilung arbeiten Sie?

(Bitte Abteilungskürzel angeben, z.B. VS-SE)

	Stimme überhaupt nicht zu			Stimme vollständig zu	
	--	-	0	+	++
Ich sehe mich selbst als Mitarbeiter/in dieser Abteilung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich identifiziere mich mit dieser Abteilung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich bin froh darüber, ein/e Mitarbeiter/in dieser Abteilung zu sein.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich fühle mich mit anderen Mitarbeitern dieser Abteilung stark verbunden.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In diesem Unternehmen hat man den Eindruck, dass alle zu einer großen Gemeinschaft gehören.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In diesem Unternehmen hat man den Eindruck, dass alle zu verschiedenen Gruppen gehören.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In diesem Unternehmen hat man den Eindruck, dass jeder für sich ist und nicht Teil einer bestimmten Gruppe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In diesem Unternehmen hat man den Eindruck, dass alle zu verschiedenen Gruppen gehören, die Teil einer großen Gemeinschaft sind.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich sehe mich selbst als Mitarbeiter/in [des Unternehmens].	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich identifiziere mich mit [dem Unternehmen].	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich bin froh darüber, ein/e Mitarbeiter/in[des Unternehmens] zu sein.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich fühle mich mit anderen Mitarbeitern [des Unternehmens] stark verbunden.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich wäre sehr glücklich darüber, wenn ich meine weitere berufliche Laufbahn in diesem Unternehmen verbringen könnte.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich spreche gerne über dieses Unternehmen mit Menschen außerhalb.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich fühle mich <u>nicht</u> als „Teil der Familie“ in diesem Unternehmen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich fühle mich diesem Unternehmen <u>nicht</u> emotional verbunden.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich fühle mich diesem Unternehmen <u>nicht</u> besonders zugehörig.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich denke, dass ich einem anderen Unternehmen genauso verbunden sein könnte wie diesem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dieses Unternehmen hat eine große persönliche Bedeutung für mich.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Probleme dieses Unternehmens sind auch meine eigenen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Die folgenden Fragebogenabschnitte beziehen sich auf Ihren Kontakt zu Mitarbeitern anderer Abteilungen im Unternehmen. **Bitte denken Sie beim Ausfüllen an eine Abteilung, mit der Ihre eigene Abteilung sehr häufig zu tun hat.** Stellen Sie sich kurz vor, wie diese Zusammenarbeit im Allgemeinen verläuft und beantworten Sie bitte dann erst die Fragen. **Denken Sie beim Beantworten der Fragen immer an die gleiche Abteilung!** Schreiben Sie am besten den Namen dieser Abteilung auf ein Stück Papier und legen Sie es beim Beantworten der Fragen neben sich als Gedächtnisstütze.

Wo befindet sich diese Abteilung im Vergleich zu Ihrer eigenen Abteilung?

- Gleiches Büro
 Gleiches Stockwerk
 Gleiches Gebäude
 Gleicher Standort
 Anderer Standort

Die Beziehungen zwischen dieser Abteilung und meiner Abteilung sind im Allgemeinen:

- sehr gut
 gut
 mittelmäßig
 problematisch
 sehr problematisch

Diese Abteilung gehört...
 zum gleichen Bereich
 zu einem anderen Bereich

	Stimme überhaupt nicht zu			Stimme vollständig zu	
	--	-	0	+	++
Ich muss oft mit Mitarbeitern dieser Abteilung zusammenarbeiten.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich muss eng mit Mitarbeitern dieser Abteilung zusammenarbeiten, um meine Aufgabe richtig ausführen zu können.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich arbeite mit dieser Abteilung häufiger zusammen als die anderen aus meiner Abteilung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Über das Ergebnis der Zusammenarbeit erhalten wir eine Rückmeldung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wir sind gemeinsam für die Ergebnisse der Zusammenarbeit verantwortlich.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Über den Verlauf der Zusammenarbeit erhalten wir regelmäßig eine Rückmeldung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wir erhalten regelmäßig Informationen darüber, was von unserer Zusammenarbeit erwartet wird.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mit Mitarbeitern dieser Abteilung treffe ich mich häufig während meiner Pausen/ in der Mittagszeit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich habe häufig Kontakt zu Mitarbeitern dieser Abteilung in meiner Freizeit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mit Mitarbeitern dieser Abteilung habe ich gemeinsam an Veranstaltungen [des Unternehmens] teilgenommen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter dieser Abteilung sind gut erreichbar (Telefon, E-Mail, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter/innen meiner Abteilung sind hilfsbereit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Bitte denken Sie beim Ausfüllen an die gleiche Abteilung wie in den Abschnitten zuvor!	Stimme überhaupt nicht zu			Stimme vollständig zu	
	--	-	0	+	++
Es herrscht ein freundlicher Umgang zwischen unserer und dieser Abteilung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unsere Abteilung erkennt die fachliche Kompetenz dieser Abteilung an.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Relevante Informationen werden zwischen unserer und dieser Abteilung offen ausgetauscht.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wenn ein Konflikt zwischen unserer und dieser Abteilung auftritt, wird er schnell beigelegt.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insgesamt ist es schwierig, Kontakt zu dieser Abteilung zu bekommen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter unserer und dieser Abteilung kritisieren sich häufig gegenseitig.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unsere Abteilung erhält manchmal absichtlich irreführende Informationen von dieser Abteilung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Probleme bei abteilungsübergreifenden Aufgaben werden von unserer und dieser Abteilung als gemeinsame Probleme wahrgenommen, die gelöst werden sollten.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Mitarbeiter dieser Abteilung sind Kollegen und nicht unsere Konkurrenten.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wenn es Unstimmigkeiten zwischen unserer und dieser Abteilung gibt, dann können sie fast immer behoben werden.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wenn Probleme zwischen dieser und unserer Abteilung entstehen, dann werden Lösungen gesucht, die für alle Beteiligten annehmbar sind.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter dieser und unserer Abteilung tauschen ihre Ideen offen miteinander aus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diese Abteilung versäumt es häufig, wichtige Informationen an unsere Abteilung weiterzugeben.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Bitte denken Sie beim Ausfüllen an die gleiche Abteilung wie im Abschnitt zuvor!

	Stimme überhaupt nicht zu			Stimme vollständig zu	
	--	-	0	+	++
Ich informiere frühzeitig, wenn ich einen Termin für ein Projekt mit dieser Abteilung nicht einhalten kann.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich informiere mich über neue Entwicklungen in dieser Abteilung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soweit es möglich ist, helfe ich Mitarbeiter/innen dieser Abteilung, wenn diese mit Arbeit überlastet sind.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich beteilige mich regelmäßig und aktiv an Besprechungen mit dieser Abteilung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich ermuntere Mitarbeiter/innen dieser Abteilung, wenn diese niedergeschlagen sind.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich wirke bei auftretenden Meinungsverschiedenheiten ausgleichend auf Mitarbeiter/innen dieser Abteilung ein.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich ergreife die Initiative, um eine Zusammenarbeit mit dieser Abteilung anzuregen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich halte die aufgestellten Regeln bei gemeinsamen Projekten mit dieser Abteilung immer ein.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich arbeite an gemeinsamen Projekten mit dieser Abteilung genauso sorgfältig wie an Projekten meiner eigenen Abteilung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich teile gerne mein Fachwissen mit den Mitarbeiter/innen der anderen Abteilung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich halte Termine bei gemeinsamen Projekten mit dieser Abteilung immer ein.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich mache innovative Vorschläge zur Verbesserung der Qualität in der Zusammenarbeit mit dieser Abteilung.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Bitte geben Sie Ihre Antworten sowohl für die Abteilung, mit der Sie häufig zu tun haben (= „Andere Abteilung“), als auch für Ihre eigene Abteilung ab.

