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Predictors of Change in Post-merger Identification Throughout a Merger Process:

A Longitudinal Study

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Abstract

Adopting an intergroup perspective, this research was designed to examine predictors of change in post-merger identification throughout a merger. Data were collected over three points of measurement from 157 students of a newly merged university. The first questionnaire was distributed 4 months after the implementation of the merger; the following two were distributed six months and a year thereafter. With its longitudinal design, this study replicates and extends past results by revealing predictors of change in organizational identification for members of the dominant and subordinate organization throughout a merger process. As predicted, post-merger identification increased only slowly for both members of the dominant and subordinate organization. Multilevel models for change confirmed that the predictive effect of pre-merger identification on post-merger identification for members of the dominant organization dissipates over time. The effect of ingroup typicality unexpectedly varied as a function of organizational membership and was stable over time. Perceived fairness in the merger process positively influenced post-merger identification across members of both organizations; over time the effect of fairness amplified.

(word count: 170)

Keywords: organizational and social identification, organizational merger, multilevel model for change, ingroup typicality, fairness

Predicting Changes in Post-merger Identification Throughout a Merger Process:

A Longitudinal Study

Both in profit and non-profit organizations, mergers seem to be the order of business. Merging is a strategy to be more competitive, reduce costs, create synergy, and to meet changing financial and demographic challenges. However, two-thirds of all mergers do not meet their expectations and fail, for example financially (Cartwright & Cooper, 1995; Ernst & Young, 2006). Given the prevalence of organizational mergers and the relative low success rate, it is important to understand what makes a merger succeed or fail. Problems regarding success or failure of mergers are often ascribed to resistance towards change by organizational members involved in the merger (e.g., Haunschild, Moreland, & Murrell, 1994). For example, in previous research it was shown that mergers create behavioral and psychological reactions in organizational members such as stress, turnover intentions, lower self-esteem, anxiety, and illness leading to reduced job satisfaction and increased resistance (e.g., Cartwright, 2005; Hogan & Overmyer-Day, 1994; Klendauer, Frey, & Greitemeyer, 2006; Terry, Callan, & Sartori, 1996). Besides factors describing individual reactions towards a merger, we can understand organizational members' reactions by focusing on processes arising at the group level and by considering mergers as an intergroup situation (Hogg & Terry, 2000). Problems may arise because members perceive inter-group differences (Jetten, O'Brien, & Trindall, 2002) or conflicting corporate identities (Melewar & Harrold, 2000) within the new organization. Adopting an intergroup perspective on organizational mergers (e.g., Hogg & Terry, 2000), we focus on identification processes and apply a Social Identity Approach (e.g., Ashforth & Mael, 1989; Haslam, 2001; Hogg & Terry, 2000). The Social Identity Approach (SIA), which incorporates social identity theory (Tajfel & Turner, 1986) and self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987), stresses the importance of one's belonging to different social categories (e.g., organizations). One of the

key concepts in SIA is identification with a social category. Social identification has been found to be related to the individual's role in an organizational setting in affecting attitudes towards the organization, commitment to the organization, and support for an organization (Haslam, Postmes, & Ellemers, 2003; Mael & Ashforth, 1992; Ouwerkerk, Ellemers, & de Gilder, 1999). By the same token, adjustment to a merger is indicated by the extent to which organizational members identify with the merged group (Amiot, Terry, Jimmieson, & Callan, 2006) and has been found to decrease intergroup tensions (van Knippenberg, van Knippenberg, Monden, & de Lima, 2002). This implies that the extent to which organizational members are willing and able to identify with the post-merger organization (i.e., *post-merger identification*) is a key factor for understanding acceptance of the merger and merger success. Researchers have consequently focused on factors that influence post-merger identification such as identification with the pre-merger organization (*pre-merger identification*) and perceived continuity or ingroup typicality (e.g., Bartels, Douwes, de Jong, & Pruyn, 2006; van Leeuwen, van Knippenberg, & Ellemers, 2003; van Knippenberg et al., 2002). Furthermore, it has been shown that perception of a fair outcome and treatment during the merger influences post-merger identification (Amiot, Terry, & Callan, in press; Lipponen, Olkonnen, & Moilanen, 2004). These three factors derived from an intergroup perspective have significant effects on post-merger identification.

What remains unclear is how post-merger identification changes in the course of a merger and which factors affect variability in post-merger identification at different points in the process. To wit, the procedural and temporal aspects of mergers have been previously neglected despite calls for merger research to be examined as the merger process unfolds (Cartwright & Cooper, 1994; Cartwright & Schoenberg, 2006; Seo & Hill, 2005). Systematic analyses of changes in post-merger identification and its antecedences have not been done and

only few studies have investigated social psychological processes using a longitudinal approach (Amiot et al., 2006; Amiot et al., in press).

By conducting a longitudinal field study over the course of a university merger, the focus of this paper lies on the developmental and dynamic aspect of identification. We thereby investigated patterns of change in post-merger identification over three points of measurement. Throughout the merger of two higher educational institutions, a student sample was followed over the course of one year, representing one status group affected by organizational change. That is, the present research firstly analyzes systematic change in post-merger identification during the merger process. Second, we explore whether variance in post-merger identification over time is predicted by pre-merger identification, ingroup typicality, and perceived fairness in the merger process as suggested by previous research (Amiot, et al., 2006; Bartels et al., 2006; van Knippenberg & van Leeuwen, 2001) and whether the predictive effects of these variables vary over time.

Only few mergers are merger of equals (Cartwright & Cooper, 1995; Giessner, Viki, Otten, Terry, & Täuber, 2006; van Oudenhoven & de Boer, 1995). Mostly, one merger partner is likely to be more dominant or the acquiring force. The dominant merger partner might seek to assimilate the other organization and impose its own pre-merger identity on the newly merged organization (van Knippenberg et al., 2002). This also applies to the merger at hand and we therefore can examine specific patterns of reactions towards change according to status-related organizational dominance in the merger.

When thinking about mergers, corporate mergers are most salient. However, also non-profit organizations fuse. Higher educational mergers are a special case of organizational mergers that are often characterised by their involuntary nature and that are used by authorities as a measure to restructure the higher educational sector (Harman & Harman, 2003). Over the past thirty years, mergers have become an increasingly common phenomenon

across higher education systems, making it important to apply research on mergers from an intergroup perspective to this setting, thus broadening the scope of intergroup focused merger literature.

In relation to the sample at hand, students[1] are central members of a university and are often highly identified with it (Mael & Ashforth, 1992). As members of the institution their role and functioning in the organization is likely to depend upon their post-merger organizational identification (Boen, Vanbeselaere, Hollants, & Fey, 2005). Nonetheless, different from employees within a merged organization, identity issues are considered as independent from job loss, membership loss, and changes in roles, which usually come along with a merger.

To summarize, this papers aims at examining the following research questions:

1. What are the patterns of change in post-merger identification among organizational members of the dominant and subordinate merger partner throughout a merger process?

2. Is post-merger identification related to pre-merger identification, ingroup typicality, and perceived fairness? Secondly, do these associations change across time and do these patterns differ for organizational members of the dominant versus subordinate merger partner?

Time and change in theory and practice

With this study we test how the outcome variable post-merger identification is affected by change during the merger process. This is important because mergers take time and move through different stages that affect psychological reactions towards the merger (Buono & Bowditch, 1989; Seo & Hill, 2005).

In general, time and change are fundamental aspects of human existence and pose challenges for research, both theoretically and methodologically. Temporal factors and

change are, often implicitly, included in social psychological research, for example in stereotype change research (Garcia-Marques, Santos, & Mackie, 2006) or research on group formation and development (Eisenbeiss & Otten, 2005). Nevertheless, time has rarely been included as a *theoretical* central variable (McGrath & Tschau, 2004). When time is defined as an objective and interindividually experienced concept (McGrath & Tschau, 2004) it can be understood as a contextual variable that should have substantive conceptual and methodological implication for social psychological research. Until now, most social psychological approaches entail a holochronic perspective, which means that they were formulated independent of clear assumptions about time scales and do not *explicitly* include postulates about the duration of effects. Once an effect is established, it is typically assumed to persist over time (West, Biesanz, & Kwok, 2004).

Yet, social psychology and especially research embedded in the SIA (e.g., Tajfel & Turner, 1986; Turner et al., 1987) should include the contextual nature and issues of change. Already in the original work by Tajfel (1980, 1982) the role of processes, dynamics, as well as time and its effects on the nature of psychological functioning has been stressed. He understood social categories as dynamic and continuously changing depending on situations, time points, and relevant other social categories. Individual and social significance of group membership constantly varies as Tajfel pointed out: "[…] therefore, an individual's affiliations with a group and the functional relevance of social comparison […], even with the same group, enter into a continuously changing dynamic relationship" (Tajfel, 1982, p. 15). Nevertheless *change* was a long neglected topic in social psychology research.