Bitte denken Sie beim Ausfüllen an die gleiche Abteilung wie in den Abschnitten zuvor!	Andere Abteilung					Ihre eigene Abteilung				
	Stimme überhaupt nicht zu		0	Stimme vollständig zu		Stimme überhaupt nicht zu		0	Stimme vollständig zu	
	--	-	0	+	++	--	-	0	+	++
Mitarbeiter/innen dieser Abteilung sind kontaktfreudig .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter/innen dieser Abteilung bleiben unter sich .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter/innen dieser Abteilung sind intelligent .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter/innen dieser Abteilung sind fleißig .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter/innen dieser Abteilung sind zuverlässig .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter/innen dieser Abteilung sind gut organisiert .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter/innen dieser Abteilung sind kompetent .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mitarbeiter/innen dieser Abteilung sind kreativ .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diese Abteilung ist [im Unternehmen] sehr angesehen .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diese Abteilung hat viele Merkmale, die für [das Unternehmen] typisch sind.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Wie häufig haben Sie dieses Jahr an **abteilungsübergreifenden Veranstaltungen** teilgenommen (z.B. Seminare, Projektgruppen, Feiern)? _____

- Seit wie vielen Jahren arbeiten Sie [im Unternehmen]?
- | | |
|----------------------------------------------|------------------------------------------|
| <input type="checkbox"/> Weniger als 5 Jahre | <input type="checkbox"/> 16 bis 20 Jahre |
| <input type="checkbox"/> 5 bis 10 Jahre | <input type="checkbox"/> 21 bis 25 Jahre |
| <input type="checkbox"/> 11 bis 15 Jahre | <input type="checkbox"/> Über 25 Jahre |

Bitte teilen Sie uns Ihre Anmerkungen zu dieser Studie mit:

Stellen Sie bitte sicher, dass Sie alle Fragen beantwortet haben.

Herzlichen Dank für Ihre Unterstützung!

**Appendix 4: Sample Questionnaire
(Study 2),
Complete German Version**

Liebe EmPra-Teilnehmerin, lieber EmPra-Teilnehmer,

in unserer Studie beschäftigen wir uns mit der Interaktion zwischen EmPra-Gruppen...

...und daher benötigen wir Deine Unterstützung!

Wir führen eine Längsschnittstudie durch und bitten Dich deshalb an allen Erhebungszeitpunkten teilzunehmen.

2 Kino-Gutscheine werden **nach jeder Befragung** unter den Teilnehmer/innen verlost

3 Amazon-Büchergutscheine im Wert von jeweils **20 Euro** werden unter den Teilnehmer/innen verlost, die **an allen Befragungen** teilnehmen

Zum Fragebogen:

Als Bestandteil unserer Studie wirst Du im Fragebogen dazu aufgefordert, die Interaktion mit bestimmten EmPra-Gruppen einzuschätzen. Damit Du das nicht für alle EmPra-Gruppen machen musst, haben wir eine Zufallsauswahl von drei Gruppen getroffen, die für jede EmPra-Gruppe unterschiedlich ist, innerhalb der einzelnen EmPra-Gruppen aber gleich. Damit möchten wir erreichen, dass jede EmPra-Gruppe eingeschätzt wird, wir aber trotzdem einen Gruppenmittelwert bilden können.

Dies schränkt Deine Anonymität leider etwas ein, denn wir können die Fragebögen dadurch einzelnen EmPra-Gruppen zuordnen, jedoch nicht einzelnen Personen! Zusätzlich möchten wir Dir versichern, dass wir kein Interesse daran haben, die Antworten einzelner Personen herauszufiltern und zudem alle Daten streng vertraulich behandeln.

Bitte fülle den Fragebogen **innerhalb einer Woche** aus. Dazu brauchst Du jeweils nur **etwa 10 Minuten**. Du kannst den Fragebogen entweder sofort ausfüllen und abgeben oder Deinem EmPra-Leiter/Deiner EmPra-Leiterin beim nächsten Treffen geben.

Um Deine Fragebögen einander zuordnen und anschließend die Verlosungen durchführen zu können, benötigen wir **einen Code**, den Du an allen Zeitpunkten angeben solltest. Wie sich der Code zusammensetzt, erfährst Du jeweils im letzten Abschnitt des Fragebogens.

Vielen Dank für Deine Unterstützung!

Deine AG Sozialpsychologie:

Miriam Koschate & Ottilia Klipsch



Bitte beantworte die Fragen ehrlich und möglichst spontan!

	Stimme überhaupt nicht zu			Stimme vollständig zu	
	--	-	0	+	++
Im vierten Semester hat man zurzeit den Eindruck, dass alle zu <u>verschiedenen EmPra-Gruppen</u> gehören, die Teil einer <u>großen Gemeinschaft</u> sind.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Im vierten Semester hat man zurzeit den Eindruck, dass alle zu <u>verschiedenen EmPra-Gruppen</u> gehören.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Im vierten Semester hat man zurzeit den Eindruck, dass <u>jeder für sich</u> ist.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Im vierten Semester hat man zurzeit den Eindruck, dass alle zu <u>einer großen Gemeinschaft</u> gehören.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wenn ich an mein Semester denke, dann sehe ich <u>eine große Gruppe</u> , die aus <u>mehreren EmPra-Gruppen</u> besteht, vor mir.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wenn ich an mein Semester denke, dann sehe ich die <u>verschiedenen EmPra-Gruppen</u> vor mir.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wenn ich an mein Semester denke, dann sehe ich <u>eine große Gruppe</u> vor mir.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alle Studierende des vierten Semesters sitzen in einem Boot.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Man gehört genauso zu seiner EmPra-Gruppe wie man zum Semester gehört.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die EmPra-Gruppen sind das wichtigste Unterscheidungsmerkmal in meinem Semester.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die EmPra-Gruppen sind ganz verschieden, so dass es Unsinn ist, so zu tun als wären alle eine große Gemeinschaft.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Betonung des gemeinsamen Semesters verwischt doch nur die interessanten Eigenschaften der EmPra-Gruppen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Die Betonung der EmPra-Gruppen spaltet doch nur das Semester.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Es sollte wirklich egal sein, zu welcher EmPra-Gruppe man gehört, so lange man Teil des Semesters ist.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

EmPra-Gruppe	Neu Gelerntes tauschen wir mit dieser Gruppe aus.	Wir lösen Probleme zwischen unseren Gruppen gemeinsam.	Meine Gruppe und diese Gruppe helfen sich gegenseitig aus.	Ich mutere Mitglieder dieser Gruppe auf, wenn sie niedergeschlagen sind.	Bei Meinungsverschiedenheiten mit dieser Gruppe wirke ich vermittelnd.	Ich helfe Mitgliedern dieser Gruppe bei persönlichen Problemen.	Wenn ich etwas weiß, das dieser Gruppe helfen kann, dann teile ich das Wissen gerne.
RO1 (Vor- und Nachnamen der 5 Gruppenmitglieder)	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
MM3 (Vor- und Nachnamen der 5 Gruppenmitglieder)	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
TR2 (Vor- und Nachnamen der 5 Gruppenmitglieder)	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5

EmPra-Gruppe	Diese Gruppe hat Interesse an Kontakt zu anderen Gruppen.	Dieser Gruppe ist der Kontakt zu anderen Gruppen wichtig.	Es ist leicht, mit dieser Gruppe in Kontakt zu kommen.	Diese EmPra-Gruppe ist aufgeschlossen.	Diese EmPra-Gruppe ist abweisend.	Diese EmPra-Gruppe ist offen für Ideen.	Diese EmPra-Gruppe ist langweilig.
RO1 (Vor- und Nachnamen der 5 Gruppenmitglieder)	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
MM3 (Vor- und Nachnamen der 5 Gruppenmitglieder)	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
TR2 (Vor- und Nachnamen der 5 Gruppenmitglieder)	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5
Eigene EmPra-Gruppe	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5	0 1 2 3 4 5