To understand change and short vs. long-term effects between variables, longitudinal data is essential and statistical techniques are required that tap into these changes. In the recent years the studies of growth and development as well as longitudinal design have increased in psychology. This trend led to a further improvement of statistical methods for

analyses of repeated measures (Singer & Willet, 2003) that are needed to address theoretical considerations about time and change. These techniques for longitudinal data analysis are widely used, for example in developmental psychology (Nesselroade & Baltes, 1979; Singer & Willet, 2003). When applying these methods, time and change could become the focus in social psychological research. This is especially important when dealing with an on-going merger and complicated processes that occur over several month or even years (Cartwright & Schoenberg, 2006; Citera & Rentsch, 1993). Here it is particularly indicated to take into consideration developmental processes as well as change and as a research design that accounts for these aspects. Therefore, shifting levels of dynamic variables over time serve as indicators of change processes and *time*, as a proxy for change, is an essential variable determining patterns of when and how specific psychological factors predict change during a merger (Arrow, Poole, Henry, Wheelan, & Moreland, 2004).

Post-merger identification

It is assumed that the goal of a successful merger is that the new organization serves as the basic source of identification and that members are encouraged to dis-identify with the previous organization, respectively to re-identify with the new one. However, mergers are not always implemented in a way that pre-merger organizations are fully abandoned (Malekzadeh & Nahavandi, 1990). Different degrees of collaboration like joint departments, merger with a federal structure, or with a unitary structure (e.g., Harman & Harman, 2003 for educational sector) involve different degrees of threat and challenge to pre-merger identification (see also van Knippenberg & van Schie, 2000 for different foci of identification). In line with the merger at hand, we focus on a merger with a unitary structure in which the pre-merger organizations are mainly dissolved.

Ethier and Deaux (1994) stated that for successfully maintaining an identity in a new environment, a person must develop a new ground for supporting that identity while

detaching from the old environment. With the announcement of the merger two identification related processes take place. First, organizational change triggers salient social categories and increases the salience of pre-merger identification (Giessner, 2003). Second, especially in the case of a takeover, organizational members have to dis-identifiy with the pre-merger organization (Chreim, 2002) because it is dissolved. These seemingly contradicting processes can lead to resistance towards the merger, which is often expressed by refusal to re-identify with the newly merged organization. Experimental (e.g., van Leeuwen et al., 2003) and field studies in organizations (e.g., Boen et al., 2005; Terry, Carey, & Callan, 2001; van Knippenberg et al., 2002) have shown that individuals' identification with the merged group is significantly lower than their identification with their pre-merger group. This resistance and psychological disengagement from the new organization after a merger impedes the positive effect of organizational identification. Assuming a relatively slow development of the merger process and adjustment to a merger (Buono & Bowditch, 1989; Citera & Rentsch, 1993), it is expected that post-merger identification increases relatively slowly over time.

Previous research found that members of the low-status or dominanted[2] merger organization express more negative reaction towards and accordingly less identification with the new merged group than members of the high-status or dominant organization (Terry & Callan, 1998; Terry, Carey, & Callan, 2001; Terry & O'Brien, 2001; van Knippenberg et al., 2002). We therefore expect to replicate this effect of organizational dominance on post-merger identification and assume that post-merger identification is higher for members of the dominant merger partner than for members of the subordinate merger partner.

Despite these expected mean level changes in the outcome variable, the main focus of the present study is on the prediction of changes in post-merger identification. Pre-merger identification, ingroup typicality, and perceived fairness are defined as predictors of changes in post-merger identification and assumptions concerning their predictive effects are

exemplified. Moreover, potential interaction with organizational dominance and time are discussed.

Pre-merger Identification

Regarding the relation between pre- and post-merger identification, the intergroup perspective merger literature proposes two competing assumptions inferred from the SIA. First, if the newly merged organization is perceived as a partial continuation of the former and therefore organizational identification can be transferred, this will lead to a positive relationship between pre- and post-merger identification (Bartels et al., 2006; Boen et al., 2005; Rousseau, 1998; van Knippenberg et al., 2002; van Leeuwen, 2001). Second, if the merger is perceived as a threat to identity (Branscombe, Ellemers, Spears, & Doosje, 1999) and a discontinuation of the pre-merger organization, the consequence will be a negative (or no) relationship between pre- and post-merger identification (Bartels et al., 2006). The question then is, under which conditions do we expect a perception of continuity rather than of discontinuity associated with threat.

Van Knippenberg et al. (2002) hypothesized that it is mainly the organizational dominance within the merger process that implies (dis-)continuation. The dominant merger partner will be more influential in determining and defining features, norms, and values of the newly merged organization. Thus, the dominant merger partner will show a stronger sense of continuity that will be expressed in a positive correlation between pre- and post-merger identification. The subordinate merger partner is assumed to experience the merger as more threatening. Features of the previous organization are not apparent any longer and the newly merged organization is defined according to the rules of the dominant merger partner. For members of the subordinate organization it is difficult to incorporate aspects of their former organizational identity in the new organization. They are therefore not expected to show a positive relationship between pre- and post-merger organizational identification. In line with

this, we suppose that pre-merger identification is only a significant and positive predictor of post-merger identification for members of the dominant organization.

What has not been investigated until now is whether this relation and the assumed transformation of pre-merger to post-merger identification stays stable throughout the merger process. It can be assumed that perceptions of continuity and threats change as the merger process develops. Imagine that the dominant merger partner expects to take over the other organization. As the merger process evolves, the dominant partners realize that the subordinate group also influences and shapes the new organization. Hence, they no longer perceive the newly merged organization as a continuation but rather as a threat and therefore pre-merger identification should not be predictive for post-merger identification.

The psychological process that drives a positive relationship between pre-merger and post-merger identification holds only if the perception that aspects of the pre-merger organization are transported to the post-merger organization remains unchanged over time. If this perception changes, we expect the effect of pre-merger identification on post-merger identification to vary and to wear off.

Ingroup Typicality

It was argued above that perceptions of continuity implicitly influence post-merger identification. Perceived continuity from pre-merger to post-merger group implies that the former ingroup is seen as typical for the newly merged organization. Mostly the dominant merger partner will be perceived as typical whereas the subordinate partner will be perceived as rather atypical or deviant from the shared post-merger group (van Leeuwen et al., 2003). The conceptualization of continuity is similar to the notion of ingroup typicality, which describes the perception of fit of the ingroup for a superordinate category (Mummendey & Wenzel, 1999). Although sometimes labeled differently (i.e., *ingroup representation,* Boen, Vanbeselaere, Brebels, Huybens, & Millet, 2007; or *sense of continuity*, Bartels, et al., 2006)

ingroup typicality has been found to influence post-merger organizational identification in various merger studies (e.g., Boen et al., 2005; 2007; van Dick, Ullrich, & Tissington, 2006; van Leeuwen et al., 2003). More general, research on self-prototypicality (Eisenbeiss & Otten, 2005; Kashima, Kashima, & Hardie, 2000; Reid & Hogg, 2005) and group-prototypicality (Vossen, 2006) showed that perceived prototypicality predicts identification. Hogg and Reid (2001) stated that "[…] when group membership becomes salient, people are highly sensitive to prototypicality, as it is the basis of perception and evaluation of the self and other group members" (p.164). In a similar vain we expect that ingroup typicality is positively related to post-merger identification: if the ingroup fits a (positively) evaluated inclusive category well, participant will be more likely to identify with the inclusive category. Norms and standards of the superordinate category and the ingroup are then perceived as relatively congruent and organizational members are likely to identify with this category. Moreover, in line with previous reasoning, we assume the previously postulated effect of pre-merger on post-merger identification will be moderated by ingroup typicality (Boen, Vanbeselaere, & Cool, 2006). For members of the dominant organization who are highly identified with the pre-merger organization the expected effect of higher post-merger identification should hold especially when ingroup typicality is high. If ingroup typicality refers to the extent to which characteristics of the new merger group are perceived as corresponding to the characteristics of the pre-merger ingroup, group members perceive a continuation that influences the transfer of pre-merger to post-merger identification (Boen et al., 2006; van Leeuwen et al., 2003).

It is expected that the effect of ingroup typicality on post-merger identification as a predictor variable is rather stable over time. That is to say, although we may expect mean level changes, we do not assume that the statistical association between post-merger identification and typicality will change. Generally, mean level changes, as indicated by

growth, do not necessarily come along with time-varying effects of relations between variables. A predictor is time-varying if its values (on the criterion) differ over time (Singer & Willet, 2003), and this is often independent of whether constructs change on the mean level.

Mean level changes are expected because ingroup typicality is closely related to dominance. For example, if the dominant merger partner consolidates the dominant position, its organizational members may experience more ingroup typicality for the newly merged organization, resulting in higher values of ingroup typicality over time. However, over all time points we assume that higher levels of typicality are associated with higher levels of post-merger identification.

Perceived Fairness in the Merger Process

We suppose that pre-merger identification and ingroup typicality are predictors of post-merger identification. Additionally to variables explicitly derived from the SIA, it is assumed that the perception of fairness concerning the merger process is an important predictor of post-merger identification. The perception of fairness taps into beliefs about how resources and outcomes are redistributed within the newly merged organization (*distributive justice*) as well as how organizational members are treated and how the change was implemented (*procedural justice*) within the newly merged entity. It was thus regarded as a general perception of fairness (Colquitt, Conlon, Wesson, Porter, & Ng, 2001, for an overview on organizational justice in general; Lipponen et al., 2004; Giessner et al., 2006). Little research has been conducted on the effect of justice or perceived fairness in a merger context (for an exception see Amiot et al., 2006; Citera & Stuhlmacher, 2001; Lipponen et al., 2004; Meyer, 2001; Tyler & De Cremer, 2005), although the literature stresses the importance of fairness in the merger implementation process (e.g., Citera & Rentsch, 1993; Citera & Stuhlmacher, 2001).