Achtung: Bitte kreuze „0“ an, wenn Du einem Item „überhaupt nicht zustimmst“ und „5“, wenn Du einem Item „vollständig zustimmst“

	Stimme überhaupt nicht zu			Stimme vollständig zu	
	--	-	0	+	++
Meine EmPra-Gruppe ist im Allgemeinen hilfsbereit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In meiner EmPra-Gruppe wird man ermutigt, andere Gruppen zu unterstützen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich habe den Eindruck, dass die anderen aus meiner EmPra-Gruppe es nicht gerne sehen, wenn ich anderen EmPra-Gruppen helfe.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wir stehen mit den anderen Gruppen in Konkurrenz um knappe Ressourcen (z. B. Versuchspersonen, Räume,...).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Durch den EmPra-Kongress entsteht Wettbewerb zwischen den Gruppen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wenn man hört, wie weit die anderen sind, gerät man schnell unter Zeitdruck.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wenn wir den anderen EmPra-Gruppen erzählen, was wir machen, dann profitieren sie von unseren Ideen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Man muss aufpassen, dass man die eigenen Ideen nicht herschenkt.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wir haben selbst genug zu tun, und können uns nicht noch um die Probleme der anderen EmPra-Gruppen kümmern.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Anderen EmPra-Gruppen zu helfen, macht nur Sinn, wenn man sich sicher sein kann, dass diese uns auch helfen werden.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Im Vergleich zu anderen EmPra-Gruppen ist meine Gruppe sehr engagiert.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Im Vergleich zu anderen EmPra-Gruppen ist meine Gruppe sehr kompetent.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Im Vergleich zu anderen EmPra-Gruppen kommt meine Gruppe gut voran.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich würde mich als mitfühlende Person beschreiben.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ich bin oft besorgt um Menschen, denen es schlechter geht als mir.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Manchmal tun mir andere Leute, die Probleme haben, nicht besonders leid.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wenn ich mitbekomme, dass jemand ausgenutzt wird, habe ich das Gefühl, ich sollte diese Person beschützen.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Persönliche Angaben:

Geschlecht: männlich weiblich

Alter: _____ Jahre

Bitte vergessen Sie nicht, Ihren Code einzutragen!

Bitte gib den 1. Buchstaben Deines Geburtsortes an (z. B. M für München): _____

Bitte gib die 1. Ziffer der Hausnummer Deiner Eltern/Mutter an (z. B. 1 für 128): _____

Bitte gib die letzte Ziffer Deiner Matrikelnummer an (z. B. 6 bei 204220436): _____

VIELEN DANKE FÜR DEINE TEILNAHME!

LEBENS LAUF – CURRICULUM VITAE

Persönliche Angaben

Name: Miriam Koschate-Reis
Geburtsdatum: 15.11.1977
Geburtsort: Dieburg
Familienstand: verheiratet

Werdegang

08/1984 – 07/1988: Gersprenzschule, Reinheim
08/1988 – 06/1997: Albert-Einstein-Schule, Groß-Bieberau
Abschluss: Abitur
09/1997 – 07/1998: St. John's School, Leatherhead, UK
Deutschassistentin
10/1998 – 04/2004: Philipps-Universität, Marburg
Diplomstudiengang Psychologie
Abschluss: Diplom (Dipl.-Psych.)
02/2001 – 12/2001: University of Stellenbosch, Südafrika
Bachelor with Honours-Studiengang, Psychologie
Abschluss: Bachelor with Honours (BAHons)
02/2005 – heute: Universität Koblenz-Landau, Landau
Wissenschaftliche Mitarbeiterin am Fachbereich
Psychologie, Abteilung Psychologie des Arbeits- und
Sozialverhaltens