Justice perception is one of the key concepts in the *group engagement model* proposed by Tyler and Blader (2003). In line with the SIA, they stress that it is mostly the development and maintenance of a favorable identity that influences cooperative behavior. In turn, identity depends on the evaluation of procedural fairness experienced within the group. That is, perceived fairness transmits identity-relevant information about the quality of one's relationship with the rest of the group. Fair procedures and treatment indicate a positive, respectful position within one's group and promote pride in the group membership (Amiot et al., 2006). Moreover, the justice motive is related to an *inclusive* social identity (Platow, Wenzel, & Nollan, 2003). More specifically, the perception of fairness during a merger was found to influence organizational identification with the newly merged group (here inclusive category) and adjustment to a merger (Amiot et al., 2006; Lipponen et al., 2004; Meyer, 2001; Tyler & De Cremer, 2005). We expect to replicate these results and suppose a positive effect of perceived fairness on post-merger identification.

As previous research has shown that perceived legitimacy (often defined as the perception of a deserved outcome of a just procedure; see Giessner et al., 2006) differs throughout a merger process for high and low-status groups (e.g., Terry & O'Brien, 2001) or dominant and subordinate merger partners, respectively, we expect to replicate these findings and assume that the subordinate merger partner will perceive the merger to be less fair then the dominant group.

In addition to the differences for dominant and subordinate merger partners, it is expected that the perception of fairness varies on a mean level according to actual implementations and contextual changes throughout the merger process. If, for example, members of the dominant group have the impression that they are "dragged down" (e.g., Hornsey, van Leeuwen, & van Santen, 2003) by the subordinate merger partner, perception of fairness may decrease because certain expectations are not met. Similarly to the effect of

ingroup typicality on post-merger identification, we assume that the effect of perceived fairness is time-invariant. We have no theoretical hint to presume that the effect of perceived fairness on post-merger identification varies over time. Yet, this assumptions needs to be empirically explored.

<div align="center">The Present Study</div>

The major objective of the present study is to examine post-merger identification in the course of a merger. We used a longitudinal design which allowed assessing development and growth of post-merger identification among students involved in a university merger, as well as the effects of time-varying predictors. *Time* was included as an essential variable determining patterns concerning when and how specific psychological factors predict change during a merger. To address the first research question, namely what are patterns of change in post-merger identification, the following prediction are tested:

  1 a) Post-merger identification increases significantly, but slowly over time.

  1 b) Post-merger identification is higher for members of the dominant merger partner over
     all measurement points.

Addressing the second research question, namely whether post-merger identification is related to pre-merger identification, ingroup typicality, and perceived fairness. Moreover it is examined whether these associations change across time and/or differ for organizational members of the dominant and subordinate merger partner, the following predictions are examined:

  2 a) Pre-merger identification positively predicts post-merger identification only for
     members of the dominant organization.

  2 b) The effect of pre-merger identification on post-merger identification dissipates over
     time.

3 a) Higher levels of ingroup typicality will lead to higher levels of post-merger identification.

3 b) The effect of pre-merger identification and organizational dominance may be more pronounced the higher ingroup typicality is.

3 c) Despite potential mean level changes in typicality, we do not expect a time-varying effect of typicality on post-merger identification.

4 a) Perceived fairness is the more positively related to post-merger identification, the higher perceived fairness and identification with the newly merged organization are.

4 b) Perceived fairness is higher for members of the dominant organization. Moreover, the mean level will change for all organizational members over time.

4 c) Despite potential mean level changes in perceived fairness, we do not expect a time-varying effect of typicality on post-merger identification.

The Field Situation

This longitudinal study was conducted in the context of a merger between two higher educational institutions[3]: a university (dominant) and a polytechnic (subordinate[4]) in Germany.

The merger was initiated by a governmental decision and merger plans were first launched in September 2003. After a year of negotiations, the federal state inked a law to regulate the merger process. The official day of the merger was January 1st 2005. The official merger period was during the winter term of 2004/2005. Shortly after the beginning of the summer term in April 2005 the first data collection was conducted. When the first survey was distributed in April 2005, students of *economics- and social science* (former university) and *economics* (former polytechnic) had only separated classes. The schools of economics- and social science and economics had not been not officially consolidated yet. The two

departments were situated in different parts of the town and contact between the students

groups was rare. First informative meetings about the new faculty structure were held shortly

after the first survey was conducted. The new structure with three departments was introduced

in October 2005 and implemented in April 2006. Beginning with the winter term 2005,

semester dates that had been different for the polytechnic and the university were

synchronized and language classes and additional classes (e.g., computer courses, sport

classes) were merged and offered for members of both organizations. First year students

started to officially study at the newly merged organization in October 2005. The second

questionnaire was administered shortly after the beginning of the winter term 2005.

Recruitment for a new president of the newly merged university should have been completed

by summer 2005. However, due to internal difficulties a first candidate declined the offer and

a new one had to be found and was officially assigned in October 2005. He started the new

position in May 2006. The last questionnaire was sent out in April, shortly after the start of

the summer term 2006. Until then the new department structure had been implemented and

the new president had been assigned.

All measurement points fell into the organisational combination stage (Seo & Hill,

2005) that normally involves the actual integration of organizational functions and operations.

This stage usually takes months to years (Buono & Bowditch, 1989). In the merger at hand,

organizational change constantly increased throughout the data collection as described above.

Once implemented, the merger followed an integration-proportionality pattern

(Giessner et al., 2006; see also Nahavandi & Malekzadeh, 1990). That is, both organizations

were represented and partly preserved in the new merged university, although the former

university was represented stronger than the polytechnic. Exemplarily, the name of the newly

merged organization equalled the name of the former university and the logo was very similar

to the logo of the former university, although the colors of the logo matched the former

Polytechnic. Furthermore, the merger was implemented such that until the new faculty structure was executed in April 2006 most members of the university remained segregated in their work and study tasks.

We note that reported findings have been part of a larger study that looked at both identification processes and intergroup relations throughout a merger (Gleibs, Noack, & Mummendey, 2007). Yet, measures related to the relevant findings reported in this paper have not been previously published or reported elsewhere.

Method

Participants

A total of 466 respondents completed the first questionnaire and 309 agreed to give their email address. The second questionnaire was completed by 314 participants, and 378 completed the third one. A total of 157 completed all three questionnaires (33% response rate in reference to Time 1). Those who completed the questionnaire at Time 1, Time 2, and Time 3 were aged between 20 and 34 years ($M = 24.5$, $SD = 2.4$). 50.6% of the participants were female and 49.4% male. The sample consisted of 78 students from the former university and 79 students from the former polytechnic. Preliminary analyses indicated that the two groups differed in terms of age, $t(157) = 4.61$, $p = .05$ and gender, $\chi^2(1, N = 157) = 8.32$, $p = .004$. Participants from the former polytechnic were slightly older ($M = 25.37$, $SD = 1.97$) than participants from the former university ($M = 23.63$, $SD = 2.5$). Participants of the former polytechnic participants were 39% females and 61% males and participants from former university were 62% females and 38% males. Participants were enrolled in Economics (polytechnic) or Economics and Social Science (university)[5]. Despite the slight differences in the distribution of gender and age in the two samples, age and gender included as control variables did not reveal differences and were therefore not included for further analyses.

Design and Procedure

The first questionnaire was distributed to economics students enrolled in one of the two former institutions four month after the official merger had happened. The second questionnaire was distributed six month later and the third one after one year. For the first data collection, a self-administered questionnaire was handed out to students in both organizations during lectures. Lecturers were asked beforehand for permission and announced the data collection. Participation was fully voluntary and not required for course work. Participants were informed that the questionnaires were designed to give them an opportunity to express their opinions about a range of issues associated with the merger. All participants were informed that their responses were anonymous as well as confidential, as they have not been made available to university personnel at any time. At Time 1 participants were asked to indicate their email addresses on a separate sheet of paper for receiving the second and third questionnaire via email. The email addresses were at no point stored with the completed questionnaire. At Time 2 and Time 3 a link to an online self-administered questionnaire was sent to those participants who had provided their email address. In addition, the survey was announced via a mailing list including all economics students of the former Polytechnic and on an electronic platform used by 80% of the former University's students. After completion of the Time 1 and Time 2 questionnaires participants took part in a lottery for compensation and after completing the third wave of data collection all remaining participants received 5 Euro (for single participation), 10 Euro (for twofold participation), and 15 Euro (for threefold participation) vouchers for compensation.

Measures

With the exception of the ingroup typicality measure, all measures were multi-item scales. Responses were assessed on rating-scales ranging from 1 (*strong disagreement)* to 7 (*full agreement*) if not stated otherwise.

Identification. Post-merger organizational identification was assessed with four items adopted from Doosje, Ellemers, and Spears (1995), e.g. "I see myself as a member of [the newly merged institution]". Pre-merger identification was assessed with the same items, but referring to "my former institution". Cronbach's α at Time 1, 2, and 3 were .78, .73, and .82 for pre-merger identification and .92, .88, and .91 for post-merger identification. This scale was preferred over the Mael and Ashforth (1992) organizational identification measure because it encompassed multiple components of identity and also measures social identity salience (Haslam, 2001).

Ingroup Typicality. One item measured general typicality (Waldzus, Mummendey, Wenzel, & Weber, 2003) of the former ingroup and former outgroup on a 6-point scale (1 = *not at all* to 6 = *very much*), e.g., "The students of my former ingroup are typical for students of the newly merged organization".

Perceived Fairness. To asses the perceived fairness, the following three items, adapted from Giessner et al. (2006) and especially conceptualized for merger studies, were used: "I think it is fair how students of my former institution come off well in the merger process", "I think it is fair how students of the former other institution come off in the merger process", "The momentary starting position of both groups is legitimate", Cronbach's α at Time 1, 2, and 3 were .70, .80, and .87.

Analysis

We first analyze mean level changes for all four variables at the three time points for dominant and subordinate merger partners. This analysis should describe mean level changes over time and differences due to organizational membership. Additionally, interaction effect of time and organizational membership both for the outcome variable, but also for the predictor variables are shown. The main task was to investigate reasons for changes in the outcome variable, i.e., which and how predictors influence post-merger identification over

time. We therefore applied a multilevel model for change (or multilevel random coefficient modelling, MRCM) using HLM 6 (Raudenbush, Bryk, & Congdon, 2004). Multilevel models for change, or hierarchical linear models for change, are used to understand growth and development in outcome variables as well as the influence of time-variant and time-invariant covariates. This kind of approach focuses on trajectories of change in an outcome variable over time, describes developmental patterns, and identifies predictors for development. The observed repeated measure is used to estimate an underlying growth trajectory.

We used a multilevel approach because longitudinal data can be viewed as multilevel data with repeated measures nested within persons (Hox, 2002). If longitudinal data is viewed as multilevel data, the resulting hierarchical model accounts for the dependency that subjects have been assessed repeatedly. Different from multiple regressions, *Time* can be explicitly incorporated as a factor. Additionally, different from analyzing changes with (M)ANOVA's, multilevel models for change allow for the inclusion of multiple covariates (Hox & Stoel, 2005; Plewis, 2001). That is, we are able to asses the effect of *Time* on the outcome variable as well as the effect of time-varying and time-invariant predictors. Because a multilevel model approach to change relies on a person-period data set, each predictor can, if appropriate, take on a specific value for each measurement point (time-varying). The values of time-invariant predictors are constant across the multiple records of a person-period data set (Singer & Willet, 2003). Conceptually, a multilevel model for change allegorizes multiple nested regression analyses where the coefficient of one level is the outcome of the next level. In a multilevel model with longitudinal data, the first level (Level 1) includes all observations over n-points of measurement that are the repeated observations of each person. On the second level (Level 2), each person is only included once and individuals are the unit of analysis. The Level 1 model estimates the association between the outcome variable and the variable *Time*, explicitly expressed as a factor and a stand-in variable for change. In addition

to Time, several time-varying predictors are included in a Level 1 model. The Level 1 model accounts for intraindividual differences in the outcome variable. The Level 2 model can additionally include time-invariant variables, e.g. in this case pre-merger organizational membership, and thus helps to specify individual differences in any statistical association at Level 1[6].

<div align="center">Results</div>

Panel Attrition and Comparison of Participants

In order to test if the final sample consisting of all participants who completed the Time 1-Time 3 questionnaire (*N*=157) differed from those who completed only the first and/ or second questionnaire, a multivariate analysis of variance (MANOVA) was conducted. Participants who completed only the first questionnaire (*N* = 225) were compared to those who completed all three questionnaires (*N* =157) on the relevant Time 1 variables (i.e., organizational membership, pre-merger identification, post-merger identification, ingroup typicality, and perceived fairness). The results suggest systematic differences between samples on a multivariate level at Time 1, $F(7, 368) = 2.49$, $p = .016$, $\eta^2 = .045$. Analysis on the univariate level showed that this effect was due to a significant difference on pre-merger identification at Time 1, $F(1, 375) = 14.06$, $p = .001$, $\eta^2 = .030$. Participants who only completed the questionnaire at Time 1 identified less with the pre-merger organization ($M = 5.04$, $SD = 1.21$) than those participants who completed all three questionnaires ($M = 5.43$, $SD = 0.92$). Likewise, the influence of drop-out between Time 2 and Time 3 on the model variables at Time 2 was tested. With a MANOVA we compared those who participated only at Time 2 ($N = 51$) and Time 1 & Time 2 ($N = 31$) with those who participated at all three time points ($N = 157$) concerning the model variables at Time 2. The MANOVA revealed no significant difference at the multivariate level at Time 2, $F(5, 230) = 0.85$, $p = .57$, $\eta^2 = .018$. Additionally, the analysis showed no significant differences on the measures at the univariate

level. All following analyses were conducted using the Time 1-Time 3 sample in which only

those participants were included who answered all three questionnaires. The seemingly

systematic drop-out of participants after Time 1 and its potential problems will be

acknowledged in the discussion.

Preliminary Analysis: Changes of Means over Time

Before going into detail in analyzing changes of the outcome variable, we conducted a

descriptive analysis of change both for the outcome variable as well as the predictor variables.

Variables were subjected to a mixed-model analysis of variance (ANOVA) with Time as the

within-participants factor and organizational membership as a between-participants factor.

The analysis showed a significant change over time, $F(8, 143) = 4.24$, $p = .001$; $\eta^2 = .19$. In

addition, a significant effect of organizational membership was found, $F(4, 147) = 45.66$, $p=$

.001; $\eta^2 = .55$, but no significant interaction of Time x Organization, $F(8, 143) = 0.64$, $p = .73$;

$\eta^2 = .03$. Table 1 displays results from the repeated measure ANOVAs including all means

and standard deviations. *Time* (as the within-factor) influenced pre- and post-merger

identification, ingroup typicality, and perceived fairness. In addition, we found significant

mean level differences between members of the dominant and subordinate merger partner for

post-merger identification, ingroup typicality, and perceived fairness. We found no significant

interaction for Time x Organization (all *Fs* < 2, *ns*).

Insert Table 1 about here

More specifically, post-merger identification demonstrated a significant quadratic

change over time, $F(2, 152) = 4.47$, $p = .036$, $\eta^2 = .03$. *Post-merger identification* did not

change from Time 1 to Time 2, but increased significantly from Time 2 to Time 3 for

members of both organizations. Also pre-merger identification displayed a quadratic change

over time $F(2, 152) = 5.02$, $p = .026$, $\eta^2 = .03$. *Pre-merger identification* increased from Time

1 to Time 2 and declined from Time 2 to Time 3. The effect of Time on ingroup typicality

was linear, suggesting that ingroup typicality decreases over time, $F(1, 153) = 6.82$, $p = .01$, $\eta^2 = .04$. Ingroup typicality decreased from Time 1 to Time 2 but remained stable from Time 2 to Time 3 for members of both organizations. The effect of Time on *perceived fairness* was linear suggesting a decrease of perceived fairness over time. In general, these preliminary analyses suggest a pattern of change that is similar for members of the dominant and subordinate organization. Adjustment to a merger was so far not achieved as indicated by an increase of pre-merger identification and a drop in ingroup typicality as well as in perceived fairness both for the dominant and the subordinate merger partner. Mean level differences for members of the dominant and subordinate organization suggest a slightly better adjustment of members of the dominant organization. Yet, this approach is only useful to describe mean level changes but does not allow for inclusion of time-varying predictors and possible changes in correlations over time.

First hints that correlative patterns might change over time are found in the raw correlations as summarized in Table 2. The raw correlations at Time 1, Time 2, and Time 3 provide initial support that ingroup typicality and perceived fairness are related to post-merger identification. As expected, ingroup typicality and perceived fairness were positively correlated. Pre-merger identification across participants was not significantly correlated with post-merger identification. For pre-merger identification and ingroup typicality it seems that the correlation with post-merger identification changed over time. These interrelations between the outcome variable and its predictors will be further investigated.

Insert Table 2 about here

A Multilevel Model for Change

To further analyze the nature of change in post-merger identification and to answer the question whether post-merger identification is influenced by pre-merger identification, ingroup typicality, perceived fairness, as well as by Time and organizational dominance, we

applied a multilevel regression approach or a multilevel model for change to the data (Singer & Willet, 2003). In a multilevel model for change, Y_{it} is the dependent variable of individual i at time point t. The growth trajectories indicate how post-merger identification changes over three points of measurement for individual i. It is further tested whether variance in change of post-merger identification is explained by time-varying predictors and organizational membership as a time-invariant factor. *Time* as a factor was included in a Level 1 model as well as the time-varying predictors and pre-merger organizational membership was entered as a time-invariant predictor in the equation at Level 2.

A Multilevel Model Change of Post-Merger Identification

The first column in Table 3 shows an unconditional means model (Model 1), which only fits an overall mean and allows for individual differences in mean level (Singer & Willet, 2003). The intercept indicates the average level of post-merger identification across time, *b* = 3.56, *SE* = 0.09, *t*(156) = 37.96, which differs significantly from 0, *p*<.001. The intraclass correlation coefficient ρ[7] suggests that 54% of the variance of change in post-merger identification was attributable to differences among individuals. To test the assumption that post-merger identification slowly increases over time, we examined an unconditional growth model (Model 2) to which we added Time as a predictor to the Level 1 Model. While the average participant had a non-zero level of post-merger identification, *b* = 3.47, *SE* = 0.10, *t*(156) = 31.70, *p*<.001 at Time = 0 (Time 1), the linear trend was not significant, *b* = 0.09, *SE* = .05, *t*(156) = 1.50, *p* = .13. To further test growth in post-merger identification we controlled for quadratic effects of Time on post-identification by including the polynomial function of Time², that is the quadratic effect of Time, in Model 3. Results showed that this parameter is significant, *b* = 0.18, *SE* = .08, *t*(466) = 2.20, *p* = .028, indicating a quadratic relationship between Time and post-merger identification. We further predicted a significant difference between members of the dominant and subordinate groups. Model 4 included

organizational membership as a time-invariant covariate. The model suggests that the

estimated post-merger identification for an average member from the dominant organization

is $b = 3.81$, $SE = .14$, $t(155) = 26.47$, $p<.001$. The estimated difference between members of

the dominant and subordinate university is $b = -.56$, $SE = .18$, $t(155) = -3.05$, $p = .003$,

suggesting that on average members of the subordinate organization identify less with the

post-merger organization. In addition, it was investigated whether membership in

organization was interacting with the effect of Time and Time². As summarized in Model 5

(see Table 3) these effects were not significant. Thus, to answer the first research question,

average change in post-merger identification was quadratic and on a mean level lower for

members of the subordinate organization than for members of the dominant organization. Yet,

the pattern of change is similar for members of the dominant and subordinate organization. In

the next steps, we move towards predicting further variability as a function of the time-

varying and time-invariant predictors to better understand the developmental process of post-

merger organization.

<div align="center">Insert Table 3 about here</div>

Predicting Post-merger Identification

In the following, we present results to answer the second research question. The

substantive question behind the following analyses was, whether trajectories of post-merger

identification vary over time as a function of the proposed predictors, and whether the

magnitude of this relation depends on participants belonging to the dominant or subordinate

merger organization. We therefore examined a series of consecutive models to firstly explore

the main effects of the predictors on post-merger identification and secondly to control for

interaction effects with Time and Time² as well as , if indicated, to control for interaction

effects of organizational membership. Following the procedure used by Pan et al. (2005)

Model 6 through 9 in Table 3 present a taxonomy investigating the relationship between time-

varying predictors and post-merger identification. Time-varying predictors or covariates are normally specified as fixed or constant at Level 2 (Raudenbush & Bryk, 2002). Time-variant predictors require the assumption of no Level 2 residuals, because they have no within-person variation (Singer & Willet, 2003). Still, according to our assumptions of different effects for members of the dominant and subordinate organization, we expect non-random variation due to organizational membership. It was predicted that pre-merger identification should only be related to post-merger identification for members of the dominant organization. Moreover, the effect of ingroup typicality should influence the stated relationship between pre-merger identification and organization on post-merger identification. That is, the coefficient for pre-merger identification and the interaction of pre-merger identification and ingroup typicality were allowed to vary across members of the two organizations. The three predictor variables were grand mean centred for all analyses.

We tested a model that included pre-merger identification and in a second step organizational membership (models are not shown here). The main effect of pre-merger identification was virtually zero, $b = .004$, $SE = .10$, $t(463) = 0.04$, $p > .50$. After inclusion of organizational membership, the main effect was $b = .17$, $SE = .10$, $t(463) = 1.74$, $p = .081$, and the interaction effect of pre-merger identification and organization on post-merger identification was $b = -.29$, $SE = .19$, $t(462) = -2.4$, $p = .130$. Although neither the main effect of pre-merger identification nor the interaction with organizational membership is significant, the direction of the effect suggests that for members of the dominant organization changes in post-merger identification are positively related to pre-merger identification whereas for the members of the subordinate organization this relationship was reversed. That means that changes in pre-merger identification were negatively related to changes in post-merger identification. However, in line with our previous reasoning, it seems that pre-merger identification is not a significant predictor for post-merger identification across time points.

Therefore, we further tested whether the effect of pre-merger identification had both an effect on linear and quadratic growth. Including the three-way interaction of pre-merger identification, organizational dominance and Time did not yield a significant effect, $b = .19$, $SE = .15$, $t(460) = 1.32$, $p = .18$ (model is not shown). The effect of pre-merger identification, organizational dominance, and Time² was significant as shown in Model 6. Analysis of the simple trajectories[8] (see Curran, Bauer, & Willoughby, 2006) revealed that the pre-merger identification and interaction with Time, $b = -0.77$, $p < .05$ and Time², $b = 0.32$, $p < .01$, is only significant for members of the dominant group. For participants of the subordinate group this effect was not significant ($b = -0.12$, $p > .05$ for pre-merger identification and Time, and $b = 0.09$, $p > .05$ for pre-merger identification and Time²). Results indicate that for members of the dominant merger organization at Time 1 pre-merger identification was positively related to post-merger organization. This implies that if members from the dominant organization identify strongly with the pre-merger organization they tend to identify with the post-merger organization. Yet, at Time 2 and Time 3 this effect wore off. At Time 2 and Time 3 organizational members with different values in pre-merger identification did not significantly differ in values of post-merger identification. Pre-merger identification had no effect on post-merger identification for members of the subordinate organization across time. Figure 1 and Figure 2 present prototypical change trajectories based on Model 6 to demonstrate the findings for members of the dominant and subordinate organization.

<div align="center">Insert Figure 1 about here</div>

<div align="center">Insert Figure 2 about here</div>

In further models (models are not shown in Table 2) the main effect of typicality was tested, $b = -.12$, $SE = .07$, $t(461) = -1.60$, $p = .11$, and additionally the interaction of typicality and organizational membership, $b = .29$, $SE = .12$, $t(461) = 2.45$, $p = .002$, indicating a significant difference between organizational members. However, resolving the simple

trajectories (Curran et al., 2006) revealed that both simple trajectories did not reach significance ($b = 0.11$, $p = .48$ for members of the subordinate organization and $b = -0.12$, $p = .12$) for members of the dominant organization although the significant interaction indicates a difference between the two groups.

We further assumed a three-way interaction of pre-merger identification, organizational dominance, and typicality. After firstly controlling for the two-way interaction of pre-merger identification and typicality that was non-significant, $b = .03$, $SE = .13$, $t(456) = -0.31$, $p = .75$, also the predicted three-way interaction did not reveal a significant effect, $b = .19$, $SE = .14$, $t(456) = 1.37$, $p = .17$. The subsequent model (models are not shown in Table 3) included the effect of typicality and the interaction with organizational membership plus the time-varying effects of typicality. The included cross-product of typicality x Time was significant, $b = -0.05$, $SE = .01$, $t(460) = -2.23$, $p = 0.03$. The tested effect for quadratic change did reveal a marginally significant result, $b = -.26$, $SE = .15$, $t(459) = -1.76$, $p = .08$. Nevertheless, after controlling for organizational membership, none of the time-varying effects remained significant (Model 7).

We additionally tested for the time-varying effect of perceived fairness as we wanted to explore whether the effect varies over time. Indeed, the main effect of perceived fairness was significant and suggests that perceived fairness is positively related to post-merger identification, $b = .50$, $SE = .05$, $t(464) = 9.24$, $p < .001$. Within each time point, some variance in post-merger identification is due to perceived fairness. As expected the effect of perceived fairness was not influenced by organizational membership, $b = -.023$, $SE = .11$, $t(464) = -0.21$, $p = .83$, and perceived fairness had no effect on linear change in post-merger identification, $b = -.026$, $SE = .04$, $t(464) = -0.64$, $p = .53$. After inclusion of the quadratic effect of Time in a subsequent model (Model 8), the interaction effects of perceived fairness and Time, $b = -.26$, $SE = .14$, $t(464) = -1.79$, $p = .073$ as well as Time², $b = .11$, $SE = .06$,

$t(464) = 1.74$, $p = .081$ were marginal significant. These findings suggest that the effect of perceived fairness on post-merger identification gets more pronounced over time.

Insert Figure 3 about here

Finally, pre-merger identification, ingroup typicality, perceived fairness and the interaction terms were included in a model to investigate their simultaneous effects. All predictors remained significant with the exception of the effect of pre-merger identification and organizational membership on linear and quadratic changes of post-merger identification (see Model 9).

In sum, the results of this study demonstrate considerable variability in change of post-merger identification over time among members of the dominant and subordinate organizations. In addition to the expected effect of time as a proxy for change within the merger process, pre-merger identification, typicality, and perceived fairness helped explain observed variability. However, only the effect of pre-merger identification changed significantly over time, depending substantially on organizational membership. Additionally, we found a marginal significant effect of Time/Time^2 and perceived fairness on post-merger identification.

Discussion

The present study was designed to examine longitudinal effects on post-merger identification and to extend previous research by focusing on dynamics of change in identification processes. Taking an intergroup perspective on organizational mergers (Hogg & Terry, 2000), we stated two research questions. We firstly examined patterns of change in post-merger identification and possible differences due to membership in the dominant or subordinate organization. Second, we raised the question whether post-merger identification is over time related to pre-merger identification, ingroup typicality, and perceived fairness. At all three points of measurement, post-merger identification was relatively low and the pattern

of change was quadratic instead of linear. That is to say, identification with the newly merged organization does not change significantly from Time 1 to Time 2 but increases from Time 2 to Time 3. This pattern applies for both, the members of the subordinate and dominant organization. As expected, pre-merger identification was only a positive significant predictor of post-merger identification for members of the dominant organization. Additionally, this was only the case at Time 1 but not at Time 2 and Time 3. This supports our assumption that the predictive effect of pre-merger identification dissipates over time. Assumptions about ingroup typicality on post-merger identification were not confirmed. Contrary to our assumptions, we did not find a significant three-way interaction of pre-merger identification, organizational dominance, and ingroup typicality. The analysis revealed a two-way interaction of ingroup typicality and organizational dominance, but none of the resolved simple trajectories was significant. Further, the effect of ingroup typicality remained unchanged when including Time or Time². Perceived fairness positively predicted post-merger identification in line with our assumption and this effect did marginally change over time.

If we define identification with the newly merged organization as a marker for adjustment to the merger and as indicative for how strongly members feel belonging to the organization, these results indicate that adjustment and belongingness are difficult to achieve, develop slowly, and depend on contextual factors. The field situation as described above, suggests that at Time 1 participants did not experience much change but did also not know what to expect. At Time 2, after first changes like synchronised semester times were implemented, participants of both organizations tended to hold on to their pre-merger organization and refused to identify with the post-merger organization (see also van Knippenberg et al., 2002). At Time 3, one year after the merger had been launched, we observed a slight increase in post-merger identification, indicating a first sign of adjustment.

Despite the slow development that was predicted, the significant growth showed that identification did not change constantly but first decreased and then increased. Although we did not predict such a non-linear change in identification, the result is not surprising given the fact that many behavioral processes exhibit differential rates of change (Cudek & Harring, 2007). The non-linear increase of post-merger identification points to the fact that change is not uniform over time. Change in post-merger identification is more likely to speed up in some periods and to slow down in others and may depend on how change processes within an organization are implemented. Especially in the organizational combination stage (Seo & Hill, 2006), changes are implemented at an altered speed and affect identification processes differently. For example, in the present study, the pooled language classes that were implemented between Time 2 and Time 3 might have had the effect that students perceived the newly merged organization as one entity, which may have enhanced their identification, leading to an increase between Time 2 and Time 3. This change in the organizational structure might have had a direct impact on students.

Further, we aimed at understanding variation in post-merger identification throughout a merger process by investigating several predictors of post-merger identification. First, we focused on the influence of pre-merger identification as a predictor. As assumed, the effect of pre-merger identification on changes in post-merger identification was influenced by organizational membership. At Time 1 members of the dominant merger partner perceived the merger as a continuation rather than a threat, whereas participants of the subordinate merger group perceived the situation as more ominous. This result replicated previous findings (Bartels et al., 2006; van Knippenberg et al., 2002). However, the aspect of a sense of continuity was previously not analyzed using a longitudinal design. The present paper addresses this gap in research. As predicted, and contrary to previous research, the expected effect of pre-merger on post-merger identification for members of the dominant organization

was only significant at Time 1. Furthermore, pre-merger identification was not related to post-merger identification at Time 2 and Time 3, neither for members of the dominant nor for the subordinate organization. This time-varying effect of pre-merger identification indicates a constraint for the sense of continuity hypothesis. Van Knippenberg and colleagues (2001; 2002) argued that a key determinant of continuity is organizational dominance. They assumed that dominant merger partners undergo relatively little change and can maintain identity also within the new organization. We assume that the merger becomes more threatening over the course of the merger even for the dominant merger partner. What causes the perception of threat? One possible explanation might be found in research by Hornsey et al. (2003). In the context of examining the consequences of a common fate situation they argued that the perception of a common fate is a possible source of threat for high-status or respectively dominant groups. The perception of common fate reflects an undesirable state because access to rewards is perceived as diminished for members of the high-status group and they have the impression to be dragged down by the less prestigious or subordinate group. If common fate is defined as "a coincidence of outcomes among two or more persons [groups] that arises because they have been subjected to the same external forces or decision rules" (Brewer, 2000, p. 118, cf., Hornsey et al., 2003), we can understand a merger as a common fate for members of the involved organizations. Along these lines, the perception of threat might increase for the dominant merger partner and lessens the sense of continuity if the merger is increasingly perceived as a common fate situation. This process may inhibit a positive relationship between pre- and post-merger identification at later stages of the merger and should be further examined.

The results of ingroup typicality were not as predicted and are not in line with previous research (e.g., Bartels et al., 2006; Boen et al., 2006, van Leeuwen, et al., 2003). A potential explanation for the results as described above might be the valence of the

superordinate category. We argue that ingroup typicality is only a relevant predictor for post-merger identification if the superordinate category is evaluated positively (see Wenzel, Mummendey, Weber, & Waldzus, 2003 for a similar argument). Depending on the positive or negative evaluation of the newly merged organization, the effect of ingroup typicality on post-merger identification should vary. Despite the fact that the dominant merger partner can be perceived as typical due to reality constraints, its members nevertheless evaluated the superordinate category negatively (Waldzus, Mummendey, Wenzel, & Boettcher, 2004). If this is the case, as it might be for the merger at hand, organizational members will try to distance themselves psychologically from the superordinate category by means of dis-identifying. The interaction of ingroup typicality and organizational membership can be interpreted in a similar vain. The tendencies in the simple trajectories showed that members of the dominant organization identify less with the post-merger organization if they perceive the ingroup to be typical. This might be because they evaluated the new organization as rather negative and feared for example a loss in status. The slight positive relation between ingroup typicality and post-merger identification for members of the subordinate organization might be caused by a rather positive evaluation of the superordinate category.

At all points of measurement members of the subordinate organization perceived the implemented merger as less fair compared to members of the dominant organization. This finding is in line with SIT and previous merger research (e.g., Terry & O'Brien, 2001), according to which members of the low or respectively subordinate organization become more aware of injustice concerning their disadvantaged position (Tajfel & Turner, 1986; Platow et al., 2003). In line with the group engagement model (Tyler & Blader, 2003) and previous merger literature (Amiot et al., 2006; Lipponen et al., 2004) perceived fairness positively predicted post-merger identification. This affirms the assumption that fairness

issues transmit identity-relevant information and that the perception of a fair implementation enhances adjustment to the merger.

The predictive effect of perceived fairness on post-merger identification became more pronounced over time across members of both organizations despite mean level changes. On a theoretical level this is in line with the group engagement model that stresses the importance of fairness for identity judgement and psychological engagement (Tyler & Blader, 2003). Willingness to engage with one's group depends on identity information people receive from their ingroup. This identity information is hypothesized to be contingent on fairness evaluation. We supposed that only if participants perceive the organization as an identity-relevant category, information about fair treatment throughout the merger will become increasingly important for identification with the merged organization leading to higher psychological engagement with that group. As the merger unfolds the merged organization seems to become more identity-relevant. The perception of a fair treatment in the merger process shapes the impression that the new organization is a source of pride rather than shame which leads to an increased perception that identification motives are fulfilled (Haslam, Powell, & Turner, 2000; Tyler & Blader; 2003). Because the effect was only marginally significant, more research is needed to replicate such an effect and to further theorize on the incremental effect of fairness.

Generally, the present research emphasizes that identification is a dynamic and context-dependent process that occurs gradually over time (Pratt, 1998). We focused on how an organizational change process determined the relation between psychological factors and included time and change as a theoretical and contextual variable with implications for psychological research (McGrath & Tschau, 2004). Although the notion of contextual dependency is rooted in SIA and its meta-theoretical embedding, most previous research did not account for continuity over time and social psychologists have rarely studied the

dynamics of change both in temporal and contextual terms (Reicher, 2004). While

acknowledging the dynamic aspects already inherent in SIT and SCT (Condor, 1996; Tajfel,

1982), we proposed to clearly stress flexibility and context within the SIA and to bring

developmental and temporal aspects back on the research agenda. Further on, we suggest to

extent the SIA by incorporating a *time in events* perspective (Levine, 2003, p.67). This

perspective focuses on the question how different *times* (e.g., processes, stages, and periods)

contribute to identification processes or intergroup relation issues. The time in events

approach moves beyond debates over stability and change by considering the developmental

representation of constructs or events. This is closely related to a developmental perspective

on social psychology. Rather then focusing on static perceptions of identity and identification,

we should evolve a focus on identity development and how people come to identify with

social categories (see Eisenbeiss & Otten, 2005, for a similar argument) and the dynamics of

change. The present study alluded that social psychological models are limited in the way

they conceptualize dynamics of change. This paper can only be regarded as a first step to take

time-scales into consideration. Future research should be to systemize and generalize the

found effects.

Limitations of the Study

The study was restricted to one particular merger process and a student sample. One

the one hand, the specific sample may be seen as a limitation. We acknowledge that

employees or staffs' reactions towards a merger might be different. First, more directly

involved organizational members (such as members of the workforce) are expected to identify

more strongly with their previous organization and experience additional threat and

uncertainty (Bartels et al., 2006). More precisely, staff members might be confronted with

fear of job loss, restructuring in organisational workflow, and a new senior management level.

Academic staff might experience changes in terms of various roles and in administration,

research, as well as in teaching. In a qualitative case study among college lectures (Becker, Beukes, Botha, Botha, Botha et al., 2004) it has been shown that throughout a merger college staff experienced increased tension and strain between contract and permanent appointees as well as between former college staff and university staff, related to the associated changing job roles. This had an impact on their self-image and professional identity. Furthermore, in another case study focusing explicitly on organizational identification the authors (Mills, Bettis, Miller, & Nolan, 2005) stated that the necessity of finding new ways of working in the new unit led to reduced efficiency and effectiveness in group processes. This hindered a new organizational identity emerging from positive interaction of those involved in the organization. They further reported that organizational members experienced difficulties in establishing a new identity and resisted to give up their past affiliation (Mills et al., 2005).

On the other hand, our specific sample might be seen as strength because previous research could be replicated, which speaks for some validation of past and present merger research. Past research has found comparable results of social identity processes throughout mergers in various settings, as shown by studies stretching from scenarios with student sample, to laboratory, and to field studies with employees (Amiot et al., 2006; Giessner et al., 2006; van Knippenberg et al., 2002; van Leeuwen et al., 2003). Previously indicated, the recurrent findings speak for the external validity of social identity processes in organizational contexts. Further, the main focus of this paper was on understanding identity issues throughout the merger process. We assumed that the psychological process involved in identification and identity change should not differ for students and staff (Boen et al., 2005; Mael & Ashforth, 1992) as members of the organization. Strengthening this point, previous research has shown that students have a psychological contract with their university that is similar to the one staffs have with their organization (Citera & Stuhlmacher, 2001).

Thus, taking into account these qualitative reports and comparing them with our results, we would assume that employees have more difficulties to adjust to a merger and that the found effects would be more pronounced in an employee sample. Additionally, students are only temporally members of the organisation, different from staff who might work in the same organization for many years. This aspect of transient membership versus long-term tenure might be important when discussing the impact of identity change. As organizational tenure is assumed to strengthen organizational identification, we would expect that accepting the newly merged organization is more difficult for employees who stay longer in an organization than for students (Mael & Ashforth, 1992).

To sum up, we replicated previous findings and have hints that identification processes from students within a merger can be transfused to other organizational members. Yet, generalizing our results to all kind of mergers and populations should be done with caution and future research should be dedicated to systematically compare different status groups within an organization and their reaction in times of change.

A further limitation is the attrition rate. Almost 70% of participants dropped out between Time 1 and Time 3. The attrition led to a cumulative non-response which greatly reduced the size of the final sample. The attrition analysis gave way to the finding that participants who completed the Time 2 questionnaire after they completed the Time 1 survey were slightly more identified with the pre-merger organization than those who dropped out. We can interpret this systematic drop out as such that only those participants continued who were slightly more attached to the pre-merger organization and interested to know what happens with that organization in the course of a merger. In terms of generalization, we suspect that the reported findings from the present sample are slightly stronger than for those who dropped out. That is, effects for those participants who only completed the first questionnaire might have been attenuated.

Even though we used a longitudinal design, problems of reciprocal causation are not solved. Although we established theory-driven assumptions about predictors and their effect on post-merger identification, we can not make any statements about the causal direction (Singer & Willet, 2003). Recently, Bollen and Curran (2004) introduced autoregressive latent trajectory models (ALT) that combine autoregressive, cross-lagged and latent growth models. In doing so, it is possible to simultaneously answer questions regarding directional effects (normally done by autoregressive approaches) and growth as well as development over time (latent growth models), leading to a highly flexible and hybrid model. But these models are not unproblematic and require high standards for longitudinal datasets (i.e., they ideally require five points of measurement). Three wave data can only be modelled after introducing several constraints. Further studies should be designed such that they provide basis for ALT models to answer complex questions about stability and change as well as growth.

Future Research

Generally, future studies should be designed in a way that students' and staffs' reaction are assessed simultaneously, thus focusing on how students differ from staff. This is important in order to acknowledge the potential differences between staff and student samples as described above. Additionally, further studies should be conducted in a way that they provide basis for ALT models to answer complex questions about stability and change as well as growth. Thus, a sufficient sample size and four to five measurement points would be advisable as well as further improvements reducing drop-out to a minimum. This leads to another important point for future research: As the present study was only conducted within one merger stage, it might be interesting to conduct a study over several merger stages, preferably with a pre-merger measurement point (see Seo & Hill, 2005) as well as a follow-up study taking place a considerable amount of time after the merger implementation.

From a theoretical point of view, it would be interesting to take into consideration the evaluation of the newly merged organization as a potential moderator (Tischendorf, 2006) and to focus especially on the aspect of negatively evaluated superordinate categories. Additionally, to further improve social psychological and especially SIA theorizing, we should aim at formulating hypotheses about temporal factors such as short- and long-term effects of variables. We should also aim at predicting when changes in identification follow a linear or non-linear trend. Whereas the present research was rather explorative in examining temporal matters, social psychology theorist should develop *time scale theories*.

Conclusion

Overall, the results of the present research add to a growing body of literature that has supported the importance of adopting an intergroup perspective on organizational merger research. Theoretically, the results of this study are important to the extent that they help to clarify the developmental aspect of identification and point to relevant predictors in a changing intergroup context and thereby put *change* back on the research agenda. Moreover, the study has implications for understanding the interplay of organizational dominance and Time (as a proxy for change) as moderators of identification processes.

Practically, our findings occur to be a little pessimistic as it seems hard to find a best way to foster adjustment to a merger. Different time points within the merger process and organizational dominance influence post-merger identification, making a single strategy to intervene impossible. However, a more optimistic view is that knowing when and under which conditions problems arise alleviates implementations that are tailored to different organizations and stages throughout a merger. Mergers between two organizations need interventions that support members of *both* organizations and take into account problems that occur at different time points.

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Footnotes

[1] The role of students within the university is discussed controversial. Mainly three metaphors, all borrowed from the service marketing literature, are used to describe students as (1) customers (Schwartzman, 1995), (2) products (Sirvanci, 1996), or (3) employees (Helms & Hey, 1994). Another way to describe the relationship and interaction students have with the institutions is to see them as *partial employees* (Hoffman & Kretovics, 2004). The traditional metaphors of students as customers, products and employees fail to convey the complexity of students' roles in educational settings. As Hoffman and Kretovics pointed out, the student as partial employee perspectives overlaps and ties together the traditional approaches. Yet, we see students as an independent entity and as an essential as well as an indispensable part of the university, regardless of their time-restricted membership. Students are highly involved in the university, are active members of the educational process, and they often perform according to role expectations (Hoffman & Kretovics, 2004). We believe that they are highly attached with the organization and identify with their alma mater. Therefore, we assume that their relationship with the academic institution is strongly influenced by a merger.

[2] In the social identity approach, the relationship between groups is typically discussed in terms of group status rather than dominance or power. Status is linked to identification processes (Ellemers, 1993) and reflects the social value of a group. Research in the context of mergers has shown that status perception has an impact on ingroup bias (e.g., Terry & O'Brien, 2001) and identification (e.g., Boen, et al., 2006). Status and power/ dominance are essentially related concepts such that groups of higher status tend to be more powerful or dominant. On the other hand they might be distinguishable as they imply different mechanisms (Boldry & Gaertner, 2006; van Knippenberg et al., 2002)

In the context of a merger organizational dominance describes power relations within the merger pointing to the different modes of integration (Giessner et al., 2006; Malekzadeh & Nahavandi, 1990). Organizational dominance is a specific term and closely related to power, defined as the ability to control or influence. Status in the context of mergers is more strongly connected to the comparison between the groups before the merger (Giessner et al., 2006). In the present paper, we assume that dominance and status covary as the pre-merger status of the institutions of higher education is interconnected with the post-merger dominance. For simplicity we use the term dominance (or dominant vs. subordinate organization) rather than status or power (see also van Knippenberg et al., 2002), to indicate status-related post-merger dominance. For empirical indication of organizational dominance see also Footnote 4.

[3] For an overview on the distinct features of merger in the higher education sector, see Harman and Meek (2002).

[4] In the German tertiary education universities are regarded as more prestigious than polytechnics. In general, universities are more theoretical oriented whereas polytechnics are more practical and training oriented. Additionally, in the merger at hand, the university was bigger in size (approx. 7000 students) than the polytechnic (approx. 4000 students), suggesting that is also has more influence in the merger process. The name of the newly merged organization equaled the name of the University. Moreover, we asked for dominance perception ("Which group has the stronger influence on the merger process?" ranging from 1 = Polytechnic to 7 =University). The perception of dominance differed between students of the Polytechnic ($M = 5.66$, $SD = 1.13$) and students from the University ($M = 5.14$, $SD = 1.08$), $t(154) = 2.90$, $p = .004$. However, both organizations' members perceived the University to be the stronger merger partner.

[5]Economy students were chosen because both former institutions taught economy and the departments were merged into one new School of Economy

[6] At Level 1 we expressed a linear change model as follows (Singer & Willet, 2003):

$$IDNew_{it} = \pi_{0i} + \pi_{1i} Time_{it} + e_{it} \qquad (1)$$

In Equation 1 $IDNew_{it}$ represents the post-merger identification for $individual_i$ at $time_t$. When Time 1 = 0 (Time coded as Time 1 = 0, Time 2 = 1, Time 3 = 2), the individual growth parameters are interpreted as follows: π_{0i} represents $individual_i$'s level of post-merger identification at Time 1; π_{1i} represents an individual's rate of change. The residual in Equation 1 e_{it} represents the portion of individual's post-merger identification at time t that is not predicted by Time.

The between-person portion of the multilevel model for change (Level 2) used the individual growth parameters from the within-person data (Level 1) as outcomes and enables to determine whether individuals vary in their initial status, rate of change, or acceleration, and if so, what predicts variation.

$$\pi_{0i} = \beta_{00} + \beta_{01}Organisation_i + u_{0i} \qquad (2)$$

$$\pi_{1i} = \beta_{10} + \beta_{11}Organisation_i + u_{1i} \qquad (3)$$

The composite model tested is expressed as the following model:

$$IDNew_{it} = \beta_{00} + \beta_{01} Organisation_i + \beta_{10} Time_{it} +$$

$$\beta_{11} Organisation_i * Time_{it} + (e_{it} + u_{0i} + u_{1i} * Time) \qquad (4)$$

[7] $\rho = \tau_{00}/ \sigma^2 + \tau_{00}.$ The coefficient measures the proportion of variance in the outcome that is between groups. It applies only to random-intercept models ($\tau_{11} = 0$).

[8] Aiken & West's (1991) definition of a simple slope as a conditional relation between a predictor and a criterion at a given value of a second predictor is transferable to HLM models, then named simple trajectory. A simple trajectory refers to a conditional relation

between the repeated dependent measure and time (or another predictor) at a given value of a second predictor (Curran et al., 2006).

[9] The random effect for Time² was set zero, because we only have three points of measurement and three coefficients to estimate. HLM does not allow estimating such a model. We therefore restricted the random effect of Time² to be zero. Snijders (1996) argues that when working with higher order polynomials, the higher order terms are often constant or fixed. However, we tested another model where we restricted the random effect for *Time* to be zero and freely estimated the random effect for *Time²*; the random effect was 0.02 and not significant, indicating that this residual variance is not reliably estimated and we can restrict it to zero for the following analysis (e.g., Nezlek, 2001; Schnabel, 1998).

Table 1

Means and Standard Deviation, and changes over Time and differences between groups

	Time 1		Time 2		Time 3		F_{Time}	η^2	$F_{Orga..}$	η^2	$F_{TimexOrga.}$	η^2
	Domt.	Subord.	Domt.	Subord.	Domt.	Subord.						
	M (SD)	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	*M (SD)*	(2, 152)		(1, 155)		(2, 152)	
Post-merger identification	3.81[a] (1.32)	3.27[a] (1.52)	3.75[a] (1.36)	3.16[a] (1.33)	3.97[ac] (1.41)	3.47[ac] (1.38)	3.10*	.02	8.69***	.05	.11	<.01
Pre-merger identification	5.41 (0.86)	5.42 (0.97)	5.69[b] (0.87)	5.66[b] (1.09)	5.67[d] (0.99)	5.61[d] (1.13)	6.27**	.04	.041	>.01	.09	<.01
Ingroup Typicality	2.87[abd] (1.08)	4.32[abd] (0.83)	2.55[ab] (1.13)	4.20[ab] (0.99)	2.58[ad] (1.03)	4.10[ad] (0.94)	3.90*	0.5	276.10***	.54	0.51	<.01
Perceived Fairness	3.77[a] (0.76)	3.42[a] (1.11)	3.61[a] (1.04)	3.25[a] (1.14)	3.71[ad] (1.09)	3.09[ad] (0.98)	2.60+	.03	10.63***	.06	1.90	.01

Note. Domt.= dominant; Subord.=subordinate
[a] significant difference between dominant vs. subordinate group
[b] significant difference Time 1 compared with Time 2
[c] significant difference Time 2 compared with Time 3
[d] significant difference Time 3 compared with Time 1
+ p<.10, *p<.05, **p<.01, ***p<.005 (two-tailed test)

Table 2

Cross-sectional correlations between variables at T 1, Time 2, and Time 3 (N=157)

	Time 1				Time2				Time 3			
	1	2	3	4	1	2	3	4	1	2	3	4
1. Post-merger identification	-	.10	.39**	.49**	-	-.14	.13	.47**	-	-.03	.05	.49**
2. Pre-merger identification		-	-.01	-.12		-	-.03	-.10		-	-.03	-.08
3.Ingroup Typicality			-	.41*			-	.21*			-	.25**
4. Perceived Fairness				-				-				-

Note. *p<.05. **p<.01 (two-tailed tests)

Table 3

Estimates of Fixed and Random Effects from a Series of Multilevel Models for change in with pre-merger identification, ingroup typicality, and perceived fairness as time-varying predictors (N=156)

	Parameter Estimation (*SE)*								
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
Fixed effects									
Intercept	3.56***	3.47***	3.53***	3.81***	3.75***	3.85***	3.95***	3.63**	3.84**
	(0.09)	(0.09)	(0.10)	(0.14)	(0.15)	(0.13)	(0.18)	(0.12)	(0.15)
Time		0.09	-0.27	-0.28	-0.20	-0.28	-0.15	-0.14	-0.17
		(0.06)	(0.18)	(0.18)	(0.22)	(0.18)	(0.25)	(0.18)	(0.18)
Time²			0.18**	0.18*	0.14	0.18^{*}	0.07	0.14^{+}	0.15^{+}
			(0.08)	(0.08)	(0.10)	(0.08)	(0.11)	(0.08)	(0.08)
Organization (Orga.)				-0.56**	-0.55**	-0.60**	-0.53**	-0.34*	-0.50
				(0.18)	(0.21)	(0.19)	(0.23)	(0.15)	(0.18)
Time x Orga.					-0.12				
					(0.36)				

Time² x Orga.	-0.07		
	(0.16)		
Pre-merger identification (id.)		0.40**	0.55***
		(0.14)	(0.11)
Pre-merger id. x Orga.		-0.67**	-0.75**
		(0.19)	(0.25)
Pre-merger id x Time		-0.77*	-0.86*
		(0.31)	(0.27)
Pre-merger id. x Time²		0.32**	0.35*
		(0.14)	(0.13)
Pre-merger id. x Time x Orga.		1.10**	0.93
		(0.40)	(0.53)
Pre-merger id. x Time² x Orga.		-0.44*	-0.35
		(0.18)	(0.23)
Typicality		0.08	-0.19**
		(0.14)	(0.88)

Typicality x Orga.	-0.50**	0.23**
	(0.22)	(0.23)
Typicality x Time	0.16	
	(0.14)	
Typicality x Time²	-0.31	
	(0.30)	
Typicality x Time x Orga.	-0.18	
	(0.20)	
Typicality x Time² x Orga.	0.08	
	(0.43)	
Perceived Fairness	0.58***	0.62***
	(0.08)	(0.08)
Fairness x Time	0.26^{+}	-0.36**
	(0.14)	(0.13)
Fairness x Time²	0.11^{+}	0.16^{**}
	(0.06)	(0.06)

Random Effects									
Level-1 residual variance (r)	0.92	0.73	0.71	0.71	0.71	0.69	0.68	0.73	0.69
Level-2 residual variance									
Growth rate, u_0	1.08	1.29	1.30	1.23	1.22	1.08	1.07	0.75	0.63
Time, u_1		0.19**	0.19**	0.19***	0.20***	0.19*	0.16**	0.09*	0.08*
Time², u_2[9]									
Deviance	1527.17	1517.71	1512.96	1512.80	1511.23	1488.67	1477.56	1433.20	1401.22
	(df=3)	(df=6)	(df=7)	(df=8)	(df=10)	(df=14)	(df=14)	(df=11)	(df=19)

Note. Model 1 is an unconditional means model. Model 2 and 3 are unconditional growth models. Model 4 and 5 control for the effect of the time-invariant predictor organizational dominance. Model 6 builds on Model 4 by adding the main effect of pre-merger identification as well as pre-merger identification x Time and pre-merger identification x Time² interactions. Model 7 builds on Model 4 and adds the main effect of typicality as well as the typicality x Time and typicality x Time² interactions. Model 8 builds on Model 4 by adding the main effect of perceived fairness and the interaction effect with Time and Time². Model 9 is the final model examining simultaneous effects of time-varying and time-invariant predictors.

Full Maximum Likelihood Estimation (FML) was used.

Organization was dummy coded (dominant =0, subordinate =1).

Time was coded Time 1=0, Time 2=1, Time 3=2

Level 1 predictors entered in Model 6-9 are grand-mean centred.

[+]p<.10, *p<.05; **p<.01; ***p<.001.

Figures Caption

Figure 1. Effects of pre-merger identification and Time on post-merger identification for members of the dominant organization.

Figure 2. Effects of pre-merger identification and Time on post-merger identification for members of the subordinate organization.

Figure 3. Effects of perceived fairness and Time on post-merger identification across members of both organizations